

RESEAU INTERNATIONAL
DES ORGANISMES DE BASSIN

INTERNATIONAL NETWORK
OF BASIN ORGANIZATIONS

RED INTERNACIONAL
DE ORGANISMOS DE CUENCA

4th QUARTER OF 1998 N° 7

The network newsletter

AQUADOC-INTER

Towards a worldwide system for exchanging documentation

AQUADOC-INTER will be an international network of information sources. Information will be selected, indexed and disseminated according to standardized methods and multilingual access will be available.

The "AQUADOC-INTER" project aims at exchanging, via the Internet, the available institutional and economic documentation between basin organizations and central governmental bodies, members of INBO.

In the long-term, the system will rely on a National Relay Documentation Center (NRDC) in each of the 44 interested countries that will supply the system with validated and standardized information which will be accessible on a common server to all users worldwide.

The AQUADOC-INTER Management Committee gathers the National Relay Documentation Centers (NRDC) nominated by INBO's basin organizations.

Following its constitutive meeting, held in Limoges (France) on December 11 and 12, 1997, the Management Committee met in Salvador (Brazil) on 1 December 1998.

TRIAL OF THE FIRST MODEL

The International Office for Water, as INBO's Permanent Technical Secretariat and French NRDC, has implemented the model for the system.

This model shows how to organize information and documents. It comprises tools for a bilingual search for information (English-French).

It is a dynamic system which centralizes exchanges, enables on-line debates and the dissemination of news, etc.

It enables the follow-up of new information loaded on the network, thanks to a system called "VIGIE".

Multilingual access

Two famous European bilingual search engines (English-French) have been tested.

A query made in a language is translated by the system to search the relevant information in both languages. Extension to the Spanish language is planned at the beginning of 1999.

Their efficiency in searching information will grow when dictionaries specific to water are developed and added.

Structured information

In a first phase, raw information is gathered and processed by engines in the following formats: text, html, RTF when images are integrated (optical character recognition -OCR- or word processed electronic documents).

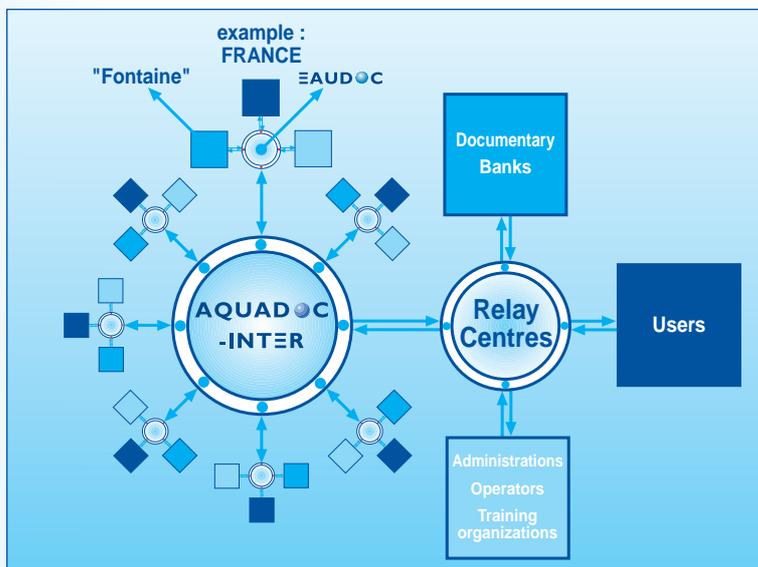
The documents are presented with their title, the degree of relevance as compared to the query, the "supplier" country, their date and the weight of the information (in Ko).

The use of a "standard for the exchange of documentary information", is however necessary for feeding the system from NRDCs all around the world.

www.oieau.fr/riob/
From now on,
all information related
to INBO is available



on the WEB
www.oieau.fr/riob/



ICWSD

INTERNATIONAL CONFERENCE
"WATER AND SUSTAINABLE DEVELOPMENT"
PARIS - MARCH 19-20-21, 1998



1200 DELEGATES FROM 85 COUNTRIES APPROVED THE PARIS DECLARATION



Speech of Mr. Jacques Chirac, President of the French Republic, during the Conference

Further to the initiative of the President of the French Republic, Mr. Jacques CHIRAC, during the United Nations Extraordinary General Assembly in June 1997 in New York, the French Government invited the representatives of 85 Countries, including the members of the Commission on Sustainable Development, the Organizations of International Cooperation and the Civil Society, to participate in the International Conference on Water and Sustainable Development held in Paris on March 19-20-21, 1998.

The French Ministries for Foreign Affairs and Environment, in relation with the Ministries of Agriculture, Cooperation, Public Works, Research, Health and the Water Agencies, entrusted the International Office for Water with the organization of this Conference, as regards technical aspects and logistics.

More than 1200 delegates participated in the workshops that took place at UNESCO. This demonstrates that the en-

tire world is aware of the importance of a better water resources management for the future of humanity.

The delegates unanimously approved the "Paris Declaration" in which they are concerned that constraints on access to water, in terms of quantity and quality, could become a major limiting factor for sustainable development.

The "Paris Declaration" calls upon the International Community, Public Authorities and Civil Society to give priority to providing access for all to safe drinking water and sanitation, and to mobilize themselves in order to:

- promote integrated water resources management,
- mobilize adequate financial resources from public and private sectors,
- improve knowledge, training and information exchange.

The delegates emphasized the importance of following up the guidance contained in the "Program of Priority Ac-

tions" developed by the Experts' Workshops, during which more than 270 papers were presented.

This "Program of Priority Actions" is based on three main topics:

I - IMPROVING KNOWLEDGE OF WATER RESOURCES AND USES

It is recommended to:

- establish and improve integrated monitoring systems (collection, analysis, management and dissemination of data on water quantity and quality, availability and uses as well as ecosystems).

Such systems should be developed at the different relevant levels and be structured in the form of long-term monitoring systems for large river basins.

Priority should be given to harmonization and standardization allowing data exchange.

- strengthen regional, national and international programs for acquiring fundamental knowledge, of major trends and their impact in particular.
- promote the networking of interlinked and widely disseminated systems for exchanging documentation on water.

II - PROMOTING HUMAN RESOURCES DEVELOPMENT AND INSTITUTIONAL CAPACITY BUILDING

This topic deals with:

- the promotion of necessary reforms which require:
 - adequate legislation and regulations,
 - effective management organizations,

- institutional bodies and procedures enabling the participation of local authorities, representatives of users and civil society in decision-making,
- master plans for long-term water development and management, at the level of large river basins or aquifers in particular,
- multi-year priority investment programs that take into account "user-pays" systems and the "polluter-pays" principle, and ability to pay.

Devolution of responsibilities to local authorities should be encouraged.

It is recommended that a significant share of official development assistance be allocated for the promotion of these activities

- **the organization of trans-boundary inland water management**

To this end, it is desirable inter alia to:

- promote the exchange of reliable and comparable information between riparian countries,
- develop dialogues at all levels, including at the level of the relevant international institutions and arrangements whenever appropriate,
- define priority action plans of common interest to be implemented in order to improve water management and pollution control.

There are more than 215 transboundary rivers in the world. The action of bi- and multilateral donor institutions

should be enhanced and facilitated for their management.

- **the collection of economic information** to improve knowledge of water costs in the different uses and monitor performance.
- **the development of training and information of both professionals and users in the water sector.**

Official Development Assistance should give priority to the establishment and development of regional training focal points, while developing, as a first step, the educational capacities of existing training institutions.

The training of trainers and the development of necessary educational materials should be promoted by organizing these training institutions into networks.

Training the least qualified staff (who represent the majority of workers in the sector) by using appropriate on-the-job training methods, should be given a high priority.

Specific actions should be strengthened to enable women to participate in the formulation and management of projects.

III - DEFINING STRATEGIES AND IDENTIFYING APPROPRIATE MEANS OF FINANCING

Water planning and management need to be taken into account within a socioecono-

mic development context while recognizing the vital role of water in the fulfillment of basic human needs, food security, poverty alleviation and the functioning of water-related ecosystems.

To seek that the various functions of sustainable water management are funded, appropriate frameworks should be established in order to:

- **enable the mobilization of private or public funds,**
- **facilitate access to credit by decentralized management structures,**
- provide the private investors with appropriate **risk guarantee** schemes for the financing of investments,
- **set up "user-pays"** pricing systems that cover direct or indirect costs of the services with the costs billed to users who can afford to pay,
- **manage the transition towards the total recovery** of operation, maintenance, replacement and management costs,
- **take the necessary measures,** cross-subsidies in particular, to prevent the management of services limiting access to water by low-income users,
- **apply efficiently the "polluter-pays" principle,**
- **take into account costs related** to the acquisition of knowledge, surface and ground water protection and development, the preservation and management of ecosystems, river basins,

aquifers and the maintaining of wetlands and water flow in watercourses.

The joint action and co-financing of multilateral and bilateral donors should be emphasized, in order that recipient countries obtain maximum effectiveness from external financing, in particular for integrated regional projects.

Besides, concessional financing should first concentrate on enabling activities.

Among these, **nine priorities have been chosen:**

- 1 **meeting the basic needs of underprivileged populations,**
- 2 **the organization of integrated monitoring systems and databases,**
- 3 **the implementation of institutional, administrative and economic reforms,**
- 4 **vocational and on-the-job training,**
- 5 **facilitate public-private partnerships,**
- 6 **sustainable management of water-related ecosystems,**
- 7 **research and training,**
- 8 **natural disaster (flood and drought) preparedness,**
- 9 **efficiency of irrigation.**

All recommendations and papers of the International Conference on Water and Sustainable Development are available on the Internet:

<http://www.oieau.fr/ciedd>

EXPERTS' GROUP MEETING ON WATER STRATEGIES HARARE (ZIMBABWE), 27-30 JANUARY 1998

An Experts' Group Meeting on Water Management Strategies was held in Harare (Zimbabwe) from 27 to 30 January 1998 to prepare the sixth session of the Commission on Sustainable Development, United Nations, New York, 20 April - 1st May, 1998.

The International Network of Basin Organizations (INBO) was invited to participate in the Harare meeting. I participated in this meeting as INBO's Chairman and as representative of Spain.

The meeting, was positioned within the context of Article 18 of Agenda 21.

Progress has been made since 1992 regarding water quality in some rivers with the reduction of toxic discharges, the use of new technologies to reduce agricultural and industrial consumption, the improve-

ment of sanitation installations, a better soil use and conservation, the creation of institutions for integrated water resources management, water policies, and with the setting-up of information systems and the formulation of action plans for improving the quality of water and aquatic ecosystems. Initiatives have been started for integrated management using river basins, international rivers included, and international information networks were created to improve integrated management.

We should remain humble however and admit that the progress made is not sufficiently generalized and is still insufficient to reduce the overall trend towards the diminution of water quantity and especially quality and towards an increasing pressure on aquatic ecosystems.

It is essential to integrate water resources management into national economic policies as a key element of sustainable development and poverty alleviation.

It is also fundamental for protecting aquatic ecosystems, water quality and human health.

On the other hand, to be successful, this integrated management requires:

- the financial sustainability of the water sector,
- the strengthening of the capacity building of institutions and groups, the development of human resources,
- the furthering of the participation of urban populations.

New challenges and problems will occur in the future as regards the sustainable de-

velopment of water resources. However, the experts' opinion is that, in spite of serious problems of water resources scarcity and pollution arising in many regions of the world, public authorities cannot let water become a limiting factor for sustainable development and the well-being of populations.

A series of crisis with regional, even international, implications could be avoided if actions, aimed at integrated water resources management, were adopted now.

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"RIVER BASIN MANAGEMENT" WORKSHOP

PARIS CONFERENCE - 20 MARCH 1998

"PARTICIPATION OF USERS IN THE MANAGEMENT AND FUNDING OF BASIN ORGANIZATIONS"

At the invitation of the French Government and with the financial support of the six French Water Agencies, INBO organized an international workshop on 20 March 1998 at UNESCO's headquarters in Paris, during the International Conference on Water and Sustainable Development. Its recommendations were presented by Juan Manuel ARAGONÉS BELTRAN, INBO's Chairman, during the Conference's ministerial session.

This workshop, that gathered more than 280 participants, recommended that a global, integrated and consistent management of water resources and related ecosystems be organized:

- ① on the relevant scale of large river basins and aquifers;
- ② with the participation in decision-making of local

authorities, the various categories of users and associations besides governmental bodies;

- ③ based on master plans that set long-term objectives;
- ④ within multiannual priority investment programs that result from these master plans;
- ⑤ mobilizing appropriate funding, based on the "polluter-pays" principle and "users-pay" systems.

INBO recommended in particular:

- the formulation of legal frameworks to achieve these five objectives,
- the organization and participation of users in river basin committees,
- the establishment of specific river basin charges,
- the signature of international agreements for the management of transboundary rivers,
- the mobilization of Official Development Aid to set up appropriate river basin organizations in particular for international rivers.

MEETING OF BASIN ORGANIZATIONS FROM CENTRAL AMERICA AND THE CARIBBEAN

On the initiative of Guatemala, one hundred and ten (110) representatives from Salvador, Honduras, Nicaragua, Costa Rica, Panama, the Dominican Republic and Guatemala met in Guatemala City on 29, 30 and 31 July 1998 with the support of France, Mexico, the Central American Parliament and the Cooperation Agencies AID, CAPRE, GTZ in order to follow up basin management in these countries, to exchange experience and knowledge and to evaluate the situation regarding the basin of lake Amatitlan.

COMMON RESOLUTION

Taking into account the experience of every country in the management of natural resources, the hydrographic basin being the planning unit, and the extent of the problem of the deterioration of resources in the region.

The representatives gathered during the 2nd meeting of basin organizations from Central America and the Caribbean agreed on the following points:

- ① The common management of natural resources in the context of Central America and the Caribbean.
- ② The lack of regulations requires that the countries concerned make a concerted effort regarding the sustainable management of transboundary basins.
- ③ It appears necessary to encourage a long term co-operation project in Central America and the Caribbean, which would allow integrated basin management and an improvement in the capacities of the organizations concerned, with the support of the Latin American Network of Basin Organizations.

It is therefore necessary to:

- encourage, in the short term, the development of a legal, technical and institutional framework for Central America and the Caribbean, furthering policies for integrated basin management (in socio-economic and environmental terms), by creating specialized legal bodies within each country and requesting the total support of the Central American Parliament.
- guarantee the financial sustainability of programs for integrated basin management, by urging the environmental funds of each country to consider basin management a priority at regional and local level,
- strengthen the executive function of the Central American and Caribbean Forum managing water resources, in order to provide this organism with the means to follow up, evaluate and execute the agreements which have been signed, while working to have them implemented,
- reinforce the networks for the exchange of information, based on a standardized regional data base in order to make progress in the management of projects and initiatives aiming at integrated river basin management.



2nd meeting of basin organizations from Central America and the Caribbean

It was also decided to organize the 3rd Meeting of Basin Organizations from Central America and the Caribbean in the Dominican Republic or possibly Nicaragua.

FORMULATION OF A REGIONAL COOPERATION PROGRAM

The second meeting of members of the International Network of Basin Organizations (INBO) from **COSTA RICA, GUATEMALA, HONDURAS, NICARAGUA, PANAMA and SAN SALVADOR**, which was held in July 1998 and chaired by Mrs. Evelyn REYNA CHACÓN, Manager of the Lake Amatitlan's Authority, was the opportunity to start a multiannual cooperation program.

Its **priority components** were defined together with the regional partners: the Central American Commission on Development (CCAD), the Regional Committee for Water Resources (CRRH) and CAPRE, and national partners from each country, in cooperation with Messrs. BERGOEING, Regional Delegate for French Scientific and Technical Cooperation for Central America, Jean-François DONZIER, General Manager of the International Office for Water and Alain BERNARD, Head of the River Basin Division, and Mr. PAQUET, specialist of NanCIE:

- 1 **Improvement of knowledge** of water resources, different uses and withdrawals, discharges and pollution sources, quality of water and related aquatic ecosystems. (Standardization of data - integrated geographic information systems, computerized exchange formats - the setting-up of national and basin observation systems - observatories)
- 2 **organization of appropriate institutional frameworks** (legislative reforms, organization of responsibilities, the setting-up of basin organizations, users' participation in River Basin Committees, training for civil servants and representatives of users and local authorities...)
- 3 **planning and action plans**, which integrate participative management, the implementation of investment plans that aim at sustainable development, environmental aspects and the setting-up of adapted instruments for administrative and technical follow-up.
- 4 **adaptation of funding systems** (corporate management of water supply

and sanitation utilities and community irrigation, application of the "user-polluter-pays" principle, feasibility studies and establishment of water charges systems to finance community investments in the basin. Registering of people liable to pay taxes, Master Plans for Water Development and Management - National Plans for water resources...)

These aspects would be developed and integrated within the region.

This program will last three years and aims to combine activities dealing with:

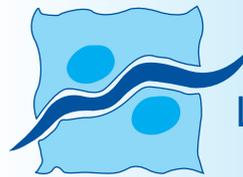
- specific training programs on administrative skills corresponding to the four priority topics;
- specialized international audits with experts from IOW, the French government and the six Water Agencies, including missions for specialized assistance;
- full scale field experiments in several river basins, two or even three of which will be transboundary river basins that remain to be determined. The river basins which are being considered are those of the Rio San Juan, Rio Suxaola, Rio Lempa.

Therefore, it would be possible to deal with this very significant problem of transboundary rivers in the region and thus with the issues of international agreements, mixed Commissions, and of data exchange.



INBO ON THE WEB
<http://www.oieau.fr/riob>

- Declaration of membership
- List of member organizations
- Charter of organization and operation
- Final resolutions of General Assemblies: Morelia 96 (Mexico) and Valencia 97 (Spain)
- Proceedings and recommendations of technical and international workshops:
 - Morelia (information systems)
 - Constanza (master plans)
 - Valencia (funding)
 - Paris (users' participation)
- Information sheets on member organizations and experts
- Registration to INBO events



"LANBO"

LATIN AMERICAN NETWORK OF BASIN ORGANIZATIONS

The first General Assembly of the Latin American Network of Basin Organizations "LANBO" took place in Santafé de Bogotá, Colombia, from 3 to 6 August, 1998.

It gathered the representatives of all organizations - INBO members from the continent who approved the statutes and nominated the Bureau, presided by Mr. Diego BRAVO BORDA, Director General of the Autonomous Corporation of CUNDINAMARCA.

The other Bureau members are:

- Vice President: Mr. Carlos Abihaggle, Argentina
- Members: Mrs. Maureen Ballesterero, Costa Rica, Messrs. Pedro Basabe, Ecuador, Raymundo Garrido, Brazil, Humberto Peña, Chile, and Lenin Herrera, Venezuela
- Executive Secretary: Mr. Eduardo Mestre, Mexico

THE BOGOTA DECLARATION

The delegations of the Latin American and Caribbean Network of Hydrographic Basin Organizations (LANBO), gathered for the First General Assembly, in Santafé de Bogotá (Colombia), decided to pass this Declaration, based on the following points:

- Hydrographic basins should be seen as the main units for sound water management, ensuring the continuation of life in Latin America;
- As members of the Network, the organizations which manage water resources, must adopt and apply the guidelines and principles of the hydrographic basin policy in their home country;
- Inter-institutional and social participation should lead to new relations between the populations, their environment and the management organizations.

The delegations are committed to:

- contributing to Latin American integration in technological, educational and cultural processes;
- promoting, among members of the Network, the directives and actions defined in the documents developed at the time of the Bogota Meeting;
- developing activities aimed at establishing and promoting a water culture among populations of each basin.

These activities would target different age groups according to their requirements and their local socioeconomic, educational and cultural situation;

- foster the adoption by these populations of habits, attitudes and values favourable to the preservation and sound consumption of water.

They reaffirmed that:

- the hydrographic basin is a common unit for integrated, sound and sustainable water management
- as basin organizations, based on the principles of fraternity, integration and autonomy they are willing to exchange experiences, while respecting the natural differences and features of the various regions and countries of Latin America and the Caribbean.

They defined common areas for work in the Network, in terms of the:

- exchange of experiences acquired by the organizations, successful procedures, models and methodologies and the formulation of a reference framework, of necessary, up to date information;
- definition of technical objectives which guide the organizations in their institutional work, directives and objectives regarding the creation of a water culture, with respect for the diversity of opinions and strategies;
- setting-up of systems for the development and training of personnel in the water sector.

They reiterated their adhesion to the principles of sustainable development, which were recently recalled by the United Nations Organizations during the Conference on Water and Sustainable Development, which took place in Paris in March 1998.

They thanked the Colombian authorities and in particular the Autonomous Corporation of Cundinamarca (CAR), who organized the event, for their hospitality during this meeting.

The next LANBO General Assembly will be held in Mendoza - Argentina - in 1999.



CHARTER OF ORGANIZATION AND OPERATION

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

The issues thus raised are numerous and complicated.

The solutions brought must allow for :

- contending with natural catastrophes and the risks of erosion, floods or drought, taking into account physical and water management,
- reliably meeting the urban and rural populations requirements in terms of good quality potable water, in order to improve hygiene and health and to prevent important outbreaks of disease,
- purifying farmlands and developing appropriate irrigation systems to produce enough agricultural food,
- harmoniously developing industry, energy production, recreational activities and, in some areas, tourism and waterways navigation,
- preventing and controlling pollution of all kinds and origins, in order to preserve the aquatic ecosystems and more especially, to protect fauna and optimize fish breeding for human consumption, while meeting the requirements of various utilizations and more generally, preserving the biodiversity of the aquatic environment

All these issues can no longer be approached by sector or localization, nor approached separately. On the contrary, the solutions must associate the national and local authorities with the users, in an integrated approach, respecting the natural environment, organized on the scale of hydrographic units and aiming at the sustainable utilization of water resources.

It is recommended that the agreements and strategies, the programmes, financing and monitoring be designed at the river basin level and that cooperation agreements be formalized between riparian countries regarding large shared rivers, lakes and seas.

NETWORK OBJECTIVES

The International Network of Basin Organizations has the following objectives :

- to develop permanent relations with the organizations interested in a global river basin management, and facilitate exchanges of experiences and expertises among them,
- to promote the principles and means of sound water management in cooperation programmes to reach a sustainable development,
- to facilitate the implementation of tools for institutional and financial management, for

programming, for the organization of data banks, of models adapted to the needs,

- to promote information and training programmes for local elected officials, for users' representatives and for the different actors involved in water management as well as for the executives and staff of the member basin organizations,
- to encourage education of the population, the young in particular,
- to evaluate ongoing actions and disseminate their results.

NETWORK MEMBERS

The Network is open to :

- the **organizations managing** large national or federal, or even transfrontier **river basins** and the cooperation structures they have developed among them.

The term "Basin Organizations" implies public organizations with legal existence, or pending creation according to the legislation in force in their country, having statutes and their own budget,

- the **governmental administration in charge of water management** in the countries applying or being interested in applying integrated water management :

- . organized through large hydrographic units (River Basins)

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

The term "large hydrographic units" means large river and lake basins without their various tributaries,

- **bi and multilateral cooperation agencies** supporting institution-building activities related to large catchment areas and aquifers.

The members are being so considered as soon as they have applied to belong to the Network by signing the **DECLARATION OF MEMBERSHIP**.

PERMANENT OBSERVERS

The other public organizations that are interested in the Network, can apply to participate in its activities as **permanent observers**, provided that their application is forwarded by the Liaison Bureau

and accepted by the General Assembly.

They can attend the General Assembly meeting without any right to vote.

ORGANIZATION OF THE NETWORK

The Network is a flexible structure relying on the members' willingness to work together.

It has no legal statute, nor a status of international organization, it is simply governed by this **CHARTER OF ORGANIZATION AND OPERATION**.

NETWORK PRESIDENT

He is the Chairman of the General Assembly.

He is nominated by the member(s) hosting the meeting.

He represents the Network up to the following meeting of the General Assembly.

He ascertains that the Bureau's recommendations and General Assembly's conclusions are applied up to the next Bureau meeting and organizes the work of the Secretariat.

LIAISON BUREAU

It is composed of the serving President of the Network, of the two preceding Presidents and of :

2 member for Africa

4 members for Latin America

1 member for Asia

4 members for Central, Eastern and Western Europe

Its composition may be revised at each General Assembly according to the memberships to come from each geographic region.

The members of each above-mentioned geographic region propose to the General Assembly, when a consensus is reached

among them, the country/ies that will represent them at the Liaison Bureau. The members of each of the countries chosen will nominate the personality that will attend the Bureau meeting.

Two to three Bureau meetings will be held for each 12 month-period between two General Assemblies.

It is chaired by the representative nominated by the member(s) hosting the meeting.

It prepares the meeting of the next General Assembly.

It carries out the conclusions of the previous General Assembly.

It coordinates the shared projects.

It examines the applications of new permanent observers as well as these of new members of the Network and proposes their membership to the next General Assembly.

It adopts the recommendations by consensus between the attending members.

The personalities participating in the Bureau may nominate a substitute when prevented from attending a meeting.

The member(s) hosting the next Bureau meeting will set the date after receiving confirmation that at least two-third of the members will be able to attend.

GENERAL ASSEMBLY

It convenes all the members of the Network.

The General Assembly is presided over by the President of the Network.

It holds an ordinary meeting every year and can convene extraordinary meetings.

The Ordinary General Assemblies are held every year in a different geographic region whenever possible.

THE GENERAL ASSEMBLY :

- approves the content of the **Declaration of membership** and of the **Charter of organization and operation** as well as the changes that may be added,

- officializes the acceptance of new members proposed by the Liaison Bureau, as well as the applications to become permanent observers,

- proposes orientations to the **Network activities**,

- approves the **shared projects** proposed by the Liaison Bureau, and sets up, when necessary, **operational units** for their implementation,

- ensures that the **Network** is promoted to the concerned **National Authorities and bi and multilateral Cooperation Agencies**,

- defines the composition of the **Liaison Bureau**.

The conclusions of the General Assembly are adopted by **consensus** between the attending Members. When a consensus cannot be reached, the President may, as a last resort, request a vote to obtain a two-third majority among the attending members.

Qualified personalities or interested organizations may be invited by the host-member(s) to attend the General Assembly meeting without participating in the debates, in the same way as the permanent observers.

SECRETARIAT

The secretariat of the Network will be carried out by :

- a **Chairmanship's Secretariat**, organized by the host-organization(s), which takes charge of logistics for the meetings of the Liaison Bureau and General Assembly,

- a **Permanent Technical Secretariat**, chosen by the Liaison Bureau among the applications received, and proposed to the General Assembly that will nominate it for four years.

It is responsible for preparing the documents for the Liaison Bureau and General Assembly meetings, writing the reports under the authority of the President, periodically publishing the **Network Newsletter**, leading the Network and following up the shared projects

jects in close relation with the relevant **operational units**.

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

The Manager of the organization that was in charge of the Permanent Technical Secretariat during the preceding period, is also invited to these meetings during the four following years in order to ensure a continuity in on-going actions, and to provide his support to the serving Secretariat.

NETWORK ADDRESS

It is the address of the Permanent Technical Secretariat.

REGIONAL NETWORKS

Regional Networks may be established upon the initiative of Member Organizations belonging to the same geographic region, provided their request is forwarded by the Liaison Bureau and accepted by the General Assembly.

The Network President and the representative of the Permanent Technical Secretariat are invited to the meetings and events organized within each regional network.

FUNDING PRINCIPLES

The Network activities are financed as follows :

MEETINGS OF THE LIAISON BUREAU AND OF THE GENERAL ASSEMBLY :

- international travel cost borne by the participating members,

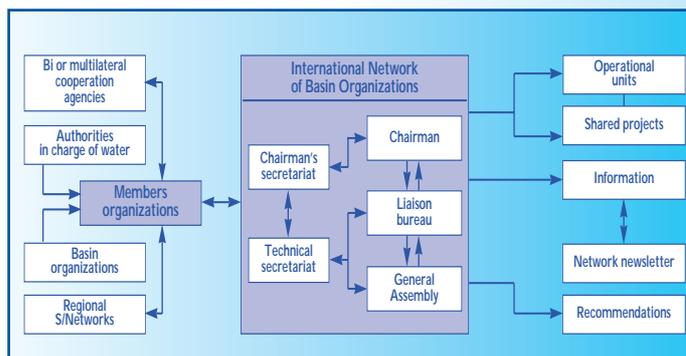
- costs of sojourn, logistics, field visits, translation and Chairmanship Secretariat are borne by the host-member(s), within the limit of an official representative per member-organization of the Network.

JOINT PROJECTS :

Implementation means to be negotiated by the Liaison Bureau with bi-and multilateral funding agencies, the interested governments and organizations with the help of an operational unit, when necessary, and of the Permanent Technical Secretariat.

ANNUAL SUBSCRIPTION :

The principle and the amount of an annual subscription paid by the member-organizations will be proposed to the second General Assembly.



DECLARATION OF MEMBERSHIP

Referring to the recommendations of the United Nations Conference on Environment and Development, Rio de Janeiro, June 1992 and the International Conference on Water and Environment, Dublin, January 1992, as well as the Constitutive Meeting in Aix-les-Bains, May 1994 and the General Assembly, held in Mexico, March 1996, the members of the International Network of Basin Organizations declare that they already apply or intend to apply, the following common modalities :

- organization, on the scale of large hydrographic basins, of an integrated water resources management aimed at preventing natural and dangerous hazards, and catastrophes and also at rationally and equitably meeting the various uses, to reach a sustainable economic development and to protect and restore the aquatic environment,

and to protect and restore the aquatic environment,

- implementation of financing systems -based on the «user-polluter-pays» principle and the «solidarity» concept- for multianual development, equipment and protection programmes,

- setting up partnership means to associate national Authorities and possibly competent international institutions together with local authorities, water users and concerned non-governmental organizations to the planning and management of river basin organizations ; and also developing the information capacities of these partners' representatives to enable them to fully assume the responsibilities and missions assigned to them within the framework of the basin policy.

PARTICIPATION IN INBO

The members of the International Network of Basin Organizations declare that they approve the arrangements stated in the **Charter of organization and operation** of the Network in accordance with the terms adopted by the General Assembly of March 1996, in Mexico. They agree -within the limits of their possibilities- to pursue the objectives of the Network and to participate in its joint projects and in addition, to keep the Network regularly informed on their activities in order to develop a wider cooperation between its members.

Furthermore, through this participation, each Network member agrees to promote the advantages of integrated river basin management compared to an individual approach, thus contributing to the development of this system over the World.

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Name of the Member-Organization :

.....

Name and Function of the Entitled Signatory :

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Made at on

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The Network Newsletter - N° 7 - 4th Quarter of 1998

WORLD WATER COUNCIL



THE "WORLD WATER VISION" PROJECT

The World Water Council, in liaison with FAO, UNEP, UNDP, UNESCO, UNICEF, WHO, WMO and the World Bank, has established a **World Commission on Water for the 21st Century**. The Commission, chaired by Dr. Ismail Serageldin who is Chairman of the Global Water Partnership and Vice-President of the World Bank, is composed of many outstanding thinkers and opinion leaders.

The main objective of the "World Water Vision" project is to propose a widely shared vision on the actions required for tackling water issues globally and regionally. The project will be characterized by a participatory approach with extensive consultation, innovative, "out-of-the-box" or futurist thinking and will emphasize com-

munication with groups outside the water sector. The "Vision" will be truly global, including both developed and developing regions, but with special attention given to the needs of countries and of the poor.

The interim results of the World Water Vision project will be discussed at the 1999 Stockholm Water Symposium and the final results will be presented at the 2nd World Water Forum and Ministerial Conference that will take place on March 17-22, in The Hague.

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THE WORLD BANK

THE ECONOMIC DEVELOPMENT INSTITUTE

The Economic Development Institute (EDI) of the World Bank is looking for partners in water resources management.

EDI (Water Policy Reform Program) joined INBO recently. The Program's objective is to help countries prepare and implement policy reforms leading to sustainable water resources management, through policy advisory and learning services. The Program started in 1994. It has reached over 4,000 participants in 40 countries, and has

been instrumental in advancing policy reforms.

The Program is looking forward to forming new partnerships with INBO members to work on areas of common interest. We are particularly interested in training materials and documentation useful to policy makers.

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LARGE DAMS

The International Commission on Large Dams (ICOLD) is composed of the National Committees of its 80 member countries. While the primary objective of the Commission has focused on the engineering of dams, in recent years ICOLD has also paid much attention to broader water resources aspects such as environmental issues and the question of shared rivers.

During the 64th Annual Meeting held in Santiago, Chi-

le, ICOLD organized a workshop on Shared Water Resources. ICOLD is trying to link up with other international organizations that have an interest in shared rivers in order to exchange information and experience.

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NBA: THE NIGER BASIN AUTHORITY

On 21st November 1980, Benin, Burkina Faso, Cameroon, Ivory Coast, Guinea, Mali, Niger, Nigeria and Chad decided to transform the NIGER RIVER COMMISSION, created in 1964, into the NIGER BASIN AUTHORITY (NBA), in order to:

- harmonize and coordinate national policies relating to the development of water resources in the basin;

- participate in the planning of the basin's development through the preparation of an integrated development plan;

- promote and participate in the design, utilization and maintenance of hydraulic works of common interest.

Within the framework of international assistance, NBA has completed many studies which have led to a relevant knowledge of the water resources and the implementation of development projects: study of the anomalies in the flood regime of the river, hydrological monographs on the Niger river, mathematical model of the river, water management study of the upper and middle river, basic studies for agricultural development in the Niger basin.

NBA has also set up a Development Fund, a Hydrological Forecasting System in the Niger river basin (HYDRONIGER), a modern Documentation Center, navigability regulations and a legal framework for its interventions.

In the field of water resources utilization, many large dams have been built, namely Lagdo in Cameroon, Dabola in Guinea, Sotuba, Markala and Selingue in Mali, Kanji, Jebba and Shiroro in Nigeria. There are also several hundreds of small dams and more than 100,000 wells and bore holes.

However, since 1973, the Niger river has been facing problems of drought, desertification and floating plants which threaten its very existence. So, nowadays, all the efforts are oriented towards safeguarding the river with assistance from donor agencies. The donor agencies that have so far associated themselves with NBA include UNDP, FAO, WMO, USAID, JALDA, GEF, FAC.

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WMO: REGIONAL HYDRO-METEOROLOGICAL INFORMATION SYSTEM FOR THE CONGO RIVER BASIN

The World Meteorological Organization, with funding from the European Union, has initiated a project for the establishment of a Regional Hydrological Meteorological and Climatological Information System for the Congo River basin.

This system, which is complementary to the Regional Environmental Information Management Program of the World Bank, is aimed at facilitating and optimizing access to and the use of reliable, near real-time data and information. These data are not presently available owing to the limited resources allocated by the countries in the Congo Basin to the functioning of their national hydrological and meteorological services. The underlying idea of the project is to enhance the level of the outputs of the national services, to meet the needs of the users of hydrometeorological information in order to generate resources for their operation, from the state budget, private sector, research institutions, etc.

The main objectives of the project are the:

- Establishment of a regional system for the collection, transmission, management and storage of data (rehabilitation of selected existing stations, establishment of a regional computer network based on the Internet and WMO's Global Telecommunication System, development of national and regional data bases).
- Development of the capabilities of the national hydrological and meteorological services to contribute with information and products to the sustainable development of the basin.
- Promotion of data exchange and of scientific and technical cooperation between hydrological and meteorological services at national and regional levels.

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GUINEA

BIODIVERSITY - GULF OF GUINEA PROJECT

The Gulf of Guinea Large Marine Ecosystem (GOGLME) is an ecosystem under extreme stress, with numerous in-country as well as transboundary activities impacting the quality of the ecosystem:

- The condition of fish stocks (from local and distant water fisheries) that have food security and economic implications is worsening.
- The mangrove swamps which occur along the coast are vital to fisheries productivity, stocks stabilization and serve as active filters to pollutants as well as natural buffers against storms and ocean surges. However, they are rapidly being destroyed due to overcutting and pollution.
- The urbanization of the Gulf of Guinea results in inputs of largely untreated sewage impacting health, tourism and fisheries. It also causes physical destruction of fish habitats.
- Likewise, untreated or partially treated industrial waste

contaminates marine waters and threatens human life.

- Uncontrolled use of pesticides also brings harmful effects to the coastal environment.
- Spills from petroleum production pose threats to resources of the region.

Since 1994, with US\$ 5.4 million funding from the Global Environmental Facility (GEF)-UNDP and the U.S. National Oceanographic and Atmospheric Administration (NOAA), UNIDO has been managing the project "Water pollution control and biodiversity conservation in the Gulf of Guinea Large Marine Ecosystem". The overall objectives are to:

- strengthen regional institutional capacities to prevent and remedy pollution of the GOGLME and associated degradation of vital habitats;
- develop an integrated information management and decision-making support system for environmental management;

- establish a comprehensive program for the monitoring and assessment of the health of the GOGLME;
- prevent and control land-based sources of industrial and urban pollution;
- develop national and regional strategies and policies for long-term management and protection of the GOGLME.

In the first phase of the work, which will be completed in early 1999, UNIDO has been assisting six countries from the region (Benin, Cameroon, Ivory Coast, Ghana, Nigeria and Togo).

The first meeting of the Ministerial Committee was held in July 1998 and was a success. Two major results were achieved:

- strategies were developed to mobilize at least US\$ 20 million for the second phase of the project;
- a declaration (the Accra Declaration) was developed expressing the Ministers'

strong support for the project and UNIDO's role as an Executing Agency

The project will be expanded to cover all sixteen countries bordering the GOGLME, from Guinea Bissau to Angola.

Both the U.S. (through NOAA) and the U.K. have committed personnel and other resources to the first phase of this project in coordination with UNIDO.

UNIDO would welcome the involvement of any other country wishing to participate in this project.

UNIDO is also planning to be involved in a similar project for the assessment of the ecosystem of the Niger Delta, with Royal Dutch Shell Corporation and British Petroleum.

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ASIA

INDONESIA

WATER RESOURCES DEVELOPMENT AND MANAGEMENT IN THE BRANTAS RIVER BASIN

The Brantas river, the main river in East Java province, Indonesia, has a catchment area of 12,000 sq.km. and a total length of 320 km. The average rainfall in the basin reaches 2,000 mm/year with approx. 85% in the rainy season.

Integrated water resources development in the Brantas river basin has been carried out since 1961 under a principle of "One River, One Plan, One Management", which means: a river basin shall be developed and managed in accordance with one comprehensive water resources development and management plan, under the responsibility of one line organization in principle.

At present, there are 4 yearly reservoirs, 3 daily reservoirs, as well as 4 dams and many other water resources facilities. All the infrastructures were built based on four Master Plans reviewed approx. every 12 years.

The main objective of water resources management is to contribute to the sustainable

development of society by distributing water in time and in place as required. The tasks consist of:

- 1 watershed management conservation,
- 2 flood control,
- 3 water quantity control,
- 4 water quality control, and
- 5 river environmental protection.

All the costs required for the previous development and management were borne by the government.

The implementing agency for water resources management is Jasa Tirta Public Corporation, established in 1990. This public corporation provides services to all stakeholders. In May 1997, the International Certification Services issued an ISO-9001 certificate for Jasa Tirta Public Corporation in planning and operation & maintenance of water resources infrastructures in the Brantas river basin. Since the establishment of Jasa Tirta Public Corporation, the opera-



Master Station of Flood Forecasting and Warning System for the Brantas River

tion and maintenance costs of water resources infrastructures have been borne by some of the beneficiaries, i.e. The State Electricity Company, The Drinking Water Company and Industries.

The other beneficiaries, such as farmers and others must also start to contribute. In the future all the costs are planned to be recovered, based on the principles of full

cost recovery using "beneficiaries pay", "polluters pay" and "service received" principles.

Hopefully, the above water resources management will serve as an example to be adopted by other river basins in Indonesia.

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CENTRAL ASIA

UZBEKISTAN

A MODEL OF THE FLOW RATES IN AMU-DARYA RIVER

At present, the problem of the Aral Sea is an extremely urgent one for Central Asian countries. The main water sources flowing into the Aral Sea are the Amu-Darya and Syr-Darya rivers with their water being extensively used in the economy. The water level in the Aral sea has fallen by more than 20 meters during the last ten years. A five-day flow forecast of the Amu-Darya river is now required for the rational use and effective management of the water resources for routine operational purposes.

Much research has already been done on the modeling of the flow rates for the Amu-Darya river. However, the resul-

ting models for hydrological forecasting do not have the required accuracy. For the purposes of hydrological forecasting, a specific model of river flow with a deformed channel has been used based on a non-linear relationship between water discharge and hydraulic parameters of the channel.

The model takes into account the specific features of the Amu-Darya and the relationship between time, flood peak, water discharges and also the deformational instability of the river channel.

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THE ARAL SEA BASIN

The Scientific Information Center (SIC) of the Interstate Coordination Water Commission (ICWC) for the Aral Sea Basin was established on December 5, 1992.

Located in Tashkent (Uzbekistan), SIC carries out scientific investigations for Central Asian States in order to improve environmental and water management in the basin: common water management policy, common program for saving and increasing water resources in the Amu-Darya and Syr-Darya river basins, water transfers from other basins into the Aral Sea, environmental sanitation of the

region and how to overcome the consequences of the Aral Sea deterioration and of water resources depletion, monitoring systems for both river basins.

In addition, SIC ICWC is responsible for: cooperation on the use of water saving technologies and on the improvement of irrigation systems, publishing a periodical to inform regional water organizations, and for the coordination of international projects on regional water management in Central Asian States.

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THE ASIAN DEVELOPMENT BANK

The Asian Development Bank has just completed a documentary video on "Asia's Water Crisis: The struggle within each drop". It profiles Sri Lanka, the Philippines and the People's Republic of China, and looks towards solutions to Asia's growing water crisis.

Should you be interested by this video, please contact ADB Information Office:
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NORTH AMERICA

RIVER BASIN MANAGEMENT IN QUEBEC

For some years now, Quebec organizations from various sectors have shown a sustained interest in water management organized at the river basin level. This ecosystem approach has been presented and discussed at major environmental events such as the Water management symposium organized by the Quebec government, the Environment industry conference and the Forum on water management at the river basin level.

More and more, the Ministry of Environment and Fauna (MEF) is encouraging and monitoring integrated water management initiatives. It has identified some 90 non governmental organizations involved in one-time measures or inte-

grated management of their respective river basins.

To promote exchanges between these organizations, MEF and its partners organized a one-day meeting on November 21, 1998, in the "Biosphere" building in Montreal.

The Chaudière River Basin Committee (COBARIC) is pursuing its integrated management pilot project in the Chaudière river basin. This project was set up by MEF, and the lion's share is financed by the Quebec government, which seeks to evaluate the usefulness, relevance and applicability of various management tools for developing a Quebec-wide approach to integrated water management through river basins.

COBARIC recently hired two land-use planning professionals to prepare a management master plan for the Chaudière river basin. A detailed status report on the water resource, a critical element in this master plan, should be completed before 1998 is out.

The COBARIC board of directors has also approved the organization of three workshops: one on harmonizing the master plan with existing land-use management tools; a second on the thorny question of financing its implementation, and a third on identifying and validating the data required to carry it out. These workshops will be run by members of COBARIC's board of directors and are intended for resource

persons known for their expertise in the field.

This pilot project, which began in November 1997, is expected to run until November 1999, culminating in recommendations to the Minister of the Environment and Wildlife.

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LATIN AMERICA

ECLAC

WORKSHOP OF MANAGERS OF BASIN ORGANIZATIONS

The United Nations Economic Commission for Latin America and the Caribbean (ECLAC) has just published the proceedings of the workshop, organized in Santiago in Chile, from 11 to 13 December 1997, by its Environment and Development Division with the support of the French Cooperation. It gathered the managers of basin organizations from Latin America and the Caribbean.

The objective of this meeting was to analyze the creation and operation of basin organizations in terms of legal, institutional and financial is-

ssues in order to facilitate their integration in the region by preparing technical specifications and defining procedures for the setting-up and operation of such organizations.

Specialists from Argentina, Bolivia, Brazil, Colombia, Costa Rica, Cuba, Spain, Guatemala, Italy, Mexico, Paraguay, Peru, the Dominican Republic, Uruguay, Venezuela and France participated in this workshop.

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WMO

PROJECT ON AN INFORMATION SYSTEM FOR THE LA PLATA BASIN

The World Meteorological Organization (WMO) is cooperating with the Intergovernmental Coordinating Committee (CIC) of the La Plata Basin (Argentina, Brazil, Bolivia, Paraguay and Uruguay) and the Inter-American Development Bank on the establishment of an information system for water quality and hydrological warning.

An in-depth analysis will be made of the need for specific data to allow an assessment of the project's feasibility. The project will be based on a report prepared by consultants from the region, which in-

cludes over 200 agencies, institutions, universities and foundations that are active in some water sector. A meeting of the technical counterparts dealing with water resources from the five countries will be convened in the near future.

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ARGENTINA

A NEW INSTITUTIONAL FRAMEWORK FOR WATER RESOURCES MANAGEMENT

With the passing of the Decree N° 146/98, the water resources sector was transferred to the **UNDER-SECRETARIAT FOR WATER RESOURCES** which is subordinated to the **SECRETARIAT FOR NATURAL RESOURCES AND SUSTAINABLE DEVELOPMENT**, and headed by Mrs. Maria Julia ALSOGARAY.

The Under-secretariat, headed by Mr. Ademar Antonio VACHINO, is still composed of two national directorates:

- **The National Directorate for Water Policies**
- **The National Directorate for Water Resources Management** which is responsible for water development and sewerage.

In the Secretariat for Natural Resources and Sustainable Development, the **National Institute for Water and the Environment (INA)** (ex-INCyTH), is in charge of undertaking studies, research and the provision of specialized services in the fields of planning, monitoring and preserving water and the environment and is also responsible for dissemination and awareness-raising. Mr. Mario de Marco NAON remains President.

The National Authority for Treatment Plants (ENOHSA) ex-COFAPyS, is organizing and managing the decentralized implementation and planning of urban services.

It is also responsible for ensuring the continuity of the projects concluded between the State and international donors and development agencies. An example of this is the Program of Social Aid for Drinking Water Supply and Sanitation (PASPAYs), which aims at meeting the basic needs of small communities. Mr. Jorge RAIS is in charge.

In addition, the Secretariat is entrusted with the management of the contract for delegating the public drinking water and sanitation service to the "AGUAS ARGENTINAS" company.

The Secretariat is a coordinating member of the Executive Committee for the Project of Environmental Management

and Administration of the Matanza-Riachuelo River Basin.

Finally, the following organizations have been integrated into the Secretariat: the Regional Commission of the Rio Bermejo (COREBE), the Regional Organization for the Security of Dams (ORSEP) and the national representations of the Inter-judicial Authority for the Limay, Neuquén and Negro River Basins (AIC), and the Inter-judicial Committee of the Rio Colorado (COIRCO).

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MATANZA RIACHUELO'S EXECUTIVE COMMITTEE

The Executive Committee for the Environmental Management Plan (PGA) for the Matanza Riachuelo river basin (Buenos Aires Province) was created in 1996 within the Secretariat for Natural Resources and Sustainable Development of the Argentinean Republic.

The essential difference between this organization and the previous ones at local level is the small number of its members who are technical

specialists whose mission is the effective implementation of current policies instead of the adoption of new ones. Thus, the Matanza Riachuelo's Executive Committee is first an "institutional accelerating force".

Over the last two years (with a funding from the Inter-American Development Bank since 1997), the Committee has implemented activities that had been delayed, such as the

cleaning of river beds and banks to facilitate navigation and water flow, the improvement of water quality, the building of works for water flow regulation and drainage in order to prevent flooding, the development of land use and an environmental impact assessment for new planned projects, among other things.

In addition to the environmental rehabilitation of the basin, the Committee has also

undertaken an environmental education program and one for the prevention of industrial pollution in order to maintain the quality of the environment when the sanitation activities which are under way are completed.

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ECUADOR

COOPERATION BETWEEN ECUADOR AND SWITZERLAND: PRECUPA PROJECT: PREVENTION OF NATURAL DISASTERS IN PAUTE RIVER BASIN

ACTIVITIES AND RESULTS

Due to the socioeconomic impact of natural disasters in Ecuador, the CSS (Swiss Organization for Emergency Relief) and the Ecuadorian institutions developed a pilot project, from 1994 to 1998, for prevention in the upper and middle parts of the Paute river basin. This basin has many areas with unstable ground as discovered with the disaster caused by "La Josefina" phenomenon in March 1993, a disaster that also emphasized the lack of preparedness to face such events.

The PRECUPA project (Prevention-Ecuador-Basin-Paute) covers an area of 3,700 km² with a population of 700,000 inhabitants. The Paute river basin also includes hydropower installations that supply 60% of energy to the country. The PRECUPA project dealt with several fields of activity, including:

- **Topography/geodesy:** the mapping of the area was completed with 552 aerial photographs of the whole basin and satellite imagery. Both techniques also enable regional mapping, the identification of seismological pa-

rameters, unstable ground and land uses.

Geodetic networks with 120 sensors were also installed in 20 areas in order to identify the most unstable areas.

- **Hydrometeorology:** the inventory of the hydrological and meteorological stations in the Paute river basin enabled the setting-up of a Hydrometeorological Network (RHUP), thanks to inter-institutional cooperation.

Owing to their transmission in real time by way of VHF relay stations, warning signals may be sent when the amounts recorded exceed de-

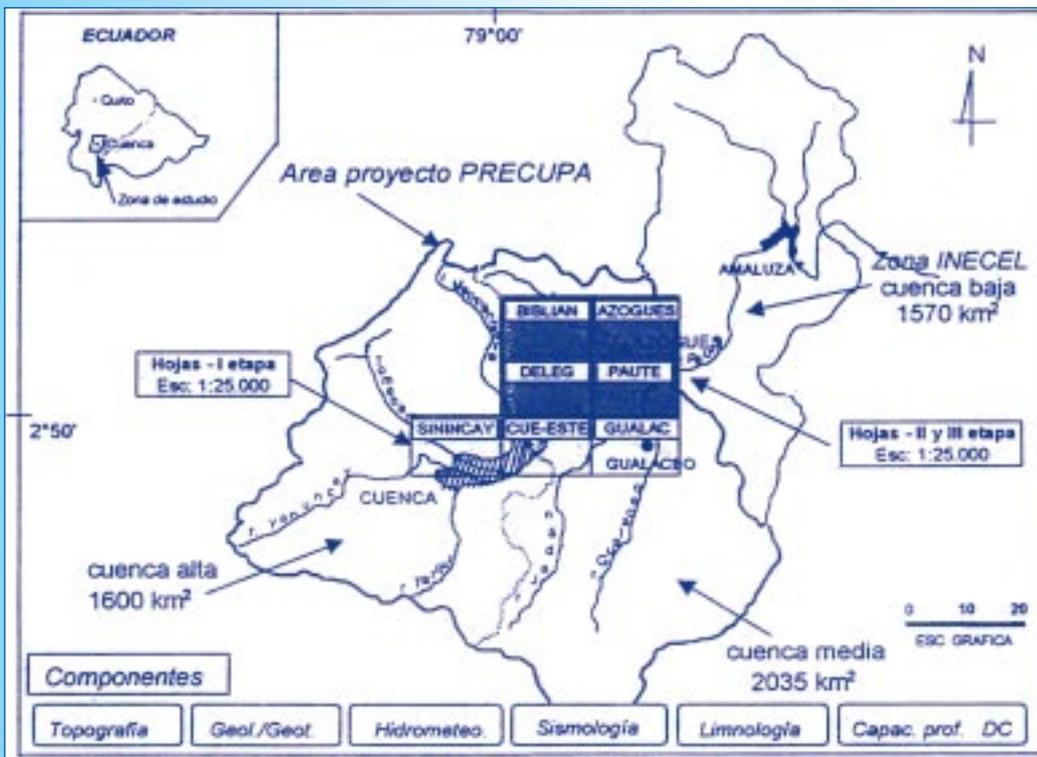
finied thresholds. The personnel were trained for the use of these techniques.

The non-stop acquisition of data on rainfall and water levels will enable appropriate management and use of the resources in the basin and the calibration of hydrological models adapted to the short response times of the area. These studies were optimized with the University of Cuenca that is drafting maps of flood-prone areas. RHUP operation and maintenance will be ensured in the future thanks to an agreement signed by the National Institute of Meteorology and Hydrology (INAMHI) and the Water Supply and Sanitation Company (ETAPA) under the supervision of CSS.

- The **limnological** monitoring of lagoons and watercourses has been carried out by ETAPA, pollutants being identified as well as their origin.

Results are **continuously used** by all the institutions involved. An Agreement was signed with CONADE at national level. A Commission for Environmental Management and the Prevention of Natural Disasters was created at regional and local levels. Finally, continuity is ensured thanks to the institutions involved. The raising of awareness as regards "natural hazards" took place and that knowledge and the respect for nature are essential for our future safety.

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ECUADORIAN INTEGRATED WATER RESOURCES MANAGEMENT STRATEGY

The Ecuadorian Integrated Water Resources Management Strategy was formulated by the National Water Resources Council (CNRH) with the participation of various public and private organizations.

This strategy is based on a general analytical scheme and aims to propose orientations for water resources management. This implies the need for complex changes in legal and institutional aspects, and even more important is the need for changes in mentalities. Discussions emphasized that all parties were well aware of the problems encountered in wa-

ter resources management but a consensus was not reached on the urgency of these changes.

The new role of the State as a regulator that decentralizes the management of water resources and encourages the active participation of users is the first element of the strategy.

The strategy also proposes the establishment of water resources management at the level of the river basins, which reconciles the different interests in order to achieve an effective management of the multiple uses of water and na-

tural resources in terms of quantity, quality and time.

The development of mechanisms for the involvement of the private sector and the self-financing of hydraulic infrastructures for drinking water supply, irrigation and hydropower constitutes the third element of the strategy.

Other significant aspects of the strategy are water pollution control, using monitoring networks, and the need to take measures for wastewater treatment and the rehabilitation of surface and ground water resources.

Finally, it is necessary to include flood control and public works safety.

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PERU

DEFINING FLOOD PROTECTION AREAS

Peru is divided into three catchment areas: the Pacific, the Atlantic and the Lake Titicaca. The Pacific drainage area is composed of 53 main watercourses that spring from the Andean Cordillera between 4,000 and 6,000 meters above sea level and run down steep slopes to flow out into the Ocean.

At the beginning of 1997, in order to prevent the effect of the El Niño phenomenon, the Water and Soil Directorate of INRENA, in collaboration with Technical Irrigation Departments, started the definition of protection areas on the main watercourses of the Pacific catchment area. This project was financed by the Institutional Reinforcement Fund (FRI). It is in conformity with the Wa-

ter Law which states that the area situated just above the banks of watercourses, rivers, lagoons, ponds, lakes, reservoirs and others, namely the protection area, must stay unoccupied. The Water Authority is in charge of defining the width of these areas on a case by case basis. The use of these areas for agricultural purposes or for human settlements is strictly forbidden.

These areas have been defined for 33 out of the 53 main watercourses of the Peruvian Pacific drainage basin that are located in the 21 largest irrigated areas of the country. At present, many area definitions are completed and others are in the final stage. This will enable the definition of about 1,400 km of protection areas.

The method used to define the width of this area has been the calculation of maximum flood waves. Maps were developed, using GIS with ARC/INFO and ARC/VIEW software, in order to simulate new models and thus reuse the information in time and space.

The information obtained is thus of the utmost importance

and will be used by many organizations. The usefulness of this information was confirmed as regards the El Niño phenomenon as the extent of the damage was not as great as it may otherwise have been. It is also used for the planning and design of reconstruction work under way since El Niño struck.

5TH MEETING OF "REDNAMAC"

The National River Basin Management Network (REDNAMAC), created in 1993 by the Ministerial Decree, as an organization for the coordination, promotion and dissemination of activities related to river basin management, convened its "5th National Meeting" in Tacna, from 5 to 7 November 1998.

This meeting enabled:

- The identification of success and progress in river basin management activities;

- The comparison of experiments carried out, using modern technologies, in order to extend their use;
- The evaluation, analysis, expansion and dissemination of positive experiments;
- The promotion of the institutional capacity building of REDNAMAC and of its regional bodies.

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BOLIVIA

AWARENESS CAMPAIGN ON THE MANAGEMENT OF NATURAL RESOURCES

An interinstitutional campaign on the Environment and the Management of the Region's Natural Resources took place in Cochabamba, Bolivia from 27 to 29 August 1998, through the impetus given by PROMIC and with the support of the Prefecture of the Cochabamba district.

The people were able to consult information boards, material for popularization and environmental education, children could attend puppet shows and teenagers could see videos, on topics related to the environment.

A round table was organized by PROMIC and the District's Education Department on the topic of "Environmental Education in the Region".

Promotion of the campaign in the civil society and institutions gave the event greater impact, especially among teenagers and children from several of the academic establishments who gathered at the Main Square above all to collect information and carry out research.

The campaign also allowed 70 posters to be displayed in public, which had previously been selected from the 300 entries in the "First Poster Competition on the Environment

and the Integrated River Basin Management in the Region", organized by PROMIC for secondary school students from six towns in Cochabamba Lower and Central Valleys.

Sixty academic establishments therefore received folders prepared for the students which contained all the necessary information as well as educational material which can be used in libraries.

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A view of Lake Titicaca

REBOLMIC: SEMINAR ON "INTEGRATED RIVER BASIN MANAGEMENT"

A seminar on "Integrated River Basin Management" was held in Cochachamba, from 27 to 29 May 1998, in PROMIC's auditorium. It was organized by the Binational Authority of Lake Titicaca (ALT) and intended for representatives from programs and projects of the Bolivian Network for Integrated River Basin Management (REBOLMIC).

The discussions were opened by Messrs. Amilcare Gaita, ALT President, Roberto Méndez, Director of PROMIC and Walter Laguna, Coordinator of the seminar.

It enabled speeches from several national and international experts on the progress made in various projects for the management and control of river basins as well as an in-

teresting visit to the PROMIC Program's integrated management facilities.

The work in topical workshops led to detailed conclusions relating to the process for the formulation of a new Water Law in Bolivia.

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MEXICO

FRENCH AND MEXICAN EXPERIENCE IN WATER MANAGEMENT

On April 16th and 17th, 1998, a workshop on the Mexican and French experiences in water management took place. Executives from the National Water Commission who either took a masters in Engineering and Water Management in France from September 1994 to October 1995, or attended a short course in September and October 1994, participated.

The objective of the workshop was to do a comparative analysis of the water management in both countries, in order to point out similarities and be able to use the French experience in the process of creating Basin Councils in Mexico.

In France	In Mexico
<ul style="list-style-type: none"> • River basin management • Main problems related to water pollution. • Financial resources management at basin level. • Planning for each large hydrographic basin. • Six basin committees. • The basin committee is divided in 3, as follows: <ul style="list-style-type: none"> - 1/3 governmental. - 1/3 users. - 1/3 local communities. 	<ul style="list-style-type: none"> • River basin management. • Main problems related to availability and distribution of water. • Financial resources administration at central level. • Planning at national and regional levels. • Creation of basin councils. • The basin council integration is as follows: <ul style="list-style-type: none"> - CNA (Presidency) - Governors involved. - Users' representatives.

As a result of the workshop, the following conclusions were reached:

- The natural unit for water management is the hydrological basin.
- In a basic sense, the water schemes used in Mexico and France are mixed dialogue and coordination forums. This is the main contact point.
- The fundamental difference between the French and Mexican processes is the financial autonomy that the French basin committees have.
- Water management in Mexico should rely on a specific model.

- In Mexico, the planning process must rely on the society participation in the definition and execution of the hydrological programs per basin.
- The idea is that the participation of all the parties involved in the water management process is the only way to ensure the sustainable development of the resource.

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AMENDMENTS TO REGULATIONS WITH REGARD TO BASIN COUNCILS

The presidency of the Basin Council went from the former Ministry of Agriculture and Water Resources to the Director General of the National Water Commission (CNA).

The technical secretariat is now entrusted to a person chosen by the General Director himself, who will presumably be the corresponding Regional Director

The State Government members of the Council, participate and are entitled to one vote, as stated by the former regulations.

The representatives of the Federal Government, who were defined as members of the Council in previous regulations, shall now only partici-

te as guests without any right to vote.

The number of user members in the Council is no longer limited because a representative will be nominated for each kind of the existing uses of water.

The councils are in charge of promoting the participation of all those involved in water resources planning in the basin.

Mexico is also looking for a more efficient operation of Basin Councils.

Additionally, this restructuring highlights the importance of the active participation of basin users in water management, through the reinforcement and increase of their representation in the Basin Councils.

PARTICIPATION OF USERS IN THE BASIN COUNCILS

In accordance with the National Water Law and its regulations, the users participate in the Basin Councils.

However, the fact is that the process of organizing users which is currently under way in Mexico is a long and difficult task. Another aspect barely explored is their legitimate and representative participation in decision making.

The expected participation of the users in the process of creating Basin Councils in Mexico is a delicate matter due to the institutional, social and political implications. This implies the training of the users.

The process whereby the water users take on their new role in the Basin Councils is variable and most likely slow. Therefore, the National Water Commission strongly supports

the process and gives it time to mature in order to avoid that users be disappointed. This would mean taking a step back in the solving of the water problems.

The current user organization strategy is oriented towards their participation on two parallel and complementary levels:

- the solution of conflicts arising among them;
- their participation in the actions or programs which directly or indirectly benefit them.

Mexico is committed to having at least 13 Basin Councils or Commissions installed before year 2000. This means having a little over 200 user committees organized, which shall integrate over 100,000 water users.

SAN JUAN RIVER BASIN COMMISSION

In recent years, the San Juan River (Pánuco) basin has experienced a fast demographic and economic growth. Unfortunately, this has had consequences, surface and ground water sources are insufficient in relation to the current needs, and a severe pollution of the resource has occurred.

The San Juan River Basin Commission was created on August 1st, 1997 in order to:

- promote better use and exploitation of the water resources of the basin;
- formulate programs directed towards the cleaning of surface water, as well as promoting treatment of urban and industrial wastewater;
- restore and preserve water quality; the adequate use of water resources and of hydraulic infrastructures.

In October 1997, the user committees (Agricultural, Public, Urban, Services and Industrial sectors) were formally established. They have met 26 times, with the aim of carrying out an assessment of the sector and establishing priorities.

Based on the results of the above mentioned meetings, the first Basin Commission working session took place on January 29th 1998.

LERMA-CHAPALA BASIN SANITATION PROGRAM

The Lerma - Chapala basin is one of the zones with the greatest urban, agricultural and industrial development in Mexico. This concentration has caused, among other problems, severe water pollution.

Until 1989, there were only 15 municipal waste water treatment plants, insufficient for treating the 16.6 m³/s of wastewater discharged in the basin.

A sanitation strategy was developed when the Basin Council was established in 1989.

45 waste water treatment plants were built and 6 are under way for the most significant sources of pollution. Once these are finished, a combined capacity of 9.56 m³/s will be reached. 43 additional building projects are ready for invitations to bid and their construction.

A third phase was intended to cover the sanitation requirements of all the cities with more than 10,000 inhabitants with the construction of 50 plants for treating 1.8m³/s of wastewater.

"Support committees" have been created in each basin to ensure the best performance of the existing treatment infrastructures; search for low interest credits in order to accelerate the construction and adequately program the necessary plants; analyze low price treatment alternatives relating to construction and operation.

STRENGTHENING THE VALLEY OF MEXICO BASIN COUNCIL

The Basin Council was created in August of 1995 as an organization responsible for coordinating activities and reaching consensus between the National Water Commission (CNA), other federal, state and municipal agencies and water user representatives for the organization of better water management and conservation in the river basins of Mexico Valley and Tula. The Basin Council members represent 7 ministers, 5 state governors and 6 water user organizations under the chairmanship of the Ministry for the Environment, Natural Resources and Fisheries. CNA is assuming the technical secretariat.

Since 1995, the CNA's Regional Office for the Valley of Mexico (Gravamex) has carried out a series of activities to consolidate the Basin Council function.

To initiate governmental coordination, in May 1997, a Technical Working Group (GTT) was formed with specialists representing the institutions involved in the Basin Council.

The Technical Work Group includes 4 technical commissions covering:

- Development,
- Sanitation,
- Efficient Use of Water ,
- Basin Management and Conservation.

Gravamex has just finished a regional assessment which is now being revised by the rest of the Technical Group. This document is to be the basis of the basin master plan to be developed in 1998 by the council with the participation of the water users.

All types of water users (farmers, industrialists, water suppliers and sanitation utilities, fish farmers and service providers of the region) are represented in the Users' Assembly.

Thus, using the principle of a shared responsibility, the best water management can be achieved in the Valleys of Mexico and Rio Tula.

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Regional Manager
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National Water Commission

BALSAS RIVER BASIN COUNCIL

The Balsas River Basin Council was created as a body that formulates the planning of the whole basin while integrating the work programs prepared by the Basin Commissions covering the 4 main tributaries.

Each Commission is designed as a mixed working group within the Council, in charge of the hydraulic programming of a tributary sub-basin and of the completion of objectives and specific strategies for the handling of specific water-related problems that occur in this sub-basin.

These Commissions, created within basin councils, give the opportunity for accurately representing the requirements of particular sub-basins, for achieving appropriate global planning, solving the local difficulties for the more effective use of water to meet the requirements of the different water users.

MANAGING GROUNDWATER IN THE QUERETARO VALLEY

On February 20th, 1998, in order to solve the problem of the aquifer overexploitation, the Lerma-Chapala Basin Council created the Ground Water Technical Committee (COTAS) of the Queretaro Valley.

It is a participation and coordination forum, essentially integrated by ground water users.

Its principal objective is to help in the formulation and execution of programs and actions in order to stabilize, restore and preserve the water in the Queretaro Valley, and achieve better management of this water, in quality and in quantity.

THE PACADIRH

An Action Plan for integrated water resources management in Central America

While Central America (488.000 Km² with 32,2 million inhabitants) is generally well provided with surface and ground waters, all countries encounter low development rates, demands are not sufficiently met (45% of the inhabitants of the region are deprived of services for drinking water supply and sanitation), as well as high pollution and centralized and inefficient management of the water resources sector. This situation is also worsened by the lack of available information.

Low rainfall causes temporary droughts, or on the contrary too much rainfall leads to floods.

The region must combine its efforts to **implement the integrated management, development and conservation of water resources**, in accordance with the objectives of sustainable development.

In order to meet an increase in water demand, in terms of quantity and quality, and therefore in environmental costs, the countries will have to adapt

their laws, further a better use of the resources, externalize their costs, promote the use of clean technologies...

In July 1997, during the XIXth Ordinary Meeting of the Presidents of Central American States, it was decided that the Commission on Environment and Development for Central America (CCAD) should formulate an Action Plan for Integrated Water Resources Management in Central America: the **PACADIRH**.

The PACADIRH will thus be a set of strategies and actions that aims to orientate and standardize the joint development of water resources in the region, in accordance with the principles of sustainable development. To achieve this objective, the CCAD is assisted by the General Secretariat of the Economic Integration System (SG-SICA), the Regional Committee for Water Resources (CRRH), the Coordinating Committee of Water Suppliers for Central America, Panama and the Dominican Republic (CAPRE), and politically supported by the Central American Parliament (PARLACEN) and financially aided by the Government of Denmark (DANIDA).

The PACADIRH takes into account the basic principles is-

sued from international conferences: Dublin (1992), Rio de Janeiro (UNCED, 1992) and Paris (1998), as well as those defined by the Central American Alliance for Sustainable Development (ALIDES) and the Central American Charter for Water.

Process for its formulation

The process has already started with the organization of national workshops in each country of Central America, from June to October 1998, in order to agree on solutions, as regards technical and political aspects, to the problems encountered in the sector, including those related to bi- or tri-national river basins.

The Regional Conference of Managua, Nicaragua, which will be based on national experiences, will be held from 9 to 11 February 1999. Its aim is to reach a compromise on regional actions and on the organization and financing necessary for their implementation, the support of international cooperation for projects regarding the regional development and the participation of the Central American countries in the assessment of global water resources.

COSTA RICA

The PACADIRH defines 17 water-related actions to be carried out in Central American countries.

The PACADIRH Organization

The expected success of the Regional Action Plan will depend, to a large extent, on the organization chosen for its implementation, the team in charge, the time needed and on the available financial resources.

A regional organization will ensure a liaison with the Presidents' Summit and will be in charge of orienting and coordinating the Plan with each government. It will be entrusted with the implementation of the Regional Action Plan, the representation of Central America to international organizations, and with the follow-up of regional agreements. This organization will also be in charge of seeking the technical and financial assistance required for finalizing the actions proposed.

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COLOMBIA

REHABILITATION OF NIMA RIVER BASIN: UNITY IS STRENGTH!

The Nima River Basin is located on the foot-hills of the Central Cordillera, in the Cauca valley district, and includes the Palmira township.

In 1980, Palmira town went without water for six days due to the mud slides that were occurring every year, stopping electricity production, blocking irrigation canals and clogging the water intakes, because of the inappropriate use and management of the soil by farmers and foresters.

It became necessary to formulate a strategy in order to mitigate the degradation pro-

cess and limit negative impacts on natural resources. Cooperation between the interested parties became a priority to mobilize the financial resources necessary for rehabilitation. The following measures were taken:

- In 1982, The Committee for the Protection and Rehabilitation of Nima River Basin (PROMINA) was created with the financial support of CORPOCUENCAS, Palmira City Hall, the Public Water Supply Company of Palmira and of the Autonomous Regional Corporation of Cauca

Valley, providing 10 million Colombian pesos per year (US\$ 7,000).

- Smurfit Carton of Colombia purchased 1,360 hectares, amounting to 2,500 million Colombian pesos (US\$ 1,600,000), to plant "producing-protecting" forests.
- A Nima's Users Association (ASURNIMA) was created in 1993 regrouping farmers using the Nima's water to irrigate crops (170 users/6,900 ha) and mobilized about 50 million Colombian pesos (US\$ 33,500) per year to implement environmental projects.

Much remains to be done, but it has been proven that "Unity is strength" and that activities could be implemented in less than 16 years, according to an Integrated Management Plan for the River Basin Natural Resources, which is a tool providing guidelines for all the parties involved, when a common will does exist.

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RIVER BASINS IN COLOMBIA

Colombia has plenty of water resources and many river basins and springs that have not been adequately managed up to now. Statistics of the organizations concerned are rather disturbing and the Ministry for the Environment presented a report to the Congress in July 1996 on this issue.

In order to deal with this situation, the National Water Center - CENAGUA, the Pan-American Health Organization, OPS/WHO, and the Ministry of Development jointly organized an International seminar on "**Management, Rehabilitation and Sustainability of River Basins**" in April 1998. This seminar emphasized the need to preserve river basins and mitigate the impact of recurrent phenomena such as the "Pacífico". It led to the search for integrated solutions.

Among the most significant recommendations of this seminar are the following:

- The National Government, through the Ministries concerned, should ensure that legislation is clear and simple and that it facilitates dialogue between the different parties involved in the regions. It should also establish fiscal and financial incentives to develop cooperation and dialogue between the public and private parties concerned.
- It was recommended that the Ministry for the Environment should further the setting-up of River Basin Organizations in charge of the management of shared basins in order to overcome institutional difficulties encountered by some environmental authorities.

- The Autonomous Regional Corporations should study, analyze and disseminate the legislation in force and actively work on the education and awareness raising of the community. They should also focus on a reference unity for the development of programs addressing the implementation of regulations in force.

- It was recommended to set up a national network for technical cooperation dealing with river basin management, the supply of information on on-going activities and on their possibly inadequate management, assistance for companies and municipalities in the formulation and implementation of management plans and their information on the achievements from results obtained by national and international technical cooperation.
- Human resources development is needed for the management of water and natural resources.

Finally, the participants decided that the Ministry for the Environment should deny any environmental authorization to the MINEROS EL DORADO company for the exploitation of gold in the Rio Saldaña in Atacó, due to the environmental and economic impact on this tributary, the largest of the Rio Magdalena in the Tolima district.

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STUDY OF THE RIO SUSAGUÁ HYDROGRAPHIC BASIN

The Rio Susaguá basin is situated to the north east of the department of Cundinamarca, 40km from Santafe de Bogota, on the municipal territory of Zipaquirá and Cogua. It is part of the Rio Neusa hydrographic basin, a tributary of the Rio Bogota.

The basin displays different physical characteristics corresponding to three separate areas: the desert at the highest altitude, the foot of the mountains and the savannah.

In the lower area the basin is highly polluted by industrial effluent and wastewater from human settlements situated around Zipaquirá, such as Barandillas, La Paz and Santa Isabel.

The basin area is put under constant pressure due to changes in the use of the land and to the ever increasing population. The natural supply cannot meet the increasing water demands anymore, thus generating conflicts regarding use.

One of the possible alternatives is the strict regulation of water use, based on technical studies, aiming to achieve the optimal use of water resources, by looking for the balance between the natural supply and the socioeconomic demand.

A basin is a dynamic system where biotic, abiotic and anthropic elements exist inter-dependently and which defines different ecosystems.

Land use planning, defined as the implementation of social, cultural, environmental and economic policies in a society, is a means of solving problems generated by the uncontrolled use of natural resources.

At the end of the work, hydro-meteorological, agronomic and socioeconomic studies will be available as well as studies relating to land use, hydraulic works, irrigation and drainage, water quality and the environmental impact on development. Also, a digital thematic cartography and an electronic "interface" will be at the disposal of those who are interested. The biophysical and socioeconomic studies will permit knowledge of the basin's current situation and the proposal of the regulations and programs best adapted to the reality of this region.

There are plans for the formulation of a program for land use planning and one for water resources development and environmental protection. These two programs will include concrete proposals for agricultural management, industrial and residential localization, delimitation of restricted areas with specific management as well as other aspects coming from the study which may prove useful in the integrated, orderly management of the Rio Susaguá river basin.

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EVALUATING THE RESULTS OF THE FIVE-YEAR PROGRAM FOR THE DECONTAMINATION OF THE RIO NEGRO-NARE WATER RESOURCES

The passing of decree of April 1st 1997 means that the environmental authorities must continue to use taxes as an economic incentive for reducing polluting loads in terms of BOD and SS.

In this respect, the environmental corporations must carry out six monthly evaluations and draw up detailed reports which will be submitted to the Management Committee who, according to the results obtained in relation to the objectives, will have to decide on the increase of the regional criteria and their use to put economic pressure on the users who do not comply with the predefined criteria.

This economic pollution control was only put into practice a short while ago but polluting loads have already been significantly reduced.

Of the \$193 541 655.00 charged, \$134 429 628.00 have effectively been recovered for the first six months of 1997, that is 69.45% of the total billed.

However, the final report on basin pollution shows that none of the basins in the region has reached its target of a reduction of 50% in polluting loads as regards BOD and SS during the first six months of 1997.

All the companies who signed the agreement for cleaner outputs, members of the West Antioch Employers Corporation, paid the taxes on time.

The sampling control of the Corporation has shown that more than 50% of the projects have not been implemented.

The corporation must, therefore, adjust the regional criteria, from 1,0 to 1,5, in accordance with the decree. Thus, during the second six months, each kilogram of BOD and SS is to be modified by a value equivalent to the total residual load, multiplied by the minimum tariff and 1,5.

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EUROPE EUROPEAN COMMISSION THE WATER FRAMEWORK DIRECTIVE

A thorough restructuring of European Water Policy is in progress, and a new Water Framework Directive will be the main operational tool, setting the objectives for water protection well into the next century.

The overall purpose of this directive is to establish a framework for the protection of surface freshwater, estuaries, coastal waters and groundwater in the European Union, which prevents further deterioration and protects and enhances the status of aquatic ecosystems, and promotes sustainable water consumption.

The Directive requires:

- **River basin management**,
- An assessment of the **river basin's** characteristics,
- The monitoring of the status of surface and ground water in the river basin,
- The establishment of measurement programs to achieve the objective,
- The summarizing of all above items in a "**River basin Management Plan**" and a public survey on that Plan.

In addition, it contains requirements for:

- A mechanism for:
 - ensuring that water use is paid for at full cost recovery prices,
 - informing national authorities and the Commission of particular problems,
- Action to control accidental pollution,
- Simplified reporting procedures, and
- A procedure for the development of coordinated strategies for dealing with pollution by individual pollutants or groups of pollutants.

The new Directive will rationalize the Union's water legislation by repealing seven existing directives and ensure that any standard adopted is consistent with a sustainable use of water resources.

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THE EUROPEAN ENVIRONMENT AGENCY



The European Topic Center for Inland Waters is renewed until year 2000

The European Inland Water Topic Center (ETC/IW) carries out technical audits on behalf of the European Environment Agency (EEA).

The mandate of this body, set up in 1995 for three years, has been renewed for the 1998-2000 period in order to ensure:

- **The setting-up of a European water monitoring network: "EUROWATERNET"** This network must allow for the production of information on aquatic ecosystems, which is reliable, representative and comparable in all Member-States. It is to be noted that EEA's responsibility covers not only the 15 member-countries of the European Union, but also Norway, Iceland and the Central European countries.
- **The preparation of reports on the state of the environment in Europe:**

Every three years, EEA has to produce a report on the state of the environment in Europe. It is entitled the DOBRIS Report. The ETC/IW has contributed to the "water" chapters, particularly the aspects of eutrophication and availability of the resour-

ce, which appeared in the Spring 1998 report.

- **Technical support for European regulations:**

The European Environment Agency, in liaison with the European Commission (DGXI) entrusts ETC/IW with technical tasks which concern existing regulations, within the framework of the data collection imposed by these regulations, as well as the future European Directive pertaining to water resources.

ETC/IW : A CONSORTIUM OF 8 ORGANIZATIONS

- AWW (Austria)
- CEDEX (Spain)
- INAG (Portugal)
- NERI (Denmark)
- NIVA (Norway)
- IOW (France)
- VMM (Flanders)
- And WRC (Great Britain), which is leader of the consortium

These organizations share the tasks according to their own expertise.

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SPAIN

TAGUS HYDROGRAPHIC CONFEDERATION

THE TAGUS-SEGURA TRANSFER, THE FIRST IN EUROPE

Spain is the European country where rainfall is the most irregular in space and time.

Although the Cantabrian Cordillera benefits from rainfall similar to that of the countries of the region, other dry parts of Spain suffer from scarcity and irregular rainfall. The south-east of Spain is a region where this occurrence is particularly severe.

The 1933 National Hydrological Plan planned to convey water from the Tagus spring to the south-east. This became real in the 1970s.

This transfer became effective in 1979. An average volume of 287 hm³ and a maximum of 470 hm³ have been transferred since. A transfer of

600 hm³ per year had been planned but the severe drought that hit the Tagus spring prevented this forecast to become a reality.

The transfer infrastructures include:

- Two hyper regulating dam-reservoirs (Entrepeñas and Buendía), with a total storage capacity of 2.400 hm³.
- A booster pump of 263.50 meters, necessary to install a reversible power plant.
- A canal, 260 km long, is divided in three sections, the last one being a tunnel.
- Other infrastructures regulating the Tagus river basin permit the supply of the resources necessary for meeting the water demands from

users located downstream of the diversion canal.

The price of the service provided is paid by the users according to tariffs that include a contribution to infrastructure costs and to fixed and variable operating and maintenance costs.

Prices for the supply and the development of the transferred water amount to 19.1794 ptas/m³ for irrigation and 25.1136 ptas/m³ for drinking water supply.

Water supply is guaranteed for a population of over one and a half million inhabitants and for the irrigation of more than 70,000 ha. The recipient regions have thus improved their standard of living and even exceeded the Spanish

average and stopped endemic emigrations. Today, these recipient regions have the highest demographic growth.

The Tagus Hydrological Plan assessed the quantity of excess water that could be derived from the basin while protecting its development.

The consensus thus reached on the regulations planned in the Tagus Hydrological Plan, assisted by better hydrological conditions, ended an uninterrupted series of protests and conflicts, the "water wars", caused by the operation of the system.

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FRANCE

RHINE-MEUSE

INTERNATIONAL COOPERATION FOR THE RECOVERY OF WATER QUALITY IN THE MEUSE

The agreement for the protection of the Meuse, the result of several months of negotiation between authorities from the Netherlands, Flanders, Wallonia, Brussels and France was signed in Charleville-Mézières (France) on April 26, 1994 (the authorities from Luxembourg, Germany and Belgium being observers).

This agreement plans to strengthen cooperation as regards this international river: coordinated monitoring and warning networks, carrying out of pollution inventories, harmonized assessments of water and ecosystem quality, and formulation of an action program for the recovery of ecosystem quality..

This agreement also plans the setting-up of an International Commission for the Protection of the Meuse (CIPM), a federating tool for the implementation of this cooperation.

As the Charleville-Mézières agreement was signed by all contracting parties in October 1997, the CIPM could officially start its work on January 1, 1998.

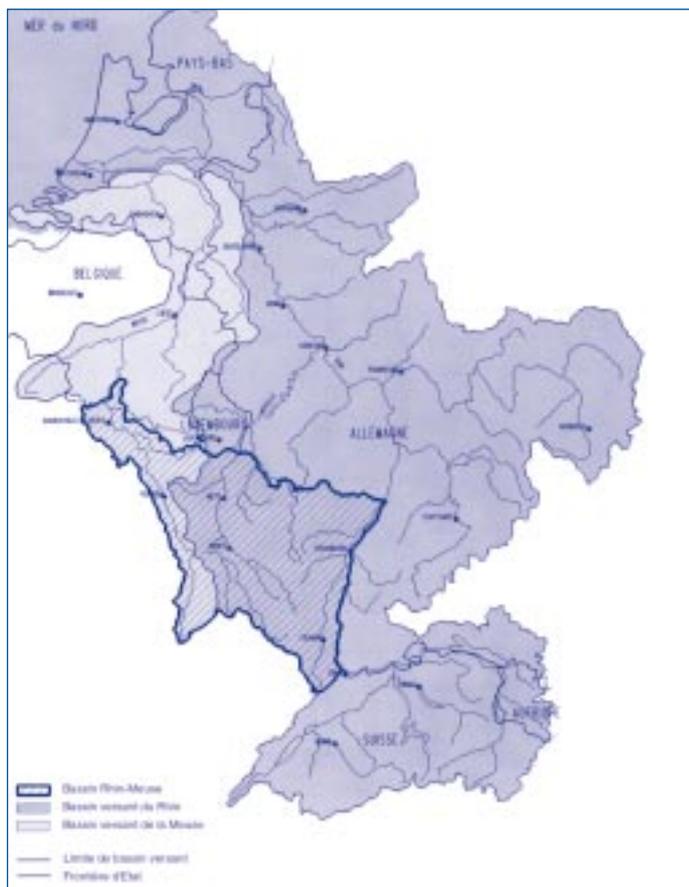
However, work had effectively started before this signature, the political will to cooperate being strong. Thus, a report on the quality of the international Meuse was published in 1997 and the "Meuse Action Program" was approved by the new Commission on March 10, 1998.

As the Walloon region had the Chairmanship of the Commission during the transition period (1995 - 1998), France will preside over CIPM during the next two years.

The Rhine-Meuse Water Agency, having gained a wide experience in international matters in the Rhine, Moselle and Saar Commissions, is actively involved in the work of this new Commission.

It should also be noted that the members of the River Basin Committee, its Chairman included, are part of the French delegation in CIPM plenary sessions.

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ADOUR- GARONNE FISHERMEN, VOLUNTARY TAX PAYERS

Leisure fishing remains the activity of about 6 million fishermen. Their regular presence along the banks makes them privileged observers of the quality of our aquatic ecosystems and their representatives emphasize the need to conserve and recover rivers that are not degraded by economic activities and where an abundant fish population is maintained and develops.

The six French River Basin Committees that gather representatives of all water users, also represent leisure fishermen and professionals.

These water users whose activities do not impair the quantity, quality or the natural flow of rivers, have not to pay taxes to the Water Agencies.

The fishermen's representatives in Adour-Garonne thought that the basin common cause should be equally shared in order to ensure that their interests and objectives are taken into account. This is the reason why leisure fishermen, followed several months later by professional fishermen, decided to voluntarily contribute to the financing of the basin's water management policy.

This move led to the signature of agreements with the Water Agency for the duration of the Action Program, five years.

The fishermen's contribution, collected by the departmental federations or professional associations, will be standard and progressive:

they will increase from FF. 12 per fisherman in 1998 to FF. 20 in 2001 for professionals and from FF. 1 to FF. 3 for leisure fishing.

From now on, the fishermen's organizations will also be able to directly receive aid from the Agency for projects, such as:

- improving knowledge;
- rehabilitation and management of fish habitats;
- public information and awareness raising;
- other projects such as monitoring networks...

Although the sums involved remain small, these contributions will enable the strengthening of a partnership between the fishermen's world

and the Water Agency, the convergence of interests and objectives of these organizations with those of the basin bodies.

The democratic management that takes place in such bodies, created by the water law of 1964, is strengthened and enriched by such agreements.

Nowadays, the "leisure user" of our rivers wants to fully participate in their management.

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SEINE-NORMANDY

THE FRENCH EXPERIENCE INTERESTS OUR FOREIGN PARTNERS

The French law of 16 December 1964 established a system for managing water in its natural setting: the hydrographic basin.

The French territory is split into six large hydrographic basins, in which the six Water Agencies, which are state administrative institutions, work to combine water management with economic development and respect for the environment in their respective basins.

In each basin, a Basin Committee regroups the different parties concerned (local elected officials, industrial and agricultural users, associations and State representatives). It is a system of shared and participative management.

Five-year action programs define priority actions and financing. They are worked out by the Boards of Directors of the six Water Agencies, approved by their basin committee and by the Prime Minister.

The Water Agencies (Artois-Picardy, Adour-Garonne, Loire-Brittany, Rhine-Meuse, Rhone-Mediterranean-Corsica and Seine-Normandy) allocate financial aid to local communities, industrialists and farmers who are committed to saving water and protecting water quality. These funds come from taxes paid by water users, calculated according to

the amount of pollution discharged and the quantity of water withdrawn. Therefore, the seventh Water Agency programs will amount to 105 billion francs worth of work between 1997 and 2001.

Many visitors

In view of the interest taken in the French system by many countries, the Seine-Normandy Water Agency, has been developing international cooperation activities since 1990.

Therefore a lot of personalities from abroad - more than 300 visitors a year - come to France to find out about the French water organization: the reasons for its creation, its early stages, the problems it has come up against and the way they were solved. One question in particular bothers visitors: how the French make "water pay for water"?

From Ministers to environmental specialists, they are, Japanese, Chinese, Latin-American, African, from Maghreb and the Middle East, Hungarian, Russian, Ukrainian, Swedish...

Experts' missions

This also involves going to the countries to answer the questions of governments who want to demonstrate the institutional ins and outs of democratic water resources management to their local authorities.

These missions are often followed up by technical, political or institutional studies to assess the viability of a locally managed basin system.

These different studies abroad often bring to light three difficulties:

- Firstly, the multiplicity and the diversity of the parties involved in water management, all with different, often opposing, interests which have to be reconciled and brought together into a consistent program.

- Secondly, the highly centralized political system which characterizes many of the southern nations, is a significant obstacle.

- Finally, the difficulty of mobilizing financial resources. Foreigners obviously dream of the annual budgets of the French Agencies. However, one must take into account their very slow progress in thirty years of work and the high contribution from all users.

Twinning arrangements with our European neighbors

Meetings, the exchange of expertise and techniques, co-operation agreements, visits to installations... strong links have been formed over the past few years, like, for example

between the Seine-Normandy Water Agency and the Office for Water of Bavaria Lander, the Environment Agency of the Thames region, the Belgian province of Hainaut or even the Guadalquivir Hydrographic Confederation in Spain.

The Water Agencies also have had a permanent delegation to the European Union since December 1997.

In fact, a framework-directive intended for clearing out the numerous regulations in force is under preparation in Brussels. On the one hand, it plans to establish river basin management, on the other, to impose the notion of action programs, comparable to those of the French Agencies. Finally, it will impose that all costs of water use be covered by the end user before year 2010.

Thus, more than thirty years after their creation, the basin institutions have strengthened "the sustainable management of water" by establishing a balance between the preservation of the environment, social dialogue and economic activity.

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FRANCE RNDE

"WATER-SEQ": A SYSTEM TO ASSESS WATER QUALITY

THE NATIONAL WATER DATA NETWORK



Water-SEQ is the new step towards river quality assessment, as a complete assessment of water **quality** is now possible using a limited number of indicators.

By grouping parameters together, the Water-SEQ indicators can be used to represent and compare results from heterogeneous regional monitoring programs.

With the water-SEQ, it is possible to:

- determine the water's suitability for different functions and uses,
- compare the water's current suitability with desired functions and uses,
- identify the problem indicators,
- define a water quality objective for each problem indicator,
- and monitor the efficiency of different policies to improve water quality, using classes and indexes.

Two other components of the river quality assessment system (physical environment and biological quality) are currently under development.

Biological indexes (invertebrates, diatomaceae) will be used to complement the water-SEQ in order to produce a global assessment of river quality in France.

**Ministry for the Environment
Water Agencies**

The National Water Data Network (RNDE) was created to implement a consistent information system ensuring an easy access to existing data.

Initiated in 1992 by the Ministry for the Environment and the six Water Agencies, RNDE has progressively widened its sphere to other bodies involved:

- the Ministry for Spatial Planning and the Environment,
- the Ministry of Health,
- the six Water Agencies,
- the Higher Council for Fishing,
- the French Institute for the Environment,
- IFREMER,
- Meteo-France,
- Electricity of France,
- the Research Center for Geology and Mines,
- The International Office for Water.

The Ministry for the Environment and the Water Agencies have entrusted **IOW** with the coordination of the project and the nation-wide operation of tools such as **SANDRE** or the **National Water Data Base (BNDE)**.

DATA SERVERS

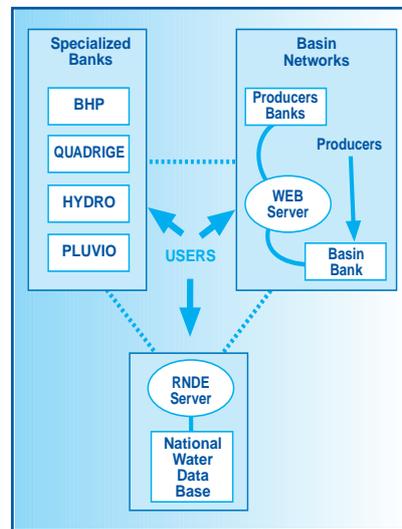
The RNDE federates various data banks, at the level of data producers, at the level of the basins (river basin data bases) and at the national level (the National Water Data Base - BNDE).

These banks are either specialized data bases or geographic ones.

Data servers are progressively set up on the Internet to give world-wide access to these bases.

The aim of the national server <http://www.rnde.tm.fr> is to give access to all RNDE products.

It provides the nation-wide products designed by RNDE, such as the national report on hydrological data.



PUBLICATIONS

Every year, RNDE produces several summary reports. **Among the latest**, there are:

- a report on sanitation in towns,
- an inventory of the main industrial discharges,
- a map of fish populations in French water courses...

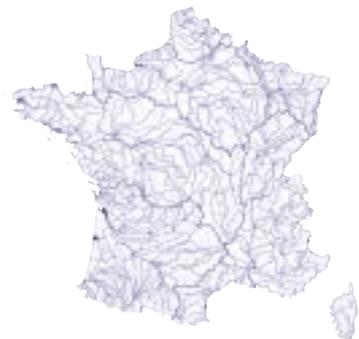
GEOGRAPHIC INFORMATION

The modern data processing technologies use geographic information systems that allow for the integration of location references and for the presentation of results in the form of maps.

BDCARTHAGE is the data base for catchment areas and

for a large-scale representation of the 525.000 km of watercourses. It is prepared by the Water Agencies using BDCARTO, the data base of the National Institute for Geography.

A similar tool is being prepared for groundwater.



SANDRE

SANDRE is a common language to be used by all water data producers and users for any effective exchange of standardized data.

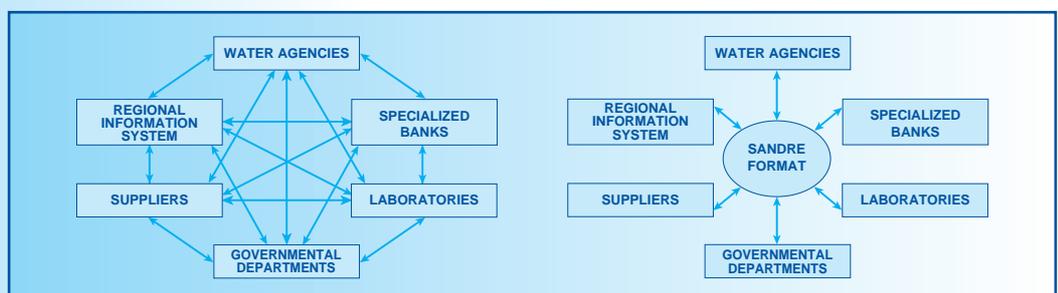
SANDRE prepares:

- a description of data using data dictionaries and models,
- lists of national references that are regularly up-dated,
- standardized formats for electronic exchanges (EDI).

SANDRE is acknowledged by EDIFRANCE as regards the standardization of water data exchanges.



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ITALY

A BASIN CONFERENCE

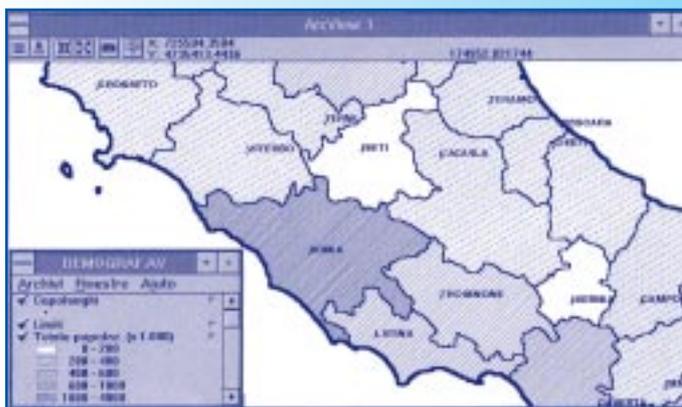
A Conference on Basins organized by Latium's Regional Basins Authority will take place on the 11th and 12th of December 1998. This conference is part of the development of a Priority Basin Plan Project.

The main objectives of this Conference will be:

- The analysis of legal and normative aspects regarding soil conservation at European, national and regional levels (areas of expertise, new trends, etc.).
- The reinforcement of the normative framework and of regulations (the application of directives and decrees)

- The reorganization of the main regional information systems (data management and dissemination, etc).
- The pursuit of collaboration between the Authorities for an improvement in efficiency and the homogenization of projects (agreements between bordering authorities, dialogue with the Technical Services, etc).

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THE LATIUM REGIONAL BASINS AUTHORITY

The Italian Law n°183 of the 18th May 1989 regarding soil conservation, establishes a new tool, the Basin Plan, the development of which has been entrusted to the Basin Authority.

In accordance with this Law, the Latium Region established its own "Regional Basins Authority" in 1994, with its headquarters in Rome.

HUNGARY

The French-Hungarian cooperation goes on

The Seine-Normandy Water Agency and the National Water Authority (OVF) have agreed to continue their cooperation for another 3-year period. A new framework agreement was signed in Paris, on the 29th January, 1998, by:

- Messrs. Joël Thoraval, Prefect of the Ile-de-France Region and President of the Seine-Normandy Water Agency and Pierre-Frédéric Teniere-Buchot, Director of the Seine-Normandy Water Agency, for the French part,
- Messrs. Dr. Miklós Varga, Director General of the National Water Authority (OVF) and Sándor Kabay, Director of the Regional Water Authority for the Central Danube Valley for the Hungarian part.

Special emphasis was given to this cooperation by the fact that both participating bodies deal with water management in the capital of their country.

Up to now, information has been exchanged on the following topics:

- application of the water policy,
- urban waste water collection and treatment,
- water tariffs and the financing of water works,
- flood control.

The Hungarian experts also had the opportunity for consultations on the financing practices used by the Seine-Normandy Water Agency.

In the future, the cooperation will mainly deal with the following topics:

- planning and development,
- groundwater protection,
- the application of the "polluter-pays" principle.

The close professional relations, existing between the Seine-Normandy Water Agency and the National Water Authority, will help Hungary's preparation to become a member of the European Union.

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International Conference in Budapest

The International Conference on European Rivers Development was held in Budapest on 16-18 April, 1998, at the Water Resources Research Center (VITUKI). This event is the continuation of a series of meetings in which the International Association for Hydraulic Research (IAHR) focused on generating a constructive dialogue between hydraulic engineers and ecologists. (Utrecht, 1991, Trondheim, 1994, Quebec, 1996).

This three-day meeting attracted more than 110 participants from 23 countries. The program was divided into 4 sessions:

- Sustainable development of European rivers
- Advances in river engineering research
- Multipurpose activities in rivers
- International rivers

during which 50 papers were presented.

The contributions highlighted the importance of integra-

ted river basin management, and revealed the interrelations between river development and protection of the aquatic environment. Several papers emphasized the studies carried out on European rivers such as the Danube, Isar, Inn, Drava, Tisza, Rhine, Elbe, Oder, or Vistula

The Proceedings of this conference are available at VITUKI.

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Creation of Regional Councils for Water Management

The new Act on Water Management of the Republic of Hungary came into force on the 1st of January, 1996. This Act includes many new elements such as the establishment of "Regional Councils for Water Management".

The most important reason for the establishment of regional councils for water management is that only the people concerned may formulate demands while taking into consideration all interests at stake. Due to the conflicts of interest related to water, it is necessary that such a body tries to reach compromises between its members to determine the future image of water management in the regions.

The Minister of Transport, Telecommunications and Water Management has been empowered to define the composition and the terms of reference of the Regional Councils for Water Management in a decree. This ministerial decree was issued in March 1998, and

the councils were established everywhere in June. Twelve regional councils were established in the country, according to the regional division of water authorities, whose sphere of competence is the river basin

The most important tasks of the regional councils for water management are the following:

- follow-up of the parameters determining water management in the region,
- the harmonization of regional river basin development and sanitation and waste water treatment programs so that they comply with the national basic principles,
- advice on the projects affecting water management in the region and the solving of conflicts of interests,
- the expressing of opinions concerning the annual budget of the district's water authority, approval and supervision of water-related projects financed from multiple sources,
- the harmonization of inter-regional plans for water distribution.

The regional councils for water management are composed of 24 members. The Chairman is elected among the members, personalities who know the water-related issues in a given region. The councils' secretariat is performed by the district's water authorities.

The first plans for river basin development are being prepared and will be discussed in the near future.

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CZECH REPUBLIC

Institutional reorganization of water management

Water management has a long tradition in the Czech Republic: due to the geographical position of the Czech Republic all the water courses leave the national territory to flow into three seas - i.e. the North Sea (Elbe River basin), the Baltic Sea (Odra River basin) and the Black Sea (the Morava River basin, tributary of the Danube). Water management planning and river basin management were introduced in the early fifties. River Boards were established in the middle of the sixties for the management of the main water courses and reservoirs in the catchment areas of the five largest rivers. In 1994, these five River Boards, being state-funded institutions, were changed into independent Companies run as corporations with the government being a 100 per cent stockholder. All five River Board Corporations joined IN-BO at its first General Assembly in Mexico (1996) and the membership declaration was signed by their founder - the Deputy Minister for the Environment of the Czech Republic.

The Act No. 122 of 1997 changed the responsibilities of the state administrations as regards water management. Consequently, two ministries are now responsible:

- The Ministry for the Environment is in charge of the protection of water resources - water quality (surface and ground waters) - and of water bodies,
- The Ministry of Agriculture is responsible for the management of water bodies (streams, reservoirs), man-made canals and irrigation systems, and of public water supply and sewerage networks and waste water treatment plants.

The supervising body of these River Board Corporations became the Ministry of Agriculture.

Both Ministries are obviously jointly responsible for the development and implementation of the water management policy. A new Water Act, as well as a new law regarding the public services, is under preparation as a consequence of the political and economical changes that occurred in 1989 which have to be taken into account as well as the legislation of the European Union.

Nowadays, the management of surface water is mainly undertaken by three kinds of institution supervised by the Ministry of Agriculture:

- The River Board Corporations (where the Ministry is the sole shareholder) are responsible for the management of the largest water-courses and reservoirs,
- The Land Reclamation Authority, which is responsible for the management of small streams and reservoirs in the agricultural landscape and of canals and irrigation systems. The transformation of this Authority is under preparation with the aim of its integration into the River Boards),
- The organization in charge of the management of forests is also responsible for mountain streams.

A new style of planning, based on a broader participation of the regional/local administrations and municipalities in each catchment area, has just begun. The "bottom-up" instead of "top-down" procedure is applied with the focus on the strategy of sustainable development and use of water resources in accordance with the new General Directive for water policy developed by the European Commission.

*Pavel Puncochar,
Department of Water
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Agriculture*

The Ohre River Board Corporation

- **Specialized flood protection in Bohemia**

Specialized flood protection of industrial and mining regions is a significant water management characteristic in the area administered by the Ohre River Board Corp. It concerns a relatively small brown-coal area situated under the Krusné mountains. Consequent river basin devastation in this area led to fundamental changes in the natural river systems that have affected more than 90 municipalities.

Tens of kilometers of river protection works and man-made canals have been built since the beginning of the seventies.

It has also been necessary to avoid the degradation of the forests of these catchment areas that are responsible for an increase of 40 - 60 % in flow rates.

This specialized flood protection was worth an investment of 1,6 billions CZK. The economic balance of these special units has not yet been sorted out because the mining companies, recipients of this service, refuse to cover the

operational cost. This causes annual losses of more than 65 million CZK for the Ohre River Board Corp. which have to be covered by other activities.

• Water Management Control System

The water management control system (VHD) owned by the Ohre River Board Corporation ensures the control of water supply networks and water treatment plants, the preservation of water quantity and quality, the protection of the territory and property against floods, the maintaining of the minimum flow for public health needs, the creating of ideal aquatic conditions and the mitigation of the negative impact of ice phenomenon.

It concerns an automatic information, control and communication system that guarantees the measurement, transfer and processing in real time of hydro-meteorological and operational data, needed for effective management of the Ohre waters. The whole system is built to be compatible with the River Board Corp's information system and is an integral part of the Regional hydro-ecological information system.

This system was developed between 1975 and 1982 and data control and collection started in 1983.

The renewal of the automatic measurement networks and of the management control center in Chomutov has been in progress since 1993. After its completion in 1999 the center will process approximately 600 parameters collected from 200 measuring points.

The Automatic system of data transfer and processing significantly improves water management monitoring in the area covered by the Corporation.

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T.G. Masaryk : Training and Information Center for the Water Sector

The T.G. Masaryk's Water Research Institute in Prague is setting up, within the European PHARE program and with the cooperation of the International Office for Water, a Training and Information Center for decision-makers of the water sector. Its aim is to further the exchange of experiences, pro-

vide modern methods and improve knowledge on integrated water resources management in relation with the European Union's directives.

IOW's documentation base - EAUDOC - has been installed in our Institute within the scope of this project.

All the members of our Center did appreciate the training programs implemented in France and in the Czech Republic. They benefited from IOW's expertise and were thus advantaged, if compared to the other types of training offered in the same field in the Czech Republic.

The following training modules were used in a first series of pilot seminars on:

1. Modern methods for joint water management:

- Formulation of land use plans,
- Programs for the development of water services (PRV-KUC),
- Use of data from Geographic Information Systems,
- The maintaining of flow rates needed in watercourses for ecological purposes,
- Choice of technologies for resources, water potabilization plants, wastewater treatment plants.

2. Economic and legal tools for controlling water resource pollution:

- European legislation in the water sector,
- Management tools and financing for water supply and sewerage networks.

The participants appreciated the training courses and the topics dealt with and some of them have requested to be registered in the next training courses: the highest praise was that a participant from Brno insisted that such actions were of great importance and unique of its kind for field agents.

It is now possible to activate, in the Czech Republic, a Public Service Institute which will develop new training programs, in cooperation with the Ministry of Agriculture and IOW, within the framework of the Republic's integration into the European Union.

The TG Masaryk Institute is also participating in another PHARE project: the "Multi-Country Program in Distance Education: WAWAMAN"

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RUSSIAN FEDERATION

CONCEPT OF A NATIONAL WATER POLICY

The Russian water sector is facing a crisis the basic causes of which are:

- An insufficiently effective water management policy during the Soviet period.
- The outdated managerial structure of the water sector.
- Lack of effective economic mechanisms.
- Non-transparency of ownership rights, power and responsibilities of the parties involved.

This reveals the urgent necessity of elaborating a National Water Management Policy for a sustainable water sector development.

The concept of this water management policy should take into account international agreements, UN and UE recommendations. Economic, institutional and legal mechanisms should be elaborated.

Goals, objectives and principles

The main objectives of this concept are to reach and maintain an economically optimum and environmentally safe water use, and also:

- to supply the population with the necessary amount of potable water of standard quality
- to provide water of good quality and in sufficient quantity for economic activities,
- to prevent floods, erosion, droughts, etc.
- to ecologically rehabilitate water bodies and watersheds.

The retained principles include:

- **A river basin approach:** as the river basin is a management unit where elements are interdependent.
- **Decentralization and self-financing according to wa-**

ter costs: The current unfavorable conditions are the result of its total dependence on the Federal budget. Many water bodies are Federal property, although their current management is carried out by institutions of the States. It is thus essential to allow the States to directly manage the water resources and their use whereas the Federal bodies should only retain control functions. Settling property rights and responsibilities should be the first step. The second phase should be to improve the payment system. Improving water management is impossible without drastic reforms of the municipal water supply system, which is one of the main water users.

- **A broad public awareness-raising:** There is no sense in counting on a long-term success if the population does not recognize the necessity and inevitability of these reforms. The position of the authorities must be open to the utmost: full access to data on tariff calculation, expenditure

structure, the results of auditing of water management enterprises, etc. Authorities should make the public aware of the hazards of the current situation and confirm their intention, readiness and skill to overcome the crisis in the best possible way (economically reasonable and efficient). It is also necessary to explain to the people that they will pay for the reforms.

Implementation in a pilot region

Sverdlovsk oblast with Ekaterinburg city as its capital was chosen as the pilot Constituent of the Russian Federation where the concept of the Constituent water policy has been elaborated. Legal, institutional and economic documents have been developed and these documents have been submitted to be approved by the Constituent's authorities.

N. Mikheev - Ministry of Natural Resources of the Russian Federation, A. Tchernyaev - Russian Scientific Research Institute (RosNIIVKh), S. Belyaev - Center for Technical Assistance (CPPI), E-mail: Sergey Belyaev<emp-water@dialup.mplik.ru

POLAND

WATER RESOURCES MANAGEMENT IN POLAND: PROBLEMS AND SOLUTIONS

The Polish resources management policy will include the following:

- decentralization of management to the river basins,
- increase of the amount of water stored in reservoirs and their protection for safeguarding the quality of stored water,
- planting of forests in watersheds in order to improve natural retention properties,
- improvement of surface water quality with the building of waste water treatment plants and with the regulation of polluting discharges,
- strengthening of the economical instruments in order to limit water misuse.

Conditions will be created to establish regional economic

systems of water management in a river-basin. The resources will come from the dues paid for special use of water (water extraction and discharge).

Water use will be rationalized, in particular in industry and services, as well as for the future irrigation of usable land. The storage capacity will contribute to the regulation of the water flow in river-beds, which is essential for maintaining proper hydro-biological conditions for water ecosystems.

The National Environmental Policy, drawn up by the Ministry of Environmental Protection, Natural Resources and Forestry, stated a number of short-, medium-, and long-term priority objectives which

are consistent with the decision to associate Poland with the European Union. It implies that the Polish environmental law be adjusted to the European regulations, in particular by:

- reinforcing the protection of water resources against degradation,
- monitoring radioactive pollution of sea and organisms, chemical contamination of air, the volume of pollutants brought by the river to its mouth,
- monitoring sea-shore belts of the Baltic Sea and mud at the sea bottom.

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The "Network Newsletter
is published with the support
of the French Water Agencies



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Production
Eau & Développement international
ESTER - BP 6916
87069 LIMOGES Cedex - FRANCE

Printing
Chastanet Imprimeur - LIMOGES

On the Web :

<http://www.oieau.fr/riob/>

N° ISSN : 1265-4027

SPECIAL FEATURE: BRAZIL IS HOSTING INBO'S GENERAL ASSEMBLY 1-4 DECEMBER 1998 - SALVADOR DE BAHIA

THE NATIONAL COUNCIL FOR WATER RESOURCES

The decree, creating the National Council for Water Resources (CNRH), was passed on June 3, 1998. It is the first step towards the application of the other provisions of the Law no 9.433/97 that created the National Water Resources System, one of the largest projects of the Federal Government.

The decree details the responsibilities of this organization while defining its composition. Among its main responsibilities, it coordinates water resources management with regional and State planning, the formulation of a national policy for the sector and the establishment of overall criteria for the concession of rights to use water resources.

Received with enthusiasm by the technicians of the sector

and water users, the CNRH is chaired by the Minister for the Environment, Water Resources and Legal Amazonia (MMA), and composed of twenty nine members who are representatives of the Federal Government, State Governments, water users and the civil society. The secretariat for Water Resources (MMA) is responsible for the Executive Secretariat of the Council.

Due to the restricted number of its members, the CNRH can make flexible decisions, by choosing the topic to be discussed and dealt with by the represented sectors.

It is important to emphasize the progress made in regulations and legislation, thanks to the CNRH which reviews and formulates the sector poli-

cy, arbitrates conflicts between the users of water resources, assesses the proposals received from river basin committees and deliberates on the main projects for the development of water resources. It introduces new practices for the management of public assets, in which collegial decision becomes essential.

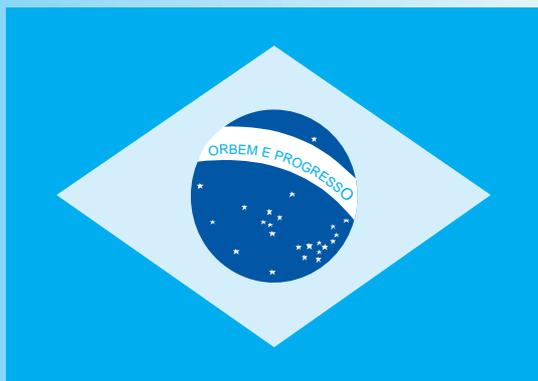
It should be emphasized that only the problems that cannot be reasonably solved at the river basin level will be submitted to the CNRH. Indeed, the decentralization principle, stated in the Law, requires that all decisions that can be made at the lowest hierarchical levels must not be submitted at the highest levels.

It is obvious that the creation of the CNRH, has an inter-

esting particularity: the members of this high council are the representatives of the parties concerned who discuss the problems in basin committees, that are real water parliaments, at the level of each region.

All 29 members of the CNRH have been nominated and they assumed their position at the beginning of October.

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THE PIRACICABA - CAPIVARI CONSORTIUM ORGANIZED A WORKSHOP ON RIVER BASIN MANAGEMENT

For three days, from June 29 to July 1, specialists from Brazil and several other countries gathered in Piracicaba (São Paulo State) to analyze water management in Brazil and its future prospects.

On the first day, the topic dealt with was the current situation of the Federal law on water resources and its development.

On the second day, Mr. Raymundo Garrido (MMA), President of the Latin American Network of Basin Organizations (LANBO), opened the debates on the topic of international cooperation in water management. Mr. Axel Dourojeanni, of CEPAL presented his experience in this matter as well as several publications of CEPAL.

The last day was reserved for technical debates on the plans for river basins. The debates emphasized the need to formulate applicable and practical plans, according to real resources.

The Workshop was organized by the Piracicaba-Capivari Consortium with the support of the French Embassy, Piracicaba City Hall, and the Municipal Water and Sewer Service of Piracicaba (SEMAE).

The law on Basin Agencies of São Paulo State, no 10020, was approved on July 3rd.

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RIVER BASIN COMMITTEES IN BRAZIL

Nowadays, Brazil has more than 60 river basin committees, most of them having been successfully created in the São Paulo State.

The Law n° 9.433/97, that introduced the river basin management concept, defines them as being committees for dialogue and deliberation. It also established a participation mechanism adapted to the size of the Brazilian territory. Within this concept, it is planned to set up committees in the large river basins in addition to sub-basins and groups of basins. All sub-basin committees will depend on the main basin committee.

The São Francisco river basin is a good example. It covers more than 600,000 km² and has different upstream and downstream characteristics. Belo Horizonte, a large metropolis with high demographic density, large industries and mines, is situated in the São Francisco upper region. The basin is therefore polluted by industrial and domestic discharges. This region regroups the main basins that form the main river, especially that of the Paracatu that represents 70% of the water flow at the mouth of the river. In the middle of the basin, density is less high, tributaries are less numerous and water is shared between irrigation of export crops and a hydropower complex that provides energy to the whole north-east region of

the country. Finally, in the downstream part of the São Francisco, density is low, tributaries are smaller and conflicts mainly arise between hydropower and fishing.

It is to be emphasized that the large São Francisco committee, created in 1979, will formulate the guidelines and parameters for the whole basin, such as the quality and quantity of the tributaries that flow into the main river. The large projects that were planned in the basin will also be assessed by it. Committees will be created for the tributaries where problems and conflicts are the most obvious and specific, for instance:

- The Velhas river basin committee, created in August 1998, which includes the town of Belo Horizonte as well as a large part of the industrial complex that surrounds it.

- The Mosquito river basin committee, created in September 1998. This smaller basin, about 8,000 km², is characterized by conflicts between small irrigation users. The only solution available to users for solving conflicts is to apply the "common cause" principle.

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