INBO NEWS-LETTER

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of Basin Organizations

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SUMMARY

2024 promises to be another busy year for the International Network of Basin Organizations (INBO), at a time of growing recognition of our basin-based approach to sustainable water resources management.

Celebrating the 30th anniversary of our network, the next INBO World General Assembly will take place from 7 to 10 October 2024, in Bordeaux, France. It will mark the handover of the presidency from Morocco to France for three years and the renewal of our action plan.

The World Water Forum in Bali, from 18 to 25 May 2024, with INBO coordinating the political segment devoted to basins, will provide an extensive platform for sharing knowledge and experience and promoting innovative solutions, around the classic but constantly renewed challenges of IWRM at basin level: planning, information sharing, stakeholder participation, adaptation to climate change, among others.

The United Nations Water Conference in New York in March 2023, 46 years after the Mar del Plata Conference in 1977, was a significant moment in confirming the political and technical interest of many countries in the basin approach.

This recognition has given INBO renewed impetus for its action “by and for the basins” throughout the world.

Dr Eric Tardieu,
INBO Secretary General

INBO IN THE MAJOR WORLD WATER EVENTS 2023

Preparation of the 10th World Water Forum (Kick-off meeting)

The aim of this kick-off meeting was to bring together and discuss the priorities and expectations of the participants for the 10th World Water Forum, which will take place in Bali in May 2024. *See p. 28*

15 - 16 February

Jakarta (Indonesia)

https://worldwaterforum.org/blog/nsf-1/1st-national-stakeholder-forum-1

Advancing Transboundary Water Cooperation through commitments to the United Nations 2023 Water Conference

The webinar presented the Water Agenda and provided recommendations and examples of commitments for transboundary water management, in preparation for the United Nations Water Conference 2023.

23 February

Webinar

www.unescwa.org/events/advancing-transboundary-water-cooperation-through-commitments-united-nations-2023-water

Preparation of the 10th World Water Forum (2nd Stakeholders meeting)

The second preparatory meeting for the 10th World Water Forum, whose theme is "Water for Shared Prosperity", was a crucial stage in the planning of the Forum, with the definition of three essential pillars: the political, thematic and regional aspects. *See p. 28*

12 - 13 October

Bali (Indonesia)

https://worldwaterforum.org/blog/news-3/2nd-stakeholders-consultation-meeting-addressing-global-water-challenges-74

XVIIIth IWRA World Water Congress

With the theme "Water for all: harmony between man and nature", the XVIIIth World Water Congress aimed to promote coordination and balance between the water needs of man and nature. INBO organised several sessions around the themes of water management at basin level, nature-based solutions and innovative water information systems.

11 - 15 September

Beijing (China)

www.worldwatercongress.com

Euro-INBO

For its 20th anniversary, the International Euro-INBO Conference brought together representatives of the Member States of the European Union, national and regional water administrations, river basin district authorities and basin organisations: an essential collaboration for the implementation of the Water Framework Directive (WFD) and its "sister directives". *See p. 9*

16 - 19 October

Valencia (Spain)

www.oieau.org/en/actualites/europe-inbo-2023-20th-anniversary-of-international-conferences-for-the-implementation-of-european-water-directives

1st Latin American Water Forum

This new international forum aims to strengthen dialogue and integrate decision-making and governance processes in the field of water and sanitation in Latin American countries. *See p. 8*

21 - 22 November

Aracajú (Brazil)

www.forolatinoamericanodelagua.org

INBO IN THE MAJOR WORLD WATER EVENTS 2023

United Nations Water Conference

The United Nations Water Conference 2023, a historic event, provided an opportunity for stakeholders in the water sector to come together to discuss the challenges and opportunities related to water management on a global scale. INBO brought the voice of the river basins to the table through numerous sessions and side events. *See p. 6*

22 - 24 March

New York City (USA)

https://sdgs.un.org/conferences/water2023

7th meeting of the World Network of Basins Working on Adaptation to Climate Change

The meeting provided an opportunity to exchange experiences and updates on the benefits and added value of developing and implementing climate change adaptation strategies and plans in transboundary basins, as well as to discuss the network's future activities.

25 - 26 May

Geneva (Switzerland)

https://unece.org/environmental-policy/events/seventh-meeting-global-network-basins-working-climate-change-adaptation

40th IAHR World Congress

On the occasion of the 40th World Congress of the International Association for Hydro-environmental Engineering and Research (IAHR), INBO organised and moderated a special session devoted to river basin management and science.

22 August

Vienna (Austria)

www.iahr.org/video/collection?id=98

3rd International Conference on Water and Climate

Co-organised by the Kingdom of Morocco, INBO and the World Water Council, this conference dealt with water management at basin level as a key to adaptation and achieving the Sustainable Development Goals.
It brought together 400 participants to discuss and exchange experiences on the implementation of Integrated Water Resources Management (IWRM) and to respond to the challenges posed by climate change. *See p. 7*

6 - 7 July

Fez (Morocco)

www.equipement.gov.ma/eau/CIEC/Pages/3eme-Conference-Internationale-Eau-et-Climat.aspx

28th Conference of the Parties on Climate Change (COP28)

Organised by the United Arab Emirates, the COP28 was the scene of intense negotiations. Determined to put water at the centre of the debate, INBO organised seven remote events on river basin management and adaptation to climate change. *See p. 18*

30 November - 12 December

Dubai (United Arab Emirates)

www.cop28.com/en

United Nations Water Conference, New York, 22-24 March 2023

© INBO

The International Network of Basin Organizations (INBO) was present at the United Nations Conference on Water in 2023 to bring the voice of the basins to the attention of decision-makers and various stakeholders in the world of water working at all levels.

The conference, which took place in New York from 22 to 24 March 2023, was a major event for all those involved in the water sector, 46 years after the Mar del Plata conference in 1977. It enabled the entire water community to take part in constructive meetings, renew physical dialogue and strengthen links with partners.

In this context, INBO participated in the organisation of four events:

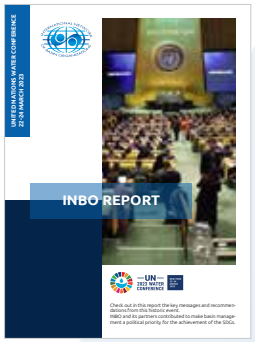
- **"Sustainability in the good governance of groundwater resources"** Supported by the Kingdom of Morocco
- **"The approach to nature as an integral part of society"** Organised with The Nature Conservancy
- **"Integrated water resources management at basin level: the benefits of this integrated approach to accelerate the achievement of sustainable development goals"** Supported by France
- **"Committing to advancing transboundary water cooperation worldwide for sustainable development, climate action, stability and peace"** Organised with the Coalition for Transboundary Water Cooperation

INBO also took part in around ten workshops and conferences organised by its partners, notably on the topics of cross-border cooperation, risk management, water security in Africa, and city-basin dialogue.

It shared its analyses, knowledge, experiences and solutions around the pivotal theme of water management at basin level, through its initiatives such as the Dakar Action Plan and the Water and Nature Declaration.

In line with the UN's Sustainable Development Goals, INBO's participation in this conference bears witness to the importance of international cooperation and the development of common strategies.

The announcements made at the end of the discussions open up encouraging prospects for accelerating the joint effort to manage water resources sustainably.



In our report, you will find all the key messages, commitments and recommendations made by INBO during the debates at the United Nations Water Conference in 2023 on the challenges of water management by and for river basins, in a context of climate change and increased pressure on the resource.

TO FIND OUT MORE

INBO REPORT

"River basin management plans are useful tools for planning and implementing actions for the protection and sustainable use of water resources, as well as international cooperation. River basin management plans are also an excellent practical example for links between SDG 6 and SDG 14 as measures for improving inland waters also contribute to achieving good status of marine environment."

H.E. Mr. Andrejs PILDEGOVIČS,
Ambassador and Permanent Representative of the Republic of Latvia to the United Nations

INBO AT THE INTERNATIONAL CONFERENCE ON WATER AND CLIMATE

Basin management as a key to adaptation and achieving the Sustainable Development Goals

Organised by the Kingdom of Morocco, the International Network of Organizations (INBO) and the World Water Council (WWC), the 3rd International Conference on Water and Climate took place on 6 and 7 July 2023 in Fez (Morocco). Its aim was to debate and exchange experiences on the implementation of Integrated Water Resources Management (IWRM) and to respond to the challenges posed by climate change.

The conference resulted in the adoption of the Fez Declaration for strengthening the implementation of Integrated Water Resources Management at basin level.

- 400 participants from 100 countries ;
- speakers from 24 regions of the world ;
- 4 languages: French, Arabic, English and Spanish.

The participants in this meeting affirmed or reaffirmed their support for initiatives in favour of basin management, such as the platform for incubating water and climate projects.

The aim of the water and climate project incubator is to accelerate the emergence of high-quality adaptation projects at river basin level. Incubation consists of technical support to produce a project concept note that is sufficiently mature to be submitted to climate finance funders. A significant leverage effect is expected, with a ratio of 1 to 100 between the incubation budget and the project implementation budget.

TO FIND OUT MORE

Read the declaration

Project Detection Form

Promoting innovation and water-saving technologies

To deal with the increasing frequency and intensity of droughts, the irregular availability of water resources and excessive consumption by users, these technologies make it possible to save water, adapt to changes and improve knowledge of rainfall, flow and evaporation.

Cross-sectoral water governance and commitments by and for river basins

Many sectors (health, agriculture and food, energy, industry, urban planning, tourism) depend on water resources, and the involvement of all stakeholders is essential: cross-sector governance is a sustainable approach at all levels, and particularly at the level of river basins.

Groundwater management: challenges and prospects

Groundwater provides more than 50% of the world's drinking water, 40% of water for irrigated agriculture, and 30% of the water needed for industrial activities. While groundwater availability is declining, our dependence on it continues to grow. Sustainable, joint management of groundwater and surface water is needed to cope with the impact of climate change on the quantity and quality of the resource.

Examples of solutions: the establishment of protection perimeters and programmes to restrict their use, consultation, the implementation of artificial recharge projects and natural water retention measures, etc.

Taking account of the real cost of water when mobilising resources

Mobilising water resources and making them available requires significant investment, operating and maintenance costs, especially if non-conventional water resources are used.

Quebec Watershed Organisations Group (ROBVQ): communities of practice and cross-disciplinary skills at the service of water

Quebec's watershed organisations at the Grande Agora 2023. © ROBVQ

The Quebec Watershed Organisations Group (ROBVQ) brings together and represents Quebec's 40 basin organisations. Its mission is to promote integrated water management at the basin level and to support these organisations in their activities. As such, it offers them support, training and representation services. The essence of the ROBVQ is to form a unified network, strengthened by a sense of belonging and mutual trust.

Pooling resources and expertise and stimulating innovation, while respecting their autonomy and diversity, are essential elements. This is how the ROBVQ set up communities of practice (CoPs). It began by identifying all the activities carried out by its members. They were then classified under four fields of practice: administration and management, expertise and analysis, mobilisation and communication, and land use planning and regulation. These then formed the four main CoPs. They are organised around workstreams, which aim to build capacity in a specific practice, with the idea of developing the tools, methods, knowledge and know-how associated with it.

To integrate network members who do not take part in the CoPs, the ROBVQ has set up a parallel platform, the Agora. It is the focal point for all the discussions arising from the CoPs. Four events are held each year, including one face-to-face event, the Grande Agora. The strength of this process lies in the cross-disciplinary learning that takes place, which is then reproduced in the activities carried out by the basin organisations. In a context where water governance in Quebec relies primarily on the ability of stakeholders to work together and demonstrate agility and flexibility with few resources, the CoPs are an ideal laboratory for developing the skills needed for integrated water management.

Karine DAUPHIN,
General Director of ROBQV

1st Latin American Water Forum in Brazil: creation of a Regional Council

The 1st Latin American Water Forum took place in the city of Aracaju, Sergipe, Brazil, from 20 to 22 November 2023. This important international event aimed to strengthen dialogue and integration of decision-making processes on water and sanitation within Latin American countries, in the political, technical, social and institutional contexts, as well as to enable the establishment of networks, interactions and agendas for water resources that contribute to sustainable development in Latin America.

The event was organised by the Brazilian Network of River Basin Organizations (REBOB), together with the Brazilian Association of Water Resources (ABRHidro), the Brazilian Association of Groundwater (ABAS) and the Brazilian Association of Sanitary and Environmental Engineering (ABES), with the support of the National Water and Basic Sanitation Agency (ANA) as well as UNESCO, and brought together discussions on the themes of climate, environment, innovation, development, financing and cooperation.

The Forum was attended by more than 400 participants from 18 countries and closed its agenda with the founding of the Latin American Water Council with the support of 112 public, private and civil society institutions. The agenda of the Latin American Water Council foresees its installation during the 10th World Water Forum to be held in Bali, Indonesia, in May 2024.

Lupercio ZIROLDO ANTONIO,
President of the REBOB

© REBOB

"The international water community must listen more to the voice of Latin America and the Caribbean. Because it has a rich and successful experience to share, and faces challenges common to many other regions of the world."

Dr Eric TARDIEU,
INBO Secretary General

21st International Euro-INBO Conference (16-19 October, Valencia, Spain)

150 PARTICIPANTS

24 COUNTRIES REPRESENTED

2 INTERACTIVE WORKSHOPS

5 THEMATIC SESSIONS

62 SPEAKERS AND RAPPORTEURS

The 21st International Euro-INBO Conference was co-organised by the International Network of Basin Organisations (INBO), the Júcar River Hydrographic Confederation, the Spanish Ministry for Ecological Transition and Demographic Challenge, the French Office for Biodiversity (OFB) and the Mediterranean Network of Basin Organisations (MENBO). 150 participants from 24 countries attended to discuss the current and future challenges of water and river basin management in Europe.

Discussions over the two days centred on five thematic plenary sessions (diffuse agricultural pollution, implementation of the Water Framework Directive and links with other European directives, wastewater reuse, participative management, cross-border cooperation).

This anniversary edition was marked by the handover of the Euro-INBO presidency from France, represented by Mr Jean Launay, President of the National Water Council, to Spain, represented by Mr Teodoro Estrela, Director General for Water at the Ministry of Ecological Transition and Demographic Challenge.

A special feature of this year's event was that, to mark MENBO's 20th anniversary and the statutory sessions of its General Assembly, basin management stakeholders from both sides of the Mediterranean were also invited to take part in the discussions.

TO FIND OUT MORE

The Euro-INBO 2023 report

Identifying innovative water governance practices with Horizon Europe projects

The conference hosted a workshop dedicated to water governance innovations by a cluster of three Horizon Europe projects (GOVAQUA, InnWater and RETOUCH NEXUS). The workshop provided an opportunity for the participants to learn about innovative water governance practices thus far identified by the three projects and to provide their feedback.

An abundance of good water governance practices thrives in Europe and one aim of the workshop was to bring together examples of these. Innovation in water governance can be seen as an evolving practice that embraces new, not yet broadly applied solutions that could pave the way for a more adaptive and resilient water management.

Water governance innovations may relate to, for example, stakeholder participation, digital tools, economic instruments, or the Water-Energy-Food-Ecosystems Nexus approach that highlights the interdependence of water, energy and food security and ecosystems. In the workshop, real-world case studies from the three research projects offered a tangible connection to the issues at hand, while an interactive working session fostered lively debate and brainstorming among attendees.

TO FIND OUT MORE

Concept note

Workshop's presentations

River management in a context of climate change: challenges and opportunities

Climate change is having a considerable impact on water quality and quantity. Extreme events such as droughts and floods are occurring all over Europe, impacting not only biodiversity but also human activities. Examples of adaptive and integrated river management already exist (reopening of rivers, restoration of native vegetation, etc.), but certain challenges remain (conflict between water uses, management of extreme events, green water, NBS, etc.), for which basin organisations have a central role to play.

TO FIND OUT MORE

Workshop's presentations

Outcomes of the workshop

Improving water and energy coordination in Central Asia

Water and energy management is closely interlinked and has been a key factor of inter-state relations among the Central Asian countries since their independence in the early 1990s. Over the 30 years of independence, the Central Asian countries have made continuous and constructive progress in cooperation, including through joint work under institutions such as the International Fund for saving the Aral Sea (IFAS), the Interstate Commission for Water Coordination (ICWC), the Interstate Commission on Sustainable Development (ICSD) and the Coordinating Dispatch Centre (CDC) "Energy".

However, coordination between water and energy agencies for ensuring stable and mutually beneficial flow regulation is still limited. Therefore, the momentum towards greater regional interaction has been increasing in recent years, pushed by the heads of Central Asian states reiterating the importance of strengthening mutually beneficial multilateral cooperation on the integrated and rational use of water and energy resources.

In 2023, the Scientific Information Center of the Interstate Commission for Water Coordination (SIC ICWC) in Central Asia, acting as the Secretariat of the the Regional Network of Water (Basin) Organizations from Eastern Europe, Caucasus and Central Asia (EECCA NWO), contributed to this process. In partnership with the Organisation for Economic Co-operation and Development (OECD) and countries experts, it prepared a discussion paper, Rethinking Institutional and Financial Mechanisms on Water and Energy Cooperation in Central Asia and widely discussed its findings in different fora such as a workshop "Innovative Solutions for strengthening regional cooperation on water and energy in Central Asia" (7 June, Dushanbe), a special session in Eurasian water and energy complex in Eurasian'23 Congress (8-9 June, Sochi), a roundtable in memory of Prof. V.A. Dukhovniy "Improvement of regional water and energy cooperation in Central Asia" (16 August), and 2023 SPECA Economic Forum (20-24 November, Baku).

The paper and discussions suggest that the way forward in improving water and energy coordination calls for a holistic approach in designing measures, building on the existing water and energy mechanisms while combining administrative and market-based approaches in support of interstate regulation. Such a hybrid approach could have the great potential to efficiently make and implement mutually beneficial decisions on water and energy in Central Asia.

Dr Dinara ZIGANSHINA
Director, SIC ICWC

TO FIND OUT MORE

http://cawater-info.net

New times for governance

The Water Tribunal of the Valencia Plain is one of the oldest existing judicial institutions in Europe. It is made up of eight elected administrators responsible for settling disputes relating to the use of irrigation water by farmers in several irrigation communities and canals. © CHJ

At a time when water-related problems are worsening in many regions of the world, whether due to pollution (urban, industrial, agricultural...), overexploitation of rivers or aquifers or social or geopolitical problems, a multitude of proposals are emerging for technological solutions that aim to solve these problems: integrated management of water resources, use of non-conventional resources (desalination of seawater or reuse of treated water), digitalisation of the water sector, cutting-edge technologies of all kinds... it seems as if the solution to the problems that men have created were not in their hands.

J.F. Kennedy said: *"Our problems are man-made, therefore they may be solved by man. No problem of human destiny is beyond human beings"*. Indeed, the problems that humans have caused can be solved by humans themselves, without the need for major technology, without the need for major projects and works, without the need for major financial outlays. Governance is the key.

It would be interesting that governments, administrations and basin organisations work more intensively on the implementation of these governance principles. If we succeed, we will solve our problems on our own scale as human beings, making use of the greatest gift we have, intelligence and language, in a more democratic and economic way, and we will make the world more habitable and, above all, much more human.

Miguel POLO,
President of the Júcar Hydrographic Confederation, Permanent Technical Secretary of Mediterranean Network of Basin Organisations (MENBO)

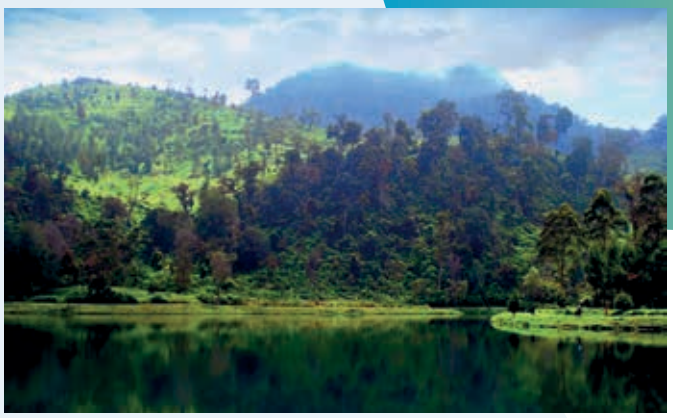
Strategic Water Resources Management in Citarum River Basin (Indonesia)

Indonesia ranks as the world's third richest country in renewable water resources, with a supply of approximately 3,906 billion m^3 of freshwater. The per capita availability of freshwater in Indonesia surpasses the global threshold. Effective government management of this resource could significantly enhance sustainable development opportunities.

The Citarum River Basin, located in West Java and spanning 11,323 km^2, plays a significant role in supplying bulk water to Jakarta and West Java. It supports irrigation over 420,000 hectares and contributes to energy resilience and flood control through the three cascade reservoirs (Saguling, Cirata, and Jatiluhur).

The river basin faces complex challenges from upstream to downstream. It includes water pollution caused by various waste sources, such as agriculture, industry, domestic, fishery, and sedimentation, with the Metropolitan Bandung generating around 6,000 tons of solid waste per day, critical land in the upstream Citarum River Basin of approximatively 77,000 hectares, and annual flooding in the northern part of West Java and Bandung Regency, covering around 11,750 hectares. Additionally, a lack of education and law enforcement among the population exacerbates these issues.

In response to these challenges, the President of Indonesia has pledged to rehabilitate the Citarum River Basin, starting with improvements and revitalization from upstream to downstream.



Cisanti Lake, the source of the Citarum River Basin. © Perum Jasa Tirta II

Furthermore, the implementation of Integrated Water Resources Management (IWRM) through the Citarum Pentahelix concept involves five sectors: academic, community, government, media, river basin organisations, and private sectors. It holds significant potential to provide solutions based on their respective domains, including knowledge, social, political, communication, and future strategic development. The Citarum Pentahelix concept must be included and the sectors should support each other, to build a fragrant, clean, healthy, and sustainable Citarum.

Dr Imam SANTOSO,
Chairman of the Network of Asian River Basin Organizations (NARBO)

DYNOBA: a project to revitalise African transboundary basin organisations to improve water resource management in a context of climate change

The aim of this three-year project (2023-2025), led by the International Office for Water (OiEau) and financed by the French Development Agency (AFD), is to build the capacities of Transboundary Basin Organisations (TBOs) in the pillars of IWRM and to share experiences for better management of water resources at the level of river basins.

The beneficiaries of this project are the Niger Basin Authority (NBA), the Volta Basin Authority (VBA), the Lake Chad Basin Commission (LCBC), the Nile Basin Initiative (NBI), the Organisation for the Development of the Gambia River (OMVG) and the Organisation for the Development of the Senegal River (OMVS). This list is not exhaustive and is subject to change. The African Network of Basin Organisations (ANBO) is also a key player in the project, as leader of component 4 dedicated to sharing experience and a stakeholder in the other three components.

The activities are being implemented through partnerships and/or services involving consultancies, NGOs and research institutions, including the French National Center of Space Studies (CNES) and the Development Research Institute (IRD) in the case of space activities.

The project has four main components:

- Improving OBT governance, its institutional organisation and the introduction of new autonomous and sustainable funding mechanisms.
- Strengthening water information systems, the use and dissemination of their products, and the development of decision-making tools.
- Support for the strategic planning of measures and actions to improve the management of river basins, as well as the programming and management of cross-border infrastructure and facilities, including those to preserve ecosystems.
- The promotion of new ways of sharing experiences and exchanges between the TBOs and ANBO.

During 2023, the team in charge of the project within OiEau set up the operating conditions of the project with the beneficiaries and partners: signature of agreements, award of a framework agreement with subsequent contracts, development of a communication strategy, etc. At the end of the year, the first contracts will be awarded. At the end of the year, the first contracts were launched. They concern the preservation of the headwaters of the Fouta Djalon Massif in Guinea and the installation of hydrometric stations in the territory of four TBOs.

Dr. Amadou Lamine NDIAYE,
Secretary General, High Commission for the OMVS

Mélanie FAYET,
Project Manager at the International Office for Water (OiEau)

"This project is crucial to achieving the SDGs, particularly SDG 6.5, which gives priority to water issues. It fits in perfectly with the conclusions of the water conference held in New York in March 2023, which recommended speeding up the implementation of the Water Decade Agenda.

The DYNOBA project is a catalyst that will bring real added value to African basin organisations on the way to the next World Water Forum in Bali in 2024."

Mr Mohamed ABDEL VETAH
ANBO Permanent Technical Secretary, OMVS High Commissioner

GOVERNANCE

River basins, essential for the future of water

Year after year, basin organisations are being set up in more and more countries. And where they exist, they are taking on a more important role in drawing up and monitoring public water policies. In addition, transboundary basins are playing a major role in day-to-day hydrodiplomacy.

River basins, be they regional, national or international, are no longer just administrative and technical entities; they are gradually becoming entities with an asserted political, economic and societal role(s).

The most recent gatherings in recent months, in Fez in July, Beijing in September, Bali and Valencia in October, have demonstrated the central position of the basin concept in securing water resources, in their financing and in their governance.

Faced with climate change and demographic concentrations that generate poverty and despair, water basins are in the front line in establishing a new balance between water for humans and water for nature.

The river basin is the primary receptacle for Nature-based Solutions. It is concerned by the main issues that are affecting the hydrosphere: freshwater reserves, the relationship with the production of green (or blue) hydrogen, the urban/rural relationship, the water needed for food production, powers between decentralisation and deconcentration, and disaster prevention.

There is no doubt that water basins are gradually acquiring their letters of nobility. In Bali in May 2024, and afterwards, the basin authorities will be talking to heads of state, parliamentarians, ministerial bodies and local elected representatives. They are stakeholders in the future of water, and we are pleased and proud to be helping to give them their rightful place in the water family.

Mr Loïc FAUCHON
President of the World Water Council

"For a country with the territorial and climatic diversity of Chile, it is essential to work on water security and SDG 6 at the basin level. For this reason, we want to advance in three main complementary lines:

1 Develop and implement strategic plans for water resources in basins.

2 Prepare a bill that creates the Basin Councils, as an essential component of the water management system. A transformative action that we have initiated by changing the way in which public policy has historically been developed, moving from a top-down approach to a bottom-up one, through the integration of territorial actors in the co-creation of its governance model.

3 Strengthen the work and agreements reached in the context of the Additional Specific Protocol on Shared Water Resources, promote new agreements in line with indicator 6.5.2 of the SDGs and continue collaborating as part of the Transboundary Water Cooperation Coalition."

Ms Maisa ROJAS,
Minister of the Environment, Chile, during a plenary session at the UN Water Conference 2023

Relaunch of the “UMJAE and STRATEAU” project

A new chapter in participatory water management in the Mediterranean region

The Water Embassy (AdE) has announced the relaunch of the “UMJAE and STRATEAU” project, an innovative initiative to promote Integrated Water Resources Management (IWRM) in the Mediterranean region. This relaunch is accompanied by an unprecedented cultural dimension, aimed at raising awareness among citizens in Arabic-speaking countries of the need to protect water and share it equitably.

Founded in 2006, the AdE is active in two main areas: youth, represented by the Mediterranean Union of Young Water Ambassadors (UMJAE), and the promotion of good water governance through the STRATEAU decision-making tool. STRATEAU is designed to provide a prior overview of the issues relating to water supply and demand, and is becoming a major tool in the preservation of water resources, thanks to the new version developed by the Centre for Studies and Expertise on Risks, the Environment, Mobility and Urban Planning (CEREMA).

In the short term, STRATEAU will incorporate economic and employment criteria, making it easier to decide on a regional water strategy. The aim? To be the leading tool for regional planning, promoting consultation and economic, social and environmental development in harmony with water constraints.

The UMJAE and STRATEAU project is taking on a new cultural dimension by bringing together Arabic-speaking countries around language, local beliefs and ancestral methods for sharing and protecting water. A specific cooperation agreement has been signed with the Faculty of Science in Rabat (Morocco), paving the way for the first Arab Water Summit.

The next steps include running the STRATEAU users' and developers' club, training courses for data collection, and involving the Young Water Ambassadors in the project. The UMJAE will continue to train new ambassadors, organise training sessions and strengthen its partnership with existing university networks.

Strengthening local water governance in Norway through Catchment Coordinators

In a move to bolster local water governance in Norway, Catchments Coordinators (CCs) were implemented across the country. Rooted in successful precedents in a few selected catchments prior to the Water Framework Directive (WFD), this approach, supported by local water boards, has now been extended to nearly 100 catchments, thanks to a collaborative financing from national, regional, and local authorities.

The catchments in Norway are inter-municipal, connecting various stakeholders around shared water issues and interests.

Municipalities, as key authorities, are responsible for the management of drinking water and wastewater, surface water runoff, impacts from agriculture, land use management in and along the watercourses, as well as smaller pollution issues. It's crucial to better secure and facilitate public participation at the local level, where people feel a sense of belonging and responsibility to their local rivers and lakes.

With this new catchment-based approach now introduced in almost all of Norway, CCs serve as shared resources and experts, assisting municipalities in fulfilling their water management responsibilities. Moreover, they actively contribute to public information dissemination, awareness campaigns, and community engagement.

Over half of the CCs are employed full-time, each overseeing 1-3 catchments, depending on the specific challenges and pressures in each area. Funding for CC salaries is a collaborative effort, with the central government contributing approximately 2 million euros annually. The remaining 4-6 million euros are shouldered by regional and local authorities, demonstrating a commitment to the collective goal of effective water governance.

A critical success factor in this initiative is the emphasis on continuity among CCs. Recognizing the need for permanent positions, it is imperative to secure consistent and predictable funding. While progress has been made, with an increasing number of permanently employed CCs, the system is not yet fully implemented across all catchments.

In conclusion, this approach shows how local support is a key to good river basin management plans. Local participation allows for the use of local and experience-based knowledge and the development of environmental measures adopted to the local context. Local “ownership” in the municipalities and population gives credibility to the plans and loyalty to their implementation.

Anders IVERSEN,
National Water Coordinator for the National Environment Agency, Norway

Catchment coordinator addressing politicians from the Oslo fjord catchment.
© Lars Kristian Selbekk

TO FIND OUT MORE

https://bit.ly/47oO0xU

https://bit.ly/3RIFfJ4

https://bit.ly/3tSe86l

Finland: the Watershed vision 2035 for the catchment of the Oulujoki river system

In Finland, recent water vision projects have varied in content and scope, Oulujoki watershed project (2021-2023), funded by the European Regional Development Fund, being the most extensive geographically and thematically. Covering an area of 22,841 km^2, the Oulujoki water course is vital for hydropower production but has negatively impacted fish stocks and aquatic ecosystems.

The watershed vision project, conducted collaboratively with regional stakeholders, seeked to integrate water management, hydropower, fisheries, land use, and economic interests by 2035, recognising the need to bridge past isolation in regional strategies. It was part of the broader ARVOVESI project which was carried out in collaboration with the University of Oulu, Finnish Environment Institute (Syke), and the Natural Resources Institute (Luke).

The project employed a co-creation approach, utilising the latest research data to reconcile watershed-related goals. In the structured goal-oriented approach over 100 stakeholders engaged in more than 20 advisory boards and working group meetings, resulting in five sub-areas:

- waters and biodiversity;
- fish stocks and fishing;
- recreation and nature tourism;
- hydropower and climate goals;
- settlements, livelihoods, and attraction.

Each sub-area had three to five goals and proposed measures, totalling over sixty measures for the vision.

Addressing polarised views on hydropower and fish migration posed a significant challenge, resulting in some parties withdrawing from the final outcome. The broad thematic and regional scope added to the complexity. The difficulty in reaching a consensus was further compounded by differing interpretations of the Water Framework Directive with regard to the objectives for migratory fish in heavily modified water bodies. Future vision projects should emphasise constructive dialogue, and the application of systematic problem structuring methods could prove beneficial. Nonetheless, the vision work provides a solid foundation for subsequent projects and the identification of measures, including innovative approaches like water stewardship by companies.

Mika MARTTUNEN,
Group Leader at the Finnish Environment Institute

FAO: Integrated governance of inland fisheries at basin level

Inland fisheries produce around 12 million tons of fish per year. Integrating inland fisheries into basin governance is crucial for the nutrition, food security, and livelihoods of millions of people around the world.

To address this issue, the Food and Agriculture Organization (FAO), in cooperation with the Lake Victoria Fisheries Organization (LFVO) and the Lake Victoria Basin Commission (LVBC), organized the First global workshop between Regional Fishery Bodies (RFBs) and Basin Management Organizations (BMOs) for scaling up cooperation towards sustainable inland fisheries in the context of food security and nutrition (6-8 December 2023, Entebbe, Uganda).

INBO and the African Network of Basin Organizations (ANBO) participated in the event, alongside representatives from the Lake Tanganyika Authority, the Nile Basin Initiative, the Amazon Cooperation Treaty Organization and FAO Regional Fisheries Bodies.

Three divisions of FAO were represented (Fisheries and Aquaculture, Forestry, Land and Water). This institutional effort to break silos is inspired by the adoption of "Integrated Water Resources Management" as the topic for General Debate of the 43rd Session of the FAO Conference and as the biennial theme for the FAO Governing Body sessions in 2024-2025.

The primary threat to inland fisheries is a combination of environmental changes, deforestation, agricultural expansion and poorly designed hydraulic infrastructure development. For example, in the Komadugu Yobe Basin in the North-East of Nigeria, a combination of dam development in the 1970s, extensive water extraction for irrigation and the impacts of regional climate change altered seasonal river flows. This affected fishing, farming, and pastoralist livelihoods, and led to conflicts. A management plan was used to address degraded ecosystems, restore river flow patterns, and reduce tensions among basin users.

There is a need for a more holistic approach at basin level to meet such challenges.

At the end, the workshop participants requested FAO to lead the continuation of joint activities including setting up common governing mechanisms and identification of regional pilot basins, with the objective to produce a stronger coordination framework between RFBs and BMOs .

This collaborative approach signifies a commitment to coordinated efforts for the effective integration of inland fisheries into broader basin management initiatives.

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"Restoration of lake and wetland ecosystems is our key priority to address challenges such as flooding, loss of livelihoods, food insecurity, and water pollution."

Ms Hellen ADOA
Uganda's Minister of State for Fisheries

TO FIND OUT MORE

https://bit.ly/3vB82rI

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Welcoming five new Parties to the Water Convention in 2023

In a significant development for international water cooperation, five countries have joined the Water Convention – Iraq, Namibia, Nigeria, Panama and the Gambia – in 2023. This brings the total number of Parties to the Water Convention to 52. In addition, more than 20 are in the process of accession. By agreeing to the Water Convention, countries commit to key rules and principles which ensure the sustainable management of water resources and pave the way to peaceful cooperation on shared waters.

The Water Convention strengthened the capacities of water experts involved in transboundary water cooperation and supported the accession processes to the Convention, specifically through conducting eight national and regional workshops around the world - from Gaborone, Botswana, to Montevideo, Uruguay.

The Water Convention supported cross-border cooperation over water resources worldwide

The Water Convention supported transboundary water cooperation processes among others on the Senegalese-Mauritanian Aquifer Basin, in Western Africa, in Central America, on the Prut River (shared between Moldova, Ukraine, Romania), on the Dniester River (shared between Ukraine and Moldova) and other transboundary basins.

Throughout the year, global workshops brought together more than a thousand policymakers and key water actors around topics such as development of agreements for transboundary water cooperation, financing of transboundary water cooperation, conjunctive water management of surface and groundwaters and the Water-Food-Energy-Ecosystems Nexus.

UN 2023 Water Conference: uniting the world for water

The long-awaited UN 2023 Water Conference, held in New York, in March 2023, brought together over 9,000 participants and resulted in the Water Action Agenda. The Water Convention played an important role in this event, by preparing one of the thematic discussions (interactive dialogue 4 "Water for Cooperation"), together with UNESCO. Great recognition of the importance of transboundary water cooperation has been given during the Conference, with more than 70 countries mentioning it during their plenary statements and more than 20 countries referring to the Water Convention. Numerous commitments on transboundary cooperation have been submitted to the Water Action Agenda, facilitated by the Transboundary Water Cooperation Coalition. In the run-up to the UN 2023 Water Conference, the Transboundary Water Cooperation Coalition was launched to promote and support both the sustaining and the advancement of transboundary water cooperation in the context of the Water Action Agenda and the Sustainable Development Goal (SDG) 6, related to water and sanitation.

At the 28th session of the Conference of the Parties (COP28) to the UN Framework Convention on Climate Change (UNFCCC), the Water Convention co-organized several events to highlight how transboundary water cooperation serves to mitigate climate change. The conference concluded with strong wording on transboundary cooperation in the outcome documents.

The 2024 session of the Meeting of the Parties to the Water Convention is scheduled for 23-25 October in Ljubljana, Slovenia. This high-level meeting will be a crucial opportunity to collectively define the future trajectory of the Water Convention.

TO FIND OUT MORE

https://bit.ly/3RRshsE

UNECE-INBO Partnership in favour of cross-border cooperation on water

Water resource management is a major issue for Europe, a region with the largest number of cross-border river basins in the world. Around 40% of the pan-European region, including the Balkans, the Caucasus and Central Asia, lies in transboundary basins. Many European countries rely heavily on cross-border water from their neighbours, receiving more than 50% or even 70% of their water in this way. Cross-border cooperation on water is therefore very important for the countries in the region.

The United Nations Economic Commission for Europe (UNECE) plays a crucial role in promoting cross-border cooperation on water, notably through the United Nations Convention on the Protection and Use of Transboundary Watercourses and International Lakes. It stands as the only United Nations legal and institutional framework for the promotion of transboundary water cooperation, conflict prevention and regional integration through water cooperation.

Institutions are fundamental to the sustainable and appropriate management of cross-border water resources. In particular, the existence of joint institutions, what the convention calls joint bodies or river basin organisations, which ensure genuine dialogue, exchange of information and appropriate planning of water resources.

UNECE and the International Network of Basin Organizations (INBO) have a strong history of cooperation going back more than a decade. Together, they have created a Global network of river basins working on adaptation to climate change (GNBCC). This network promotes the exchange of good practices and brings together the main transboundary river basins that have started to work on adaptation strategies, vulnerability assessments and the implementation of measures at basin level to adapt to climate change.

Another area of work is improving governance and legislation. Under the Water Convention, numerous soft law instruments and guidelines have been developed. For example, the Convention has developed model provisions on transboundary groundwater, which help countries sharing transboundary aquifers to develop common rules.

As a follow-up, the Transboundary Water Cooperation Coalition was launched in December 2022, formed by a diverse, multi-stakeholder coalition of actors made up of 40 countries, regional integration and international organisations, international financial institutions, NGOs, academic and research centres. It aims to strengthen commitment to transboundary water cooperation and encourage concrete commitments.

Transboundary Water Cooperation Coalition

FUNDING

Setting up integrated water resources management is always the result of a process that takes time and requires legal, institutional and organisational reforms.

One major difficulty is the need for funding.

On the one hand, we need funding for governance, because implementing a public water policy involves certain expenses, to allow:

- institutions to operate, including any basin organisations ;
- monitoring, simulation, hydrological forecasting, an understanding of basins in general, particularly through basin Observatories;
- the process of drawing up planning documents; etc.

On the other hand, we need funding for studies and investment in basins.

Therefore, it is crucial to plan and organise the funding of these two aspects. Traditional public funding is more and more limited. So, it is often a good idea to seek alternative, more independent funding mechanisms, – both in relation to national finances and international aid – and more sustainable funding.

The lack of sustainable funding is a major obstacle to effective transboundary water cooperation. The Global workshop on Funding and Financing Transboundary Water Cooperation and Basin Development, which took place in December 2023, highlighted the importance of exploring these new sources of funding, including private finance, climate finance, and hybrid funding mechanisms. These mechanisms can help to de-risk projects and attract investment, making it possible to finance sustainable transboundary water management initiatives.

The projects carried out by INBO members make it possible to explore these alternatives, such as climate finance, the support of private operators, and the targeted modulation of water agency fees.

“Costa Rica promotes Integrated Water Resources Management (IWRM), so that the water cycle - in basins, sub-basins or aquifers - is managed as a single system.

To this end, the implementation of indicator 6.5.1 is vital.

Through the taxes paid by each Costa Rican citizen and company, the State collects more than $18 million that not only allows us to encourage changes in behavior, but also to invest in Integrated Water Resources Management and contribute to the maintenance and monitoring of the health of our aquifers.”

Ms Maritza CHAN VALVERD,
Ambassador and Permanent Representative of Costa Rica at the United Nations Water Conference, New-York, 24 March 2023

TO FIND OUT MORE

Handbook on Financing Adaptation to Climate Change in Transboundary Basins

The International Fund for saving the Aral Sea: 30 years of the regional cooperation

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The Central Asian countries share two great rivers – the Amu Darya and the Syr Darya – that have long since served as a life blood for this region. However, drying up of the Aral Sea has adversely affected the lives of the population in the region. Growing water scarcity and deterioration of water quality have led to degradation of soil and vegetation, catastrophic changes in flora and fauna, decline in processing fisheries, and underperformance of irrigated agriculture.

In this context, the five Central Asian states have established the International Fund for saving the Aral Sea (IFAS) to halt and mitigate consequences of the disaster. Since formation, the IFAS has proven itself as a unique platform for regional cooperation in sharing transboundary water and addressing environmental and socio-economic problems in the Aral Sea basin and become even more important given the emerging challenges that the region faces in light of climate change.

The IFAS celebrated its 30-year jubilee in 2023. A series of events was organised in the course of the year to re-attract attention of the world community to the region. The major of them was the International Conference "Central Asia: towards sustainable future through strong regional institution" held in Dushanbe, Tajikistan on 5-7 June. The Conference brought together high ranking officials, policy-makers, experts, and enthusiasts from the IFAS member-states and other regions to reflect on the past accomplishments, provide insight into current streams of cooperation and develop an agenda for the future vision through the four interactive dialogue sessions, side and special events.

Galustyan A.G., Ph.D, Usmanova O.K.
Scientific Information Center of the Interstate Commission for Water Coordination (SIC ICWC)

COP28: financing adaptation to climate change

On the occasion of the United Nations Climate Change Conference (COP28), which took place in Dubai from 30 November to 12 December 2023, the International Network of Basin Organisations (INBO) organised and participated in various events on financing adaptation to climate change: On the French Pavilion (dialogue between donors, companies and basins), on the Water Pavilion (for the transformation of climate change financing), and an official United Nations Framework Convention on Climate Change event illustrating the path from project incubation to financing.

TO FIND OUT MORE

https://bit.ly/3O1svMF

"For the OMVS, the mobilisation of funding targets a wide range of donors, some of whom have pledged to support the initiative since the start of the process of drawing up the document. The support of regional and multilateral partners is also being sought. Ultimately, the OMVS Climate Investment Plan (CIP) to 2033 brings together the adaptation measures planned for the Senegal River Basin, and is consistent and compatible with the various national and regional initiatives relating to adaptation to climate change. As such, it is a tool for mobilising sources of financing for adaptation, and in particular funds dedicated to the climate."

Dr Ababakar MBAYE
Doctor of Environmental Sciences (specialising in water and sanitation), Director of Environment and Sustainable Development, Organisation for the Development of the Senegal River (OMVS), Permanent Technical Secretariat of the African Network of Basin Organisations (ANBO)

"Financing adaptation is a key and urgent issue for both developed and developing countries. Adaptation requires the mobilisation of all private/public/donor stakeholders."

Ms Mathilde BORD-LAURENS
Head of the Climate and Nature Division, French Development Agency (AFD)

"Financial mechanisms should be made more flexible in order to facilitate countries' access to climate financing for the implementation of their action plans and programmes."

Mr Nabil BEN KHATRA
Executive Secretary of the Sahara and Sahel Observatory (OSS)

Financing of hydraulic works in Spain: a brief historical review

© CHJ

In order to understand the system for financing water works in Spain, it is necessary to know the history of water policy over the last two centuries and the particularities of Spanish hydrology and hydrography.

The distribution of water resources in Spain is very irregular due to differences in rainfall patterns throughout the territory. In general, the north of Spain enjoys abundant precipitation of water and snow, which makes the river regime similar to that of European rivers: moderate flows in winter and more abundant flows in spring and even in summer as a result of snowmelt. However, in practically the rest of Spain rainfall is much lower, with an average of less than 500 mm/year, and without significant snowfall, so that the Spanish Mediterranean and Atlantic rivers suffer a strong reduction in flow in summer.

With these rainfall values, it is easy to understand that rain-fed agriculture, which in Spain we call "rain-fed", does not allow the development of many crops. For all these reasons, bearing in mind that the greatest crop needs are in summer, when potential evapotranspiration is greatest, coinciding with the lower availability of water in the rivers, the cultivation of the most water-demanding agricultural products, such as vegetables, citrus fruits and rice, has traditionally taken place along the riverbanks in Spain, with little space being cultivated in irrigated areas.

In order to increase agricultural production through irrigation it was necessary to carry out important hydraulic works, firstly, dams to allow the regulation of the rivers and reverse the natural regime, so that water could be stored during the autumn and winter to be available during the irrigation season, spring and summer. Secondly, it was necessary to build canals and pipes to transport water from the reservoirs to new areas where irrigation was expanded.

The liberal economic tradition that developed as a consequence of the industrial revolution and the French revolution, meant that in Spain, private initiative had to invest in the execution of hydraulic works. However, throughout the 19th century practically no major work was carried out.

At the end of the 19th century, a movement known as Regenerationism arose in Spain, sponsored by intellectuals who denounced Spain's backwardness with respect to other European countries and proposed a series of measures to "regenerate" the country, that is, to promote economic development and raise the standard of living of the Spanish people. One of the pillars of this development had to be the promotion of water policy, a water policy in which the State would act as the promoter of works to develop irrigated agriculture to satisfy national needs and also to direct it towards exports.

Even though the public authorities tried to encourage companies and individuals to carry out hydraulic works, except for hydroelectric production, there were practically no private initiatives to undertake the construction of canals or dams, despite the significant subsidies that increased in amount with successive legislative changes, with no response from private individuals.

The conservative spirit of the "dry land" farmers, accustomed to poor harvests as a result of recurrent droughts, together with the low profitability of agricultural activity, were the main reasons for the lack of private initiatives in the construction of hydraulic works.

In the 20th century, the State took the initiative in the construction of dams and canals. The first Spanish waterworks plan dates back to 1902. This plan was followed by several addenda and modifications and in 1933 a new Water Works Plan was drawn up with a more comprehensive character, which included a multitude of regulation dams, distribution canals and even water transfers between different river basins, especially on the Mediterranean side, as it had a better climate but less water.

As a result of all this history, the financing system for hydraulic works in Spain is a system heavily subsidised by the State in which users pay 4% per year of the investment to be amortised over a period of 25 years, which is equivalent to the payment of just over 50% of the investment over these 25 years, without interest.

This public system of construction and financing of hydraulic works is justified by the fact that, in addition to the recovery of the investment made with the direct payment by users in the form of this annual rate of 4%, the State ends up obtaining a significant benefit, much higher than the initial investment, as a result of the returns produced in the form of direct and indirect taxes and other indirect contributions by other sectors, by promoting economic, agricultural and industrial activity with the hydraulic works.

Miguel POLO,
President of the Júcar Hydrographic Confederation, Permanent Technical Secretary of Mediterranean Network of Basin Organisations (MENBO)

Austria: investment in water management

In order to secure access to drinking water and river basin management, the Austrian government has proceeded to consequent investments. These efforts are guided by a clear strategy that aims to achieve integrated and sustainable water management practices.

One of the primary goals of water management in Austria is to ensure the safety and availability of drinking water for its population. Despite benefiting from abundant groundwater sources, which provide 100% of the drinking water needs for its 9 million inhabitants and tourists, Austria is investing to maintain and enhance the quality of its drinking water resources.

A key component of Austria's water investment strategy is training and technology. Every year, around 3,000 individuals receive training in the water sector, with a focus on drinking water supply and wastewater treatment. In addition, the government has developed a comprehensive drinking water safety plan, in collaboration with the country's nine federal states.

Austria is committed to restoring the ecological health of its rivers. In recent years, the government has allocated additional funding, estimated at around 200 million euros, to support river restoration projects. These efforts are conducted in close collaboration with landowners, scientists, and environmental organisations, ensuring a holistic approach to river rehabilitation.

As part of a multitude of Life projects, Austria is working with partners in the European Union (EU) to tackle water-related challenges. Working closely with its neighbours, the country actively exchanges knowledge and best practices to improve water management strategies. For example, the LIFE RESTORE for Mura-Drava-Danube project started in October 2023 with a 20 million euros budget, and focuses on supporting ecological systems in the Danube basin.

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Günter LIEBEL,
Secretary General of the Federal Ministry of Agriculture, Forestry, Regions and Water Management, Austria (October 2023)

Incubator for Water & Climate projects: an incubation platform to adapt river basin management to climate change

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To meet the challenges posed by the effects of climate change, an incubation platform for water and climate projects was launched at the United Nations Climate Change Conference in Marrakech (COP22, 2016). This initiative aims to mobilise the tools of Integrated Water Resources Management (IWRM) at basin level in terms of adapting to climate change and accelerate funding to bring a greater number of ambitious and innovative projects to fruition.

Initially focused on climate change adaptation projects in Africa, this incubator evolved into a Water and Climate Project Incubator in 2023, now supporting the development of projects worldwide. Its activities include:

- identifying new climate change adaptation projects;
- incubating projects selected from among those identified, by promoting the incubator through physical and digital events and communication campaigns;
- as well as helping to put together dossiers and seek funding.

In this way, INBO seeks out and selects relevant project proposals and mobilises the budget required for incubation. The latter must be modest compared with the implementation budget, with a leverage effect of around 1 to 100, targeting projects from 1 to 10 million euros). INBO also provides technical support to project leaders to help them build their applications in line with the requirements and procedures of climate finance donors.

The projects selected must aim to build capacity and knowledge, adapt basin planning and management to climate change, strengthen governance and ensure adequate funding.

Several contributors, such as the Water Agencies, the French Development Agency, the French Ministry of the Economy, Finance and Recovery, UNESCO, the World Bank and other state and international institutions, have participated in the funding of 54 projects. These initiatives include the strengthening of data sharing in the transboundary Lake Victoria basin, the renovation of the Kura Delta in the Caucasus, and the monitoring and assessment of urban drainage in the Guanabara Bay watershed in Rio, Brazil.

Throughout 2023, physical and digital events have been organised to promote and animate the incubation platform, notably at the 7th meeting of the INBO/UNECE network of pilot basins working on climate change (May 2023), as well as at the 3rd International Conference on Water and Climate (ICWC 3, July 2023) and COP28 (December 2023).

KNOWLEDGE

There have been far-reaching changes in information due to the advent and rapid evolution of new technologies.

This revolution accompanies major challenges: the challenge of collecting, processing and exploiting data; the challenge of sharing and transferring knowledge; the challenge of creating and managing Information Systems and ensuring interoperability with other digital media. And above all, the challenge of creating decision-making tools for the proper governance of water resources and the environment.

To develop water information systems within river basin organisations, it is necessary to improve the monitoring network, stakeholder involvement, integration of multiple data sources (at multiple scales using satellites, in situ sensor networks, automated weather stations and hydrological networks), interoperability and performance and evaluation processes.

An integrated and sustainable information system is one that can adapt to the environment, involve relevant stakeholders and support data collection and dissemination.

INBO, through the actions and projects undertaken by its members, actively supports these transformative initiatives globally, adapting its approach to suit diverse contexts. With a commitment to shared prosperity, INBO fosters the creation of collective intelligence, recognizing its potential to drive enhanced performance and value creation.

"River Basins, in order to support the management of their waters, threatened by climate change and demographic pressure, need consistent, effective and sustainable water information systems based among others on reliable hydrological data, to support water management, threatened by climate change and demographic pressure. Integrated water management based on quality data is key for peaceful water sharing across uses and across borders, allowing mitigation of flood and drought risks, better water supply systems and sustainable ecosystem preservation."

Extract from the Memorandum of Understanding (MoU) between the World Meteorological Organization (WMO) and the International Network of Basin Organizations (INBO)

TO FIND OUT MORE

Handbook on Water Information Systems

Lower Mekong River Basin: comprehensive monitoring of transboundary riverine plastic pollution

Staff from Viet Nam's national line agencies trained in June 2022 to collect riverine macro and microplastic samples in accordance with steps detailed in the respective protocol. © Mekong River Commission

The Mekong River Basin is one of the largest and most biodiverse river basins in the world, spreading over more than 795,000 km^2 and extending over 5,000 km through six different countries and providing a home to more than 70 million people alone in its lower reaches. In a recent study, the Mekong River was named as one of the 10 major contributors to marine plastic pollution.

In the Mekong River Commission (MRC)'s own assessment of the status and trends of plastic waste pollution, the amount of plastic waste produced by its Member Countries (MCs) were estimated to be about 0.3, 0.2, 3.5 and 3.3 million tons per year, respectively for Cambodia, Lao PDR, Thailand, and Viet Nam.

To address the growing concern on the potential effects of plastic debris pollution on freshwater fauna of the Mekong River, the MRC MCs have jointly developed a detailed methodology for a cost-effective and long-term monitoring of transboundary riverine plastic pollution. It aims at generating information and knowledge to support decision-making on the management of riverine plastic pollution in the Lower Mekong River Basin (LMB), including through the conduct of an in-depth analysis of existing methodologies to identify the most suitable one for the region. The chosen approach underwent extensive piloting and consultation at both country and regional levels to ensure its adaptability to the unique situations of the Mekong River.

Following rigorous pilot processes and consultations, three protocols were established: Protocol for Riverine Macroplastic Monitoring, Protocol for Riverine Microplastic Monitoring, and Protocol for Microplastic in Fish Monitoring. This development process not only facilitated the adaptation of the methodology to the Mekong River's context but also fostered ownership among MRC Member Countries, leading to its integration into the existing MRC routine Water Quality Monitoring Network (WQMN) for long-term implementation.

Since finalization in 2022, the MRC is now providing support to the national line agencies of the LMB Countries in building their capacities for sustainable implementation of the finalized protocols. The monitoring of riverine plastic will commence on a routine basis as part of the MRC WQMN and will contribute to the achievement of the MRC Basin Development Strategies for 2021 to 2030 and ultimately the objectives of the 1995 Mekong Agreement.

Mekong River Commission
For Sustainable Development

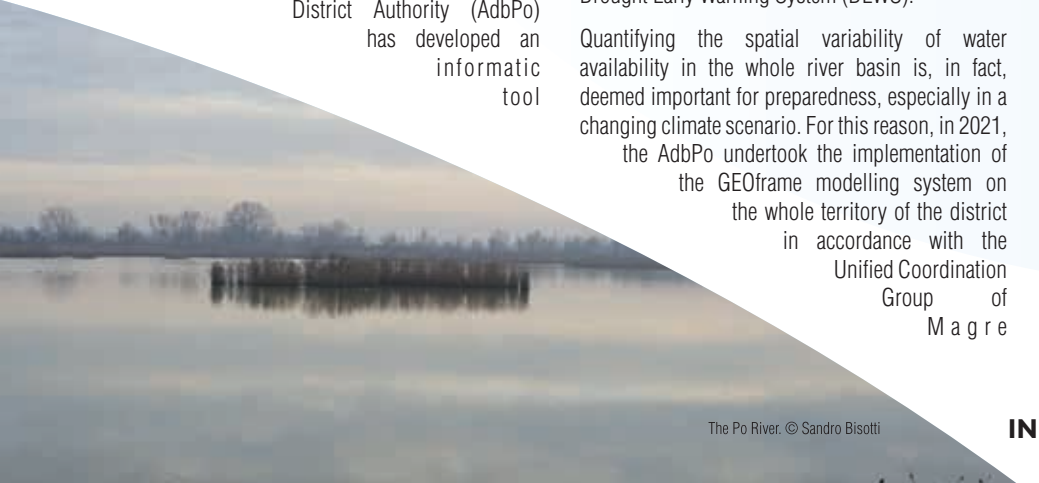
Data in water resource management: the Po river district experience

The Po River District has an extension of approximately 87,000 km², involving eight Italian regions, the Autonomous Province of Trento, and portions of extra-national territories in France, Switzerland, and San Marino. The territory is particularly complex from a geographical, environmental, anthropic, and socio-economic point of view.

Since 2009, the Po River Basin District Authority (AdbPo) has developed an informatic tool to support the planning activities of water resource management: an integrated system for climate, hydrological, and hydraulic simulation, which makes it possible to reproduce the hydrological situation of the district in real-time, and at the same time to construct historical series of the hydrological quantities underlying the water balance. This system is also equipped with tools for forecasting lean or drought conditions and is therefore called Drought Early Warning System (DEWS).

Quantifying the spatial variability of water availability in the whole river basin is, in fact, deemed important for preparedness, especially in a changing climate scenario. For this reason, in 2021, the AdbPo undertook the implementation of the GEOframe modelling system on the whole territory of the district in accordance with the Unified Coordination Group of Magre (GCU-M) to update the existing numerical; for water resource management. This is a completely open-source, semi-distributed conceptual hydrological modelling system, developed by the University of Trento and characterised by high flexibility and modularity.

This modelling system enables the simulation of all the water balance components across the whole district. Besides, the water balance situation can be defined by means of quantitative indicators, useful to identify existing and potential criticalities of water availability, namely modifications of the natural volume regime (in the case of groundwater) or of runoff (in the case of surface water) of the water body, incompatible with rational, sustainable, and supportive water uses.



The Po River. © Sandro Bisotti

“Open river for all functions!”: a European national river continuity restoration policies review

River continuity is important for fish migration, but should also include other river functions, such as maintenance of food webs, transport of sediments and nutrients, and hydro-morphological processes. European rivers face significant fragmentation, necessitating effective restoration measures. They encompass the construction of fish passes, natural by passes, dam removal, barrier reduction, and the implementation of adaptive ecological or environmental flow management. National policies should enable, enhance and enforce river continuity restoration.

To comprehensively evaluate the river continuity restoration policies of European nations, a review was conducted for Austria, Finland, France, Germany, Lithuania, Norway, Slovakia, and Spain. The main goal was to identify similarities and differences as well as the completeness and the effectiveness of the single policies. The conclusion of the study underscores that the development of a general policy framework alone would not coercively enhance the river continuity restoration process. Additional conclusions were:

- River continuity is always part of a general water law, but a barrier database is often missing.
- River continuity restoration needs to be (more) integrated in other (sector) policies.
- Goals for restoration are general and only sometimes special for continuity restoration.
- Prioritisation by highest ecological impact is popular, but there is also a lack of knowledge.
- Implementation is mainly driven by fish migration and birds and habitat directive.
- Monitoring and evaluation of the policy and the restoration projects is hardly done.

These findings suggest that the national policies are not yet suitable for the implementation of the Biodiversity Strategy under the Nature Restoration Law with a binding target of 25,000 km free-flowing rivers. To address this gap, national governments should support the existing processes within their countries, mostly bottom-up processes, to achieve an accelerated and improved development and implementation of their river continuity policy.

Bart FOKKENS,
Associate Expert for the European Center for River Restoration (ECRR)

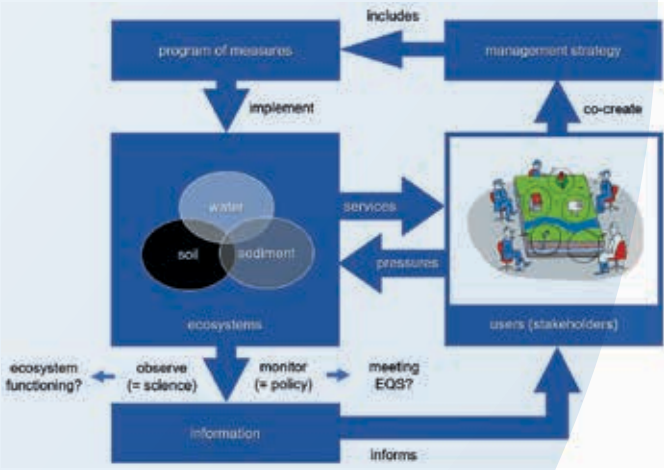
Soil-sediment-water ecosystems management at river-sea scale

The scientific paper “A conceptual model for enabling sustainable management of soil-sediment-water ecosystems in support of European policy” addresses the health of soil-sediment-water ecosystems which are under pressure from economic activities and a changing climate. This situation is damaging the health and is hampering the service provision capacity of these ecosystems and thus impacts human well-being.

Protecting and, where feasible, restoring of ecosystem health has now become the key European environmental policy objective and, to achieve this, it is needed to take an entire system approach and engage stakeholders. “Entire” means that soil, sediment and water are regarded as closely interlinked environmental matrices that need to be managed by taking a “river (or mountain) to sea” perspective, crossing spatial, discipline, political and cultural boundaries at basin level. This paper presents a conceptual model to support that purpose. Essentially, the conceptual model presents an approach for ecosystem-based management aimed to achieve healthy ecosystems, i.e. soil-sediment-water ecosystems that have the continued capacity to support ecosystem services to the benefit of their users.

The model proposes a cyclic (iterative, learning-by-doing) approach and integrates soil-sediment-water, ecosystems, ecosystem services, users (stakeholders), pressures, information, management strategy and program of measures as building blocks. To successfully apply this model, it is above all needed to take an entrepreneurial approach, i.e. leave comfort zones, take an adventurous road, learn together to manage together, be adaptive and consider other than only command-and-control solutions.

Furthermore, authorities should become facilitative leaders to engage users in co-creation of an ecosystem-based management strategy. Real live and place-based experimenting with multiple stakeholders, such as in the Living Labs and Lighthouses that are proposed in the European Union (UE) soil mission, may provide an ideal instrument for such application, i.e. where the conceptual model can be used and support the achievement of European environmental policy objectives.



Conceptual model for ecosystem-based management. © Deltares

Jos BRILS,
Expert adviser at Deltares

TO FIND OUT MORE

https://bit.ly/4aP3KwQ

Two years on..., a review of technical cooperation in integrated water management in Bolivia

Since 2015, the Bolivian Ministry of Environment and Water (MMAyA) has been a major partner of the French Development Agency (AFD). Several investment and technical cooperation projects have been worked on jointly, such as the project to support integrated water management policies in Bolivia, which aimed to accompany the MMAyA on four main themes: Integrated Water Resources Management (IWRM) at the national policy level and its implementation at the basin level; wastewater management in the context of IWRM; water information systems; capacity building through exchanges of experience and strategic studies. The AFD asked the International Office for Water (OiEau) to be the project's implementing partner because of its extensive experience in supporting French and international public stakeholders in moving towards integrated, sustainable and innovative water management.

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As the project comes to an end, it is important to highlight some of the results of this cooperation and the challenges that remain for the future, on two themes in particular.

First, the project contributed greatly to the reflection on inter-scale articulation and the roles of basin platforms in implementing central level planning tools. While there is sectoral planning at the national level (Plurinational Water Resources Plan) that promotes the elaboration of local planning tools (such as Basin Master Plans), the challenge is their implementation. The role of local stakeholders is key to this, and the big challenge that remains is the legitimisation of the roles of the basin management units and their platforms.

Secondly, the Bolivian partners appreciated that the project has promoted a basin approach and inter-institutional work on sanitation, in order to achieve a global and common vision on the issue. A successful example of this approach was the implementation of a pilot of a local and participatory evaluation of sanitation in the Rocha River basin (Cochabamba), where actors from the central level (Authority of Fiscalisation and Social Control of Drinking Water and Basic Sanitation - AAPS, Vice-Ministry of Drinking Water and Basic Sanitation - VAPSB, etc.) and local actors (local entities (water and sanitation authorities, etc.) participated.) and local actors (Drinking Water and Sewerage Service Providers - EPSA, River Basin Management Units - UGC, etc.). This pilot can be replicated in other basins thanks to the local evaluation guide that has been developed with the project.

Thaís VARGAS DÍAZ,
Project Officer, AFD La Paz

Baltic Sea Region: a comprehensive analysis to address water management challenges

The Coalition Clean Baltic's analysis, titled "The Greatest Water Management Challenges in the Baltic Sea Region" (Les E. et all, 2023), comprehensively assesses the current water management situation in eight Baltic Sea countries. This research study focuses on the challenges that individual countries face in terms of integrated water management, describes the status of natural retention, checks how efficient water management planning is and what actions are particularly needed. It emphasises the restoration of natural retention as a solution for current water management problems, employing the Source-to-Sea approach and highlighting the impact of inland waters on the Baltic Sea condition. The analysis aims to support and foster positive changes in integrated water management in the Baltic Sea Region (BSR).

One of the significant conclusions across the BSR is that the existing model of water resources management does not fully address the water problems we experience nowadays. Primary challenges in BSR countries comprise water pollution and eutrophication, hydromorphological pressure and of course funds for river restoration.

The analysis identifies key areas of action, including:

- urgent and massive restoration of the water ecosystems and focus on restoration of natural processes, as well as massive and immediate cessation of drainage of such areas;
- common use of buffer zones in BSR;
- reduction of maintenance on rivers and increase popular use of good practices;
- education of the water administration in terms of nature-based solutions, restoration and good practices in water maintenance;
- strengthened transboundary cooperation.

The need for restoration in the BSR is also expressed in the previous report, "River Barriers to remove or mitigate in the Baltic Sea Region", which served as the preparatory groundwork for dam removal (restoration) in BSR. It describes identified potential barriers in Baltic Sea river systems in six BSR countries, to be removed or mitigated to support valuable native salmonid populations and healthy rivers.

TO FIND OUT MORE

https://bit.ly/3RKfwkx

https://bit.ly/3GKRtvD

Ewa LES,
Eutrophication Working Area Leader for the Coalition Clean Baltic (CCB)

PLANNING

Ecological planning is at the heart of the transition processes that we must accelerate in our societies and our public policies, in the face of climate disruption and the collapse of biodiversity. Water, the main marker of climate change, belongs to the nation's common heritage; it is the subject of a participatory policy, mobilising all water users, brought together within basin committees.

This is not a new subject for the water agencies and basin committees, which were "invented" by the 1964 Water Act 60 years ago. At its level, every six years the basin committee, with the support of the water agency, undertakes a planning process for the major actions and rules for managing water resources. This planning is embodied in the Water Management Master Plan (Sdage) and the associated programme of measures.

However, in 2023, the Loire-Brittany Basin Committee has decided to go further. It has asked the water agency to initiate a "Loire-Brittany 2050" foresight study. At a time when preparations for the next 2028-2033 cycle of the Water Framework Directive are getting underway, the Basin Committee wanted to take a breather and enrich the forthcoming work on the Sdage and its programme of measures with some forward-looking thinking. The aim is to identify a collective future up to 2050 that will optimise the resilience of the basin's environments and uses.

The first stage, carried out between February and August 2023, involved the production of a "basin atlas". This identified the major trends at work in the basin, in terms of climate, demographics, living environments and governance.

Ten workshops were then organised to bring together the different regions of the wider Loire-Brittany basin. These workshops enabled stakeholders to express their points of view, compare them with those of other users and, ultimately, identify what is "at stake" for their water uses in the light of the major trends.

A final stage is scheduled for the first half of 2024. During a second wave of workshops, local stakeholders will be invited to deepen the forward-looking thinking begun at the end of 2023, with the aim of defining a "desirable" 2050 horizon. This third stage should also enable the identification of demonstration projects to illustrate the types of solutions and actions identified.

This approach has been well received by stakeholders in the basin. It enables them to project themselves into an intermediate horizon, which they will have to face. They are then able to identify the levers that need to be activated to achieve this common goal: sobriety / technological innovation / cooperation between regions and users.

In the face of the climate challenge, let's continue this work of co-construction and dialogue between the parties, so that together we can build the future of water in our territories.

Mr Martin GUTTON,
Director General of the Loire-Brittany Water Agency

Sweden: LIFE CONNECTS - Enhancing River Restoration through a holistic approach

An example of river restoration within the LIFE CONNECTS project showing the removal of Marieberg hydropower plant in Mörrumsån. © Uniper

Restoration projects often concentrate on specific objectives. It can be mitigating a migration barrier or restoring a section of a river that has historically been subjected to human alterations such as timber floating or agriculture. However, to get the most out of a river restoration, a holistic view is of great importance.

The EU funded project LIFE CONNECTS employs a holistic view to river restoration in southern Sweden. In targeted rivers, migration barriers are addressed by dismantling or creating fish passages. However, it is not effective to remove migration barriers if the spawning or nursery areas upstream are gone due to human activities. Therefore, we also focus on restoring the river habitats upstream barriers to improve the morphology and hydrology not only to benefit migratory fish species but also to enhance the biodiversity overall.

Long-term financing

In LIFE CONNECTS, long-term EU financing facilitates a holistic perspective, improving the governance, knowledge and planning of water management to enhance aquatic life. It also gives the opportunity to reinforce and supplement the restoration work already underway in the catchment area and gather different stakeholders around a common goal (i.e. catchment approach). For this project, a hydropower company, NGO, county boards, and municipality cooperate to achieve free-flowing rivers and improve the conservation status for habitats and species.

Raising awareness and developing better practices

By working from source to sea, raising awareness of river ecology and related values, we aim to reduce the human altered negative impact on water ecosystems. Considerable effort will be put into educating stakeholders, particularly, school children, about the importance of the values associated with viable aquatic ecosystems.

Adopting a holistic view contributes to achieving the goals outlined in the Water Framework Directive, Habitats directive and other EU directives and strategies, in a more cost-effective and time-efficient manner. By sharing acquired experiences, the member states can learn from each other and further develop best practices.

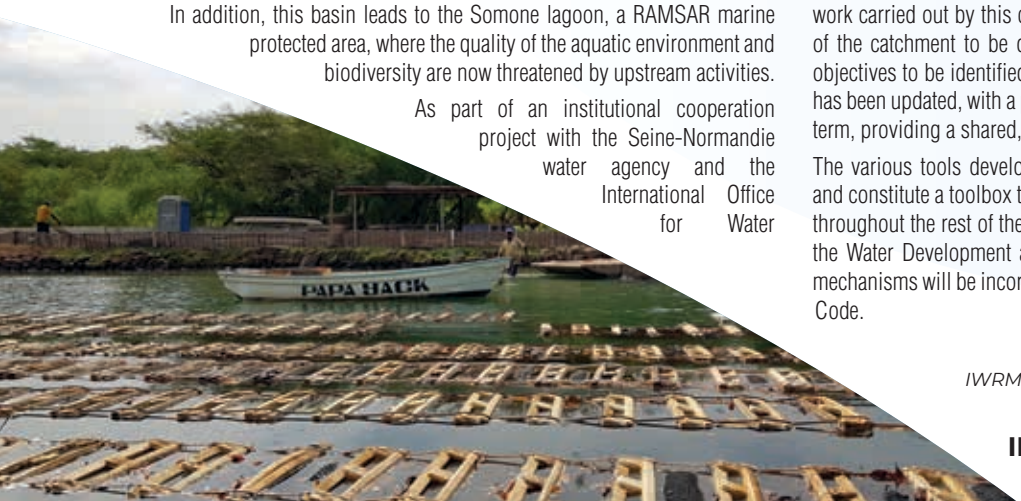
Karin OLSSON,
LIFE CONNECTS Project Manager for the County Administrative Board of Skåne

Somone: a laboratory for IWRM in Senegal

Located at the heart of the Dakar-Thiès-Mbour triangle, a strategic region for Senegal's development, the Somone catchment area is undergoing profound changes that are disrupting land use and increasing pressure on its water resources. The result is growing competition between uses, including drinking water, market gardening, intensive agriculture, the processing industry, the extractive industry and tourist activities.

In addition, this basin leads to the Somone lagoon, a RAMSAR marine protected area, where the quality of the aquatic environment and biodiversity are now threatened by upstream activities.

As part of an institutional cooperation project with the Seine-Normandie water agency and the International Office for Water (OiEau), the Somone Management and Planning Sub-Unit (UGP) was chosen as a pilot basin by Senegal's General Directorate for Water Resources Planning (DGPRE) to test Integrated Water Resources Management (IWRM) mechanisms.



The Water Management and Planning Sub-Committee set up represents a forum for dialogue and solidarity between the various users in the catchment area, who meet regularly under the authority of its chairman, the Governor of Thiès. The work carried out by this committee has enabled a shared diagnosis of the state of the catchment to be drawn up and priority issues associated with general objectives to be identified. As a result, the Sub-UGP's Water Management Plan has been updated, with a prioritised action plan for the short and medium to long term, providing a shared, cross-cutting vision for the basin.

The various tools developed during this project are intended to be replicated and constitute a toolbox to support the DGPRE in setting up IWRM mechanisms throughout the rest of the country, and at different planning scales, in particular the Water Development and Management Schemes (SAGE). Ultimately, these mechanisms will be incorporated into the proposed reform the Senegalese Water Code.

Blaise DHONT,
IWRM Project Manager, International Office for Water

Spain: integral water management in the Ebro hydrographic demarcation

© Ebro Hydrographic Confederation

At the beginning of 2023, the Hydrological Plan of the Ebro River Basin District, a river of 928 km in length, with a catchment area of almost 85,500 km^2, was approved. This plan includes for the first time the so-called "Strategy for integrated sediment management in the Ebro river basin district".

This strategy has several blocks of actions to be carried out by various institutions, including the Directorate General for Water of the Ministry for Ecological Transition and the Demographic Challenge (MITECO) and the Ebro Hydrographic Confederation itself.

Among the actions related to the recovery of sediment mobilisation are:

- Improvement of knowledge, mainly focused on the characterisation of the sediments accumulated in the reservoirs of the lower stretch of the Ebro and already mostly executed.
- Design and execution of pilot extraction tests in the Ribarroja reservoir and implementation of controlled floods to assess the possibilities of sediment mobilisation towards the coast and propose future actions. The first pilot dredging test began on 14 November 2023. These tests will determine which methodology can be most effective and efficient in removing and mobilising retained sediments downstream.
- Creation of a hydrological observatory of the Ebro delta, improving the existing instrumentation and monitoring the possible movement of the deltaic platform. High-precision topographic levelling has recently been carried out in the interior of the delta for this purpose.

In addition to this, the Directorate General for the Coast and the Sea is carrying out a series of actions in the Ebro delta. Inspired by nature-based solutions, these include a new demarcation of the maritime-terrestrial public domain, the creation of protection strips that allow the free movement of the coast or the transfer of sand between coastal areas in the delta itself.

The rise in sea level due to climate change may have serious effects on the Ebro delta in the near future, which requires a coordinated effort from the river and the coast to protect it.

María Dolores PASCUAL VALLÉS,
President of the Ebro Hydrographic Confederation (November 2023)

China: significant Achievements in the Integrated Management and Ecological Restoration of the Yongding River

The Yongding River is an important water resources conservation area, ecological protective barrier, and ecological corridor in the Beijing-Tianjin-Hebei region of China. Since the 1980s, the Yongding River has experienced several problems, including over-exploitation of water resources, severe water pollution, river desiccation, and ecosystem degradation.

In December 2016, the National Development and Reform Commission, the Ministry of Water Resources, and the former National Forestry Administration jointly issued the Overall Plan for Integrated Management and Ecological Restoration of the Yongding River, with the aim of returning the Yongding River to a “flowing river, green river, clean river, and safe river”.

Since the implementation of this plan, the Yongding River is showing obvious results in integrated management and ecological restoration by means of systematic and collaborative governance of upstream and downstream. The green ecological corridor has been initially formed, and ecological functions are gradually recovering.

Multiple water sources of externally transferred water, reclaimed water, and local water are coordinated, and the unified dispatching of upstream and downstream ecological water quantity is strengthened, resulting in the continuous increase of “flowing rivers”. Water flowed all along the Yongding River course to the sea once in 2021, twice in spring and autumn in 2022, and throughout the whole year in 2023.

The systematic management of mountain, water, forest, field, lake, grassland and sand in the Yongding River Basin is promoted, the basin ecological security barrier is gradually stabilized, and the number of wetland bird populations increases year by year. The “green river” is gradually emerging.

The “River and Lake Cleaning Action” and “Illegal occupation, mining, stacking,

© Hai Commission

and construction clearance actions” are continuously carried out, which improves the appearance and environmental quality of rivers and lakes. The effect of “clean river” is obvious.

The compliance rate of the main stream embankment has significantly increased. The successful fighting against the catastrophic flood in the Basin in July 2023 shows that the “Safe River” is steadily advancing.

The construction of the Smart Yongding River is accelerated and an information system for the unified water resources dispatching and management of Yongding River is basically built.

The governments of the four provinces and cities along the Yongding River, including Beijing, Tianjin, Hebei, and Shanxi, have negotiated and introduced a strategic investment company, and jointly invested and established Yongding River Investment Co., Ltd. The law of joint efforts of the government and the market has gradually been explored, and the “Yongding River Sample” for integrated basin management has been first formed.

Kang Jie,
Hai River Water Conservancy Commission

Mexico uses basin management to better guarantee the right to water of the most vulnerable populations and indigenous peoples

Review of progress of the Justice Plan of the Yaqui People. © CONAGUA

The National Water Program 2020-2024 (PNH), which governs national water policy in Mexico and is prepared by the National Water Commission (Conagua), is aimed at solving problems related to the resource, but also at reducing inequity gaps and moving towards water security with a human rights approach that places people at the center of priorities.

The formulation of the PNH 2020-2024 was a participatory process based on integrated water management at the basin level, with particular attention to the needs of the most disadvantaged population throughout the basins into which the national territory is divided.

From this perspective, management is implemented as a public policy approach that pursues the coordinated development and management of water, land and related resources and is aimed at promoting the use of water resources to achieve national economic and social development objectives, under criteria of equity and environmental sustainability.

In accordance with this vision, the first of the five priority objectives of the PNH 2020-2024 focuses on progressively guaranteeing the human rights to water and sanitation, especially for the most vulnerable population. In this sense, the Conagua, in collaboration with other federal government agencies, carries out various actions that focus on benefiting the most vulnerable and respecting the rights of indigenous peoples.

Thus, recognizing their uses and customs, their right to land, to self-determination, to participation, to consultation and to free, prior and informed consent, the federal government established 17 Justice Plans for Indigenous Peoples with the purpose of knowing, recognizing and responding to their main demands and needs, one of them being access to water. Within this framework, the Conagua has been developing various works in the areas of drinking water supply; sanitation infrastructure; rehabilitation, technification and equipping of irrigation districts; and granting of concession titles, mainly.

One example is the Justice Plan for the Yaqui People, in the state of Sonora (north), under which the Yaqui Water Commission was created. This is an emblematic action, as it is the first irrigation district administered by an indigenous people, and a recognition of their responsibility, autonomy and capacity for self-management.

Another example of Mexico's commitment to the less favored population was the granting of concession titles to 16 Zapotec indigenous communities in the Central Valleys of Oaxaca (south), which marks a historic precedent in the recognition of the rights of these peoples and their co-responsibility in the care of water.

Although there is much work to be done, these actions are testimony to the commitment of the Government of Mexico to make the Human Rights to Water and Sanitation a reality, under the premise of “leaving no one out and leaving no one behind”.

CONAGUA
COMISIÓN NACIONAL DEL AGUA

IWRM in Cambodia: from local to national scale

For more than ten years, the International Office for Water (OiEau) has been supporting the Cambodian authorities in implementing Integrated Water Resources Management (IWRM) in Cambodia thanks to an institutional cooperation project funded by the French Rhine-Meuse and Loire-Bretagne water agencies. The publication of a sub-decree on river basin management in 2015 formalised the management of water resources by hydrographic unit, with the creation of a national committee for river basin management, as well as provincial and municipal basin committees.

Through the IWRM project in the Stung Sen pilot basin, a basin committee bringing together inter-institutional stakeholders from two provinces has been set up. Over the years, OiEau has supported this basin committee and its secretariat so that they can play their role with full knowledge of the cross-sectoral issues linked to water resources in the Stung Sen area, which crosses the provinces of Preah Vihear and Kampong Thom.

On the strength of this long-term pilot experience, French Development Agency (AFD) wanted OiEau, through the WAT4CAM (Water for Cambodia) project, to formulate recommendations to improve the implementation of IWRM in Cambodia. For several months, OiEau has therefore been working on the preparation of a report of recommendations that will enable the Cambodian authorities to make the implementation of IWRM more effective at the level of the country's river basins. These recommendations are based on feedback from the IWRM project in the Stung Sen basin, but also from other basin management experiments in the country, with the support of various international aid agencies.

An OiEau delegation met the Cambodian Minister of Water Resources and Meteorology (MOWRAM) in January 2024. © OiEau

In this context, an OiEau delegation met the Minister for Water Resources and Meteorology (MOWRAM) and several Secretaries of State in January 2024. The discussions enabled the broad outlines of the recommendations currently being finalised to be fleshed out, with the aim of coordinating water resource planning at the various scales of river basins (macro-regions, sub-basins).

The preparation of this report of recommendations coincides conveniently with the appointment of the members of the national committee for river basin management and its secretariat at the end of 2023. This committee should breathe new life into Cambodian IWRM and meet for the first time in 2024.

On the road to Bali: INBO organises the basin segment at the 10th World Water Forum

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As part of the 10th World Water Forum (WWF), which takes place from 18 to 25 May in Bali (Indonesia) on the theme of "Water for Shared Prosperity", the International Network of Basin Organizations (INBO) is coordinating the preparation of the segment dedicated to basins.

This political meeting, inaugurated in 2022 during the 9th WWF in Dakar, aims to engage and mobilise stakeholders to accelerate the achievement of the United Nations Sustainable Development Goals (SDGs), by and for the basins.

This focus on basins is crucial, as basin management is essential for implementing integrated water resources management (IWRM), promoting optimal use of resources for humans and nature. It also balances the needs of competing uses and the needs of the environment on which societies depend. For river basins, because basin organisations and similar institutions need human and financial resources, as well as political support to ensure sustainable benefits.

The basin segment will address topics such as:

- sustainable financing;
- improving water information systems (WIS);
- cooperation between stakeholders;
- and the integration of ecological security.

The event will also be an opportunity for INBO to present new initiatives, projects and publications, offering a wealth of information on the latest developments in the field.

"I wish we can strengthen NARBO and INBO's collaboration in order to manage water resources, increase our progresses by experiences sharing, and adopt the best implemented technologies. NARBO will continue collaboration processes with INBO to help set events during the 10th World Water Forum in Bali. The output of this event could be a charter or any equal document which contains commitments between members of NARBO and INBO, on river basin organisations' strategic issues, such as technologies, governance and financial."

Dr Imam SANTOSO,
Chairman, Network of Asian River Basin Organizations (NARBO)

"Twin Basin Initiative": a global twinning programme for basin organisations

On the occasion of the 10th World Water Forum, INBO is launching a programme coordinated between several partners, to translate the principles of the Dakar Action Plan for river, lake and aquifer basins. It aims to promote and gradually develop exchanges between peers and twinning alliances between basin organisations.

As the first confirmed component of this initiative, a "Peer-to-Peer" support project for river basins has been developed with the support of the European Commission's Directorate-General for International Partnerships (DG INTPA). The overall aim of this action is to improve the sustainable management of water resources in a context of increasing pressure and climate change, through global exchanges of experience between teams from the basin organisations themselves.

"The European Union (EU) sees cooperation on water as a vector for peace, security and regional stability. Integrated Water Resources Management enables us to strengthen cross-sectoral cooperation with our partners. The EU has a wealth of experience and tools that it wishes to put to good use through INBO, thanks to a network of technical and institutional exchanges between basin organisations. This initiative is part of a broader approach to implementing the Global Gateway."

Ms Marjeta JAGER,
Deputy Director General, Directorate General for International Partnerships (DG INTPA) of the European Commission

INBO World General Assembly

The next International Network of Basin Organizations (INBO)'s World General Assembly, which is celebrating its 30th anniversary, will take place from 7 to 10 October 2024 in Bordeaux, France.

The event is organised by INBO, in partnership with the Adour-Garonne Water Agency, the Nouvelle-Aquitaine Region and the French Biodiversity Office.

It aims to bring together participants from all over the world who are involved in water resource management. It is aimed in particular at national and cross-border basin organisations. Representatives of ministries and other government departments, non-governmental organisations, donors, United Nations agencies and intergovernmental organisations, civil society organisations, the private sector, universities and research centres are also invited.

The event programme includes interactive technical workshops, cultural and technical visits, as well as thematic sessions on :

- Improving water quality;
- combating water shortages;
- establishing effective water governance to adapt to climate change;
- developing basin-wide strategies for the reuse of wastewater and other non-conventional water resources;
- International and cross-border cooperation.

TO FIND OUT MORE

Register here

INBO has a new look!

After modernising its logo and graphic charter, INBO is launching its new website in May 2024! It offers smoother browsing and improved ergonomics, to enable users to follow the activities of the network and its members.

INBO Handbooks: a new title devoted to the Transfer of waste and plastics in aquatic environments

Launched in 2009 to provide guidance to those involved in water resources, the INBO Handbooks collection is being expanded in 2024 with a new publication devoted to the transfer of waste and plastics into aquatic environments. It offers an in-depth analysis of their characterisation, origins and repercussions, while exploring the management of flows in basins and upstream reduction methods, as well as solutions to mitigate their impact. This handbook was written in partnership with the French Partnership for Waste (PFD), the International Solid Waste Association (ISWA) and the French Development Agency (AFD).

TO FIND OUT MORE

All the handbooks

Water International: special "basins" issue

INBO is collaborating with the International Water Resources Association (IWRA) on the publication of a special issue, in May 2024, of the journal Water International dedicated to water resource management in river basins, lakes and aquifers. This issue looks back over 30 years of basin management, analysing the progress made and the challenges ahead for basin organisations.

The authors' case studies and research articles deal with governance, water information systems, planning and implementation at basin level.

INBO Action Plan 2024-2027

On the occasion of its 30th anniversary, INBO is renewing its three-year Action Plan. The thematic priorities will be adopted at the General Assembly in Bordeaux in October 2024, based on preparatory discussions with members and partners.

Interview with Morocco's Minister for Infrastructure and Water and INBO's President

Why did you accept the presidency of INBO? How does INBO fit in with your field of activity?

Morocco has accepted the presidency of the International Network of Basin Organizations (INBO) for several reasons. Firstly, it represents recognition of Morocco's commitment to strengthening the implementation of Integrated Water Resources Management (IWRM) at basin level, on an international scale.

By assuming the presidency of INBO, Morocco is strengthening its leadership in the field of IWRM at the level of river basins and its involvement in global initiatives in this field, as well as reinforcing its role in international cooperation in the field of water management.

In addition, it provides an opportunity for Morocco to share its expertise and experience in water resource management with other INBO member countries, while also benefiting from the knowledge and good practices of other members and building relationships and partnerships between Moroccan water basin agencies and basin organisations that are part of the network.

Among other things, INBO's role in promoting integrated water resource management is fully in line with the remit of the Ministry of Public Works and Water, and is at the very heart of its concerns in working to ensure the efficient and sustainable management of water resources in Morocco.

> ***"By assuming the presidency of INBO, Morocco is strengthening its leadership in the field of IWRM at the level of river basins and its involvement in global initiatives in this field, as well as reinforcing its role in international cooperation in the field of water management."***

The recognition given to river basin management at the New York conference is a source of satisfaction for INBO, which has been working for recognition of this scale since its creation. Why is this encouraging?

As an INBO member, we are delighted that basin management has been given greater prominence at the United Nations Water Conference in New York in March 2023. It was widely debated at several parallel events, including those organised by INBO.

One of the most important was the side event held at UN headquarters on the theme of "Sustainability in the good governance of groundwater resources", organised jointly by the Ministry of Public Works and Water and INBO, which was well attended by representatives of governments and international organisations.

This side event was seen as a second opportunity, following the Groundwater Summit held at UNESCO-Paris in December 2022, to highlight the challenges and solutions related to groundwater governance at international level in order to ensure its preservation and rational and sustainable use, and to discuss how this aspect of sustainability could be taken into account, particularly at the level of the "river basin" management and planning unit, in order to speed up the implementation of the Sustainable Development Goals.

In recognising this approach, the New York Water Conference implicitly encouraged international collaboration in water resources management, which is crucial to resolving potential water-related conflicts and promoting the equitable and sustainable use of shared water resources. This can lead to increased sharing of knowledge, best practice and resources between different countries and organisations working in the field of water management, which is beneficial for all involved.

The Water and Nature Declaration and the Dakar Action Plan are two major initiatives that were launched under your mandate. Can you tell us more about their importance in achieving the Sustainable Development Goal 6 and the need to perpetuate them?

The importance of these two initiatives lies precisely in their objectives to achieve SDG 6, which aims to guarantee universal access to water and sanitation and to ensure sustainable management of water resources.

The Water and Nature Declaration, adopted at the 2021 International Water and Nature Forum in

© Minister for Infrastructure and Water of Morocco

Marseille, highlights the importance of preserving aquatic ecosystems and recognising their crucial role in sustainable water management. In particular, it stresses the need to protect river basins, wetlands and aquatic ecosystems to guarantee the availability and quality of water for present and future generations. By emphasising the connection between nature conservation and water management, this declaration contributes to the achievement of SDG 6 by integrating environmental dimensions into water management policies and practices.

The Dakar Action Plan, launched at the 9th World Water Forum in Dakar in 2022, proposes a roadmap for strengthening water governance on a global scale. It focuses on aspects such as international cooperation, stakeholder participation, the mobilisation of financial resources and the promotion of access to drinking water and sanitation for all. By providing a framework for coordinating global efforts in water management, the Dakar Action Plan contributes to the achievement of SDG 6 by promoting a holistic and coordinated approach to addressing global water challenges.

The challenge now is to continue and strengthen these initiatives, which requires the mobilisation and ongoing commitment of all stakeholders, so that governments, basin organisations and international and civil institutions can work together towards the common goal of ensuring access to water and sanitation for all and sustainable management of water resources.

The Kingdom of Morocco, in collaboration with INBO, is organising the 3rd Water and Climate Conference in 2023. What are the issues addressed by these conferences?

The organisation of the 3rd International Conference on Water and Climate (3 CIEC) on 6 and 7 July 2023 in Fez, under the High Patronage of His Majesty King Mohamed VI May God Assist Him, by the Ministry of Public Works and Water, in collaboration with INBO and the World Water Council (WWC), halfway towards COP 28, is a continuation of the series of conferences on water and climate, the first of which was held in Rabat in 2016, and the second in Marseille in 2017.

These conferences aim to integrate the water and climate agendas, recognising the interdependence between these two areas, to highlight the scale of the impacts of climate change on water resources and the consequences for the availability, quality and distribution of water resources on a global scale, and to identify solutions and best practices for adaptation.

For this 3rd edition of the ICCS conferences, we wanted to underline, during Morocco's mandate as INBO President,

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the importance of water management at basin level, firstly in strengthening adaptation and resilience in the water sector, but also in achieving the SDGs. So, for this edition, we have chosen the title “Basin Management: Key to Adaptation and Achieving the Sustainable Development Goals”.

The thematic sessions of the Conference were mainly based on the speech by His Majesty King Mohammed VI, may God assist him, at the opening of the 1st session of the legislative year of the Parliament (2023), which gave major importance to the challenges facing Morocco with regard to water-related issues. These challenges are shared by several countries, particularly in the Mediterranean region.

The conference was a great success, attended by almost 500 people from different countries and organisations, including representatives of governments, basin organisations, international institutions, the private sector and civil society.

At the end of the two-day conference, a Fez Appeal was launched, committing all participants to strengthening the implementation of IWRM at basin level as a tool for adapting to climate change and achieving the Sustainable Development Goals, through the sharing of good practice, the inclusion of innovation and new technologies, safeguarding groundwater, improving cross-sectoral management and ensuring the consistency of sectoral policies, preserving and combating the pollution of water resources, strengthening communication and raising awareness of water issues, and using renewable energies in the water production process.

It was also an opportunity to reaffirm our commitment to the Dakar Action Plan for river basins, lakes and aquifers, our involvement in the Coalition for Transboundary Water Cooperation, and finally our desire to actively prepare the basin segment of the political process of the World Water Forum scheduled to take place in Bali in May 2024.

INBO's key figures

1994
Year of creation

Status
Non-profit association under French law.

Main objective
Support all initiatives in favour of the organisation of Integrated Water Resources Management (IWRM) at the level of national or transboundary river basins, lakes or aquifers, in order to reconcile economic growth, social justice, environment and water resources protection, and participation of civil society.

Organisation
This platform for the exchange of knowledge and experience is managed by its President and the Liaison Office, which organises the Permanent Technical Secretariat provided by the International Office for Water (OiEau). Its World General Assembly takes place every 3 years. INBO Presidency is held by Morocco, since the GA of 2019, until 2024.

Actions
Exchanges of experience, twinning, events and partnerships (with OECD on water governance, with UNECE on transboundary cooperation and adaptation to climate change). Provision of the expertise of the Permanent Technical Secretariat provided by OiEau: technical and institutional support, training, data and information systems.

Network
192 Member-Organisations (basin organisations, governmental administrations in charge of water, bi or multilateral cooperation organisations) and Permanent Observers in 88 countries.

Implantation
7 regional networks, to strengthen the links between Member-Organizations from neighboring countries, to develop INBO's collective activities in the region, to organize joint activities of general interest.

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