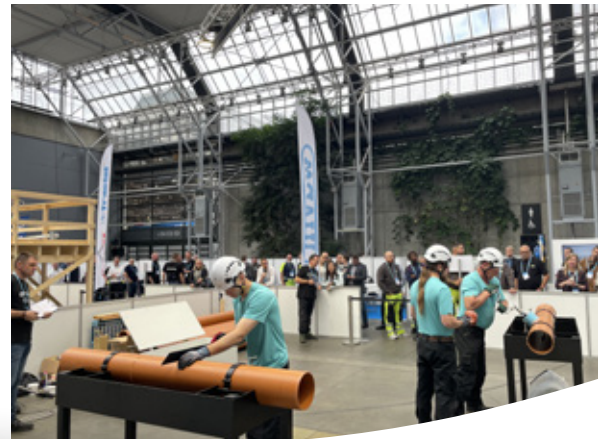




# Newsletter **INBO**



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# Editorial



The title of this new edition of the International Network of Basin Organizations (INBO) newsletter could well be “from Dakar to New York,” as it’s an invitation to take a trip through the regions and priorities in our network.

The World Water Forum in Dakar in March 2022 was an important time for reunion, renewing our collective commitment and refreshing our messages, with around 30 sessions jointly organised during the week, plus our World General Meeting, which confirmed the extension of the Presidency to the Kingdom of Morocco and ratified passing on the baton to France in October 2024 at our next General Meeting. For the first time, a policy segment dedicated to basins provided an opportunity to take stock of water management at basin level and to witness its effectiveness in many parts of the world. The Dakar action plan for river, lake and aquifer basins, adopted in Dakar and signed by around 100 institutions since then, is now central to our message and our expectations as we prepare for the United Nations conference on water, planned for March 2023 in New York.

Following the Mar del Plata Conference in 1977, this event is likely to be a rare, unique moment in the history of the international water community! We are therefore fully committed to getting people talking about basins, and above all demonstrating that “through basins and for basins” we can achieve the sustainable development goals more quickly, in particular Goal 6 on water. The conclusions of COP 27 in November 2022 have already confirmed that supporting basin organisations with a clear mandate, adequate human and financial resources and effective governance means securing access to water resources for all.

**Dr Éric Tardieu,**  
*General Secretary of the INBO*



# INBO in the major world water events 2022

## EauMega 2022 - 2<sup>nd</sup> International Conference on Water, Megacities and Global Change

The conference produced a scientific and technical "state of the art" of water management in megacities in order to identify and update the most important issues, and to contribute to the rapprochement and dialogue between science and policy at the local level.

📅 11 - 14 January 2022

🌐 <https://fr.unesco.org/events/eaumega>



## 9<sup>th</sup> World Water Forum

For the first time in the history of the Forums, the program included a high-level political segment dedicated to basins ("Basin Segment") supported by INBO, which also managed the activities of several working groups (see p. 36). It ensured the valorisation of the "Water Security <-> Ecological Security" initiative (see p. 37), of the INBO - IWA methodological guide on "Cities connected to their basins" (see p. 17), and of the INBO methodological guide on "Water policing (space)".

📅 21 - 26 March 2022

📍 Dakar (Senegal)



9<sup>th</sup> FORUM MONDIAL DE L'EAU DAKAR 2022

## Pan-European Regional Preparatory Meeting for the UN Water Conference 2023

Discussions focused on issues such as access to water and sanitation, transboundary and cross-sectoral water cooperation, ecosystem and biodiversity conservation, pollution prevention, floods and droughts, water financing, circular economy, etc.

📅 12 - 13 April

📍 Geneva, Switzerland

🌐 <https://unece.org/info/Environmental-Policy/Water-Convention/events/365225>



## 6<sup>th</sup> Meeting of the Global Network of Basins Working on Climate Change Adaptation (GNBCC)

The meeting focused on the theme "Accelerating progress towards achieving MDG 6: lessons learned and challenges faced by regional organisations in developing adaptation measures".

📅 25 April 2022

📍 Geneva (Switzerland)

🌐 <https://unece.org/environmental-policy/events/sixth-meeting-global-network-basins-working-climate-change-adaptation>



## International Conference: "Groundwater, Key to Sustainable Development Goals"

Multi-stakeholder conference, bringing together not only groundwater specialists but also public and private water service managers, decision-makers, financiers, industrialists, NGOs and civil society representatives...

📅 18 - 20 May 2022

📍 Paris (France)

🌐 [www.gw-sdg2022.fr/index.php/fr](http://www.gw-sdg2022.fr/index.php/fr)



## IWA World Congress

Under the theme "Water for smart and liveable cities", this congress addressed the digital economy, innovation diffusion, climate change adaptation, community and customer engagement, and sustainability.

📅 13 - 14 September 2022

📍 Copenhagen (Denmark)

🌐 <https://iwa-network.org/events/iwa-world-water-congress-exhibition-2022-copenhagen>



Mr. Kalanithy Vairavamoorthy, IWA Director General, and Mr. Eric Tardieu, INBO Secretary General, met during the IWA World Congress, to discuss the current cooperation between the two organizations on the city-basin dialogue. INBO and IWA, with the support of the OFB and SIAAP, have produced a methodological guide on the strengthening of multi-scale governance between urban areas and river basins, which was previewed at the World Water Forum of Dakar in March 2022, and officially launched on 13 September (see p. 17).

🌐 [www.oieau.org/actualites/presentation-officielle-du-guide-methodologique-iwa-riob-sur-le-renforcement-de-la-gouvernance-multi-echelles-entre-les-zones-urbaines-et-les-bassins-versants](http://www.oieau.org/actualites/presentation-officielle-du-guide-methodologique-iwa-riob-sur-le-renforcement-de-la-gouvernance-multi-echelles-entre-les-zones-urbaines-et-les-bassins-versants)

## 30<sup>th</sup> Anniversary of the UNECE Water Convention

The meeting reviewed the progress made in achieving the Convention's long-term vision: "the world's transboundary waters are managed cooperatively among riparian countries to promote sustainable development, peace and security".

📅 28 -30 June 2022

📍 Tallinn (Estonia)

🌐 [www.unwater.org/news/30th-anniversary-water-convention](http://www.unwater.org/news/30th-anniversary-water-convention)



United Nations



## 17<sup>th</sup> OECD Water Governance Initiative (WGI) Conference

This meeting adopted the WGI's new 2022-2024 strategy and programme of work and its contribution to the UN 2023 Water Conference. It also saw the appointment of its new president, Ms Barbara Pompili (see p. 18).

📅 19 - 20 September

📍 The Hague (Netherlands)

🌐 [www.oecd.org/water/regional/watergovernanceinitiative17.htm](http://www.oecd.org/water/regional/watergovernanceinitiative17.htm)



## United Nation Climate Change conference (COP27)

Its unprecedented conclusions call for protecting water and basins in adaptation efforts! INBO has organized seven events (which can be found here: <https://bit.ly/3JkSux6>) on climate change adaptation in national and transboundary basins, its financing, and the interest of nature-based solutions and sustainable groundwater management.

📅 November 6<sup>th</sup> to 18<sup>th</sup> 2022

📍 Sharm el Sheikh (Egypt)

🌐 <https://cop27.eg>



## Dushanbe Water Process - High Level International Conference on the International Decade of Action "Water for Sustainable Development" 2018-2028

The conference focused on ways of action to contribute to the implementation of the water-related goals and targets of the 2030 Agenda for Sustainable Development, the Paris Climate Agreement, the Sendai Framework for Disaster Risk Reduction, the Addis Ababa Action Agenda on Financing for Development and the New Urban Agenda at all levels.

📅 6 -9 June 2022

📍 Dushanbe (Tajikistan)

🌐 <https://dushanbewaterprocess.org/>



## Groundwater Summit 2022

This summit unified the declarations of all major water-related events in 2021-2022 into a global message on groundwater for the UN Water Conference in 2023.

📅 7 - 8 December

📍 Paris (France)

🌐 <https://groundwater-summit.org/>



Find more information on our website

[www.riob.org/agenda](http://www.riob.org/agenda)



# INBO in Dakar for the 9<sup>th</sup> World Water Forum

## A strong mobilisation

Through nearly 30 sessions, INBO and OïEau, which ensures its permanent technical Secretariat, dealt with the challenges and solutions in training, data and information sharing and international and transboundary cooperation. They also called for an acceleration of the actions implemented in three priority areas for achieving the Sustainable Development Goals (SDGs):

- Adaptation to climate change, with the "Dakar 2022" labeling of the "100 Water and Climate Projects for Africa" project incubation initiative.
- Biodiversity preservation, with the promotion of the Water and Nature Declaration, alongside the World Water Council and The Nature Conservancy (more than 75 signatories from 25 countries - see p. 37).
- Integrated Water Resources Management (IWRM), with a high-level political segment dedicated to basins and the launch (with OMVS\*, OMVG\*\*, UNECE & Swiss Confederation) of the Dakar Action Plan for river, lake and aquifer basins (75 signatory structures from 45 countries - See p. 36) These initiatives will be taken to the United Nations Water Conference in March 2023.

\* Organisation for the Development of the Senegal River  
\*\* Organization for the Development of the Gambia River



**30**   
sessions

**1500**   
attendees

**2**   
declarations

**150**   
signatories

## Strengthening ties between Senegal and French Guiana with water management

In addition to participating at the 9th WWF in Dakar, the Mayor of the city of Thiès, Babacar Diop, received the French Guiana delegation, represented by the President of the Water and Biodiversity Committee, Patrick Lecante, Mayor of Montsinéry-Tonnégrande, and accompanied by staff from the Guiana Water Office (OEG) and the Coastal Centre Urban Community (CACL).

This meeting provided an opportunity to demonstrate the shared intention to relaunch the twinning agreement between the city of Cayenne, capital of French Guiana, and the city of Thiès. A twinning agreement between Cayenne and Thiès was first

signed in the 1970s by Léopold Heder, Senator and Mayor of the City of Cayenne and Léopold Sédar Senghor. The presence of the CACL and the Water Office at this meeting enabled dialogue on the challenges of water management specific to each territory. The management of rain water was identified as a key discussion topic for sharing experiences.

Other official meetings have also been organised with the Mayor of the municipality of Somone, Salif Diouf, the Curator of the Marine Protected Area (AMP) of Somone, Captain Rodolphe Holy, and the President of the AMP Management Committee, Saliou Mbodji.

These discussions highlighted a number of similarities and revealed a keen desire for more interac-



tion, following this initial contact, in order to develop cooperative actions and share their experiences on sustainable management of protected areas, develop the value of resources and involve communities in their management. Finally, the dialogue highlighted a common interest in farming mangrove oysters (the species present in Somone in Senegal are identical to those present in the municipality of Montsinéry-Tonnégrande in French Guiana).



# INBO in Dakar for the 9<sup>th</sup> World Water Forum

An unprecedented breakthrough: the high-level political segment dedicated to basins!



The European Union, its Member States and partners (European Investment Bank, World Bank, African Union and African Ministers' Council on Water) announce the launch of the Dakar Action Plan for water basins.

At the invitation of the Presidency of Senegal and the World Water Council, INBO, UNECE, OMVG, OMVS and the Swiss Confederation organized this unprecedented sequence, which places basin management on the same political footing as the "historical" high-level events of the Forums, i.e. the "Ministerial", "Parliamentary" and "Local Authorities" segments.

After target 6.5 on Integrated Water Resources Management (IWRM), this is a further recognition of basin management as an essential tool for achieving all the water-related Sustainable Development Goals (SDGs)!

150 people participated in this basin segment. The programme included speeches by the President of the World Water Council, Mr. Loïc Fauchon, the Minister for Water of Senegal, Mr. Serigne Mbaye Thiam, the Minister for Equipment and Water of the Kingdom of Morocco and World President of INBO, Mr. Nizar Baraka and the High Commissioner of the Organization for the Development of the Senegal River, Mr. Hamed Diane Semega.

Exemplary actions were presented by national and transboundary basin organizations from all over the world, including CICOS and OTCA covering the Amazon and the Congo, the two largest international river basins.

## Dakar Action Plan for River, Lake and Aquifer Basins: for concrete commitments!

Launched at the high-level segment dedicated to basins, this initiative reaffirms that accelerating the achievement of the Sustainable Development Goals depends greatly on the action of basin organisations and the support they receive. Good management of river basins guarantees the water, food and energy security of our societies.

It is a call to action to strengthen cooperation, planning, legal and institutional frameworks of basin organisations and their financing.

**75 organisations from 45 countries have already responded, including donors such as the Asian Development Bank and the West African Development Bank (BOAD).**

Join us in supporting the Dakar Action Plan to make basin management a political priority at the UN Water Conference in March 2023!

**Find the Plan in detail on p. 36**

## 20<sup>th</sup> anniversary edition of the Europe-INBO International Conference (16 - 19 October 2023, Valencia, Spain)

Save these dates! They will mark a return to the source for Europe-INBO, in the city of Valencia which saw its birth in 2003.

The event will be held at the invitation of the Hydrographic Confederation of the Júcar River Basin (CHJ), and in collaboration with the Spanish Ministry of Ecological Transition and Demographic Challenge (MITECO), the French Agency for Biodiversity (OFB) and the twin network of Europe-INBO: the Mediterranean Network of Basin Organizations (MENBO), which is also celebrating its 20th anniversary.

It will gather the EU Member States, national and regional water directorates and administrations, hydrographic district authorities and basin organizations to exchange on today's most topical European issues related to basin management, the implementation of the Water Framework Directive (WFD) and its "sister directives" and their coordination with other sectoral policies.

Moreover, this edition will be marked by the launching of the Mediterranean regional preparatory process of the 10th World Water Forum.

# A look at network's activities

**Task: promoting water management on a basin scale through structured basin organization with proper governance, competencies and knowledge as well as sustainable financial mechanisms for IWRM**



## A high-level panel on the Water and Nature Declaration!

The Nature Conservancy, the World Water Council, the International Office for Water and INBO have jointly launched the "Water and Nature" Declaration at the IUCN World Conservation Congress in September 2021.

The initiative is based on a simple observation: "there is no water security without ecological security, no ecological security without water security... and vice versa".

In recognition of this interdependent relationship, the Declaration therefore sets as its objectives

- Strengthening the links between the water and nature communities,
- Improving the coherence of public policies and actions of all stakeholders in both areas,
- Promoting the implementation of Nature-based Solutions (NBS) as a "no-regrets" measure for the sound management of water resources, the preservation of biodiversity and the adaptation to climate change.

The World Water Forum was an excellent opportunity to mobilise the water community around this initiative.

The partners of the Water and Nature Declaration therefore organised this high-level panel to discuss obstacles and levers for action. Representatives of Kenyan civil society organisations, the Madagascan Ministry of Water, the Loire-Brittany Basin Committee, the French Development Agency (AFD) and the Amazon Cooperation Treaty Organisation (OTCA) presented their commitments. Their exemplary actions demonstrated cost-effective economic models for financing Nature-based Solutions, but also the need to invest more massively in education and training of ecological engineering professionals.

The Water and Nature Declaration received new support at the event and now has 69 signatory organisations from 27 countries.



*"It is essential to develop and link our water and biodiversity monitoring systems to report on the quality of our environment and the effectiveness of Nature-based Solutions".*

**Carlos Lazary,**  
Executive Director, Amazon Cooperation Treaty Organisation (OTCA)

Join us in supporting the Water & Nature Declaration to make this issue a political priority for the UN Water Conference in March 2023:

<https://bit.ly/3b7RJsl>





# A look at network's activities

## Twenty years of integrated water management through drainage basins in Quebec

### Brief history of IWRM in Quebec

In 2022, Quebec celebrated twenty years of its National Water Policy (PNE). The adoption of this policy marked the official introduction of integrated water resources management (IWRM) in Quebec, by providing financial and technical support to create organisations working on the scale of drainage basins. The Quebec Group of Drainage Basin Organisations (ROBVQ), created a year earlier, was given the mission of bringing together drainage basin organisations (OBV) to promote water governance within the framework of IWRM. Since its inception, the Quebec vision of IWRM has been one of horizontal, consultative management, encouraging the participation and collaboration of water stakeholders and citizens in the processes of reflection and decision-making in water management.

Quebec's OBVs are currently spread over 40 integrated water management zones, thereby ensuring the implementation of integrated water management by drainage basin (GIEBV) over the entire territory of southern Quebec.



### A changing network

Over the last 20 years, the OBV network has seen its mandate change. Initially, its role was mainly based on developing a water master plan (WMP) and updating, promoting and monitoring its implementation, all in consultation with local stakeholders. Its mission has now been expanded. The OBV now play a key role in mobilising a network of over 900 stakeholders involved in implementing IWRM in Quebec. A large number of them are also involved in field work, contributing to the conservation and restoration of wetlands and waterways.

The OBV have had to adapt to new realities, in particular through the adoption of new regulatory frameworks and the evolution of climate change, which have an increa-

sing influence on water systems and the availability and quality of water. Although initially, the network mainly consisted of biologists and ecologists, it now relies on the know-how of experts in social sciences, communication, land planning, geomatics, management, and so on.

The ROBVQ has supported the network through its growth, by ensuring that it remains at the forefront of thinking on IWRM issues. It has encouraged the creation of new partnerships with other water stakeholders, such as universities, associations, municipalities and economists, while diversifying the support roles that OBV now plays in implementing the regulatory framework surrounding IWRM in Quebec.

### What is the future of IWRM in Quebec?

During the last year, the OBV in Quebec came together to celebrate 20 years of the ROBVQ and the network it represents. This meeting was an opportunity for the members to plan and imagine together the network they would like to see in 20 years' time.

The OBV are keen for their role in water management in Quebec to be more recognised and for the WMP to be better integrated in the decisions and strategies of land planners. In particular, they consider it necessary to strengthen links with the municipalities and the various provincial ministries, and to stabilise the structure of

their organisation. Improvement of the technical and financial support offered to the OBV also remains key to the network's concerns. Government support needs to be harmonised with the efforts that Quebec's OBV will have to make to support and accompany water users in adapting to the new challenges of water management, in particular in relation to the impacts of climate change.



# A look at network's activities

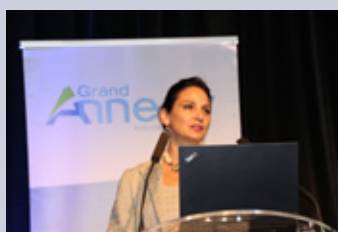
## 20<sup>th</sup> International "EURO-INBO" Conference in Annecy (France)

**200**  
attendees

**5** plenary  
sessions

**2** workshops  
on water in mountains

**42** countries  
represented



*I think that INBO has an extremely important role to play, and it plays it very well, in several respects. Indeed, by making all the organisations involved in water management work together, it is a network that stimulates local authorities on a national scale, on a European scale, and then on a global scale. As a representative of the European Commission, I would add that INBO has a very important, even crucial, role to play, as a body capable of explaining the evolutions of European water legislation in an educational way. And at the moment, many legislative reforms have an impact on the management, quality and quantity of water. I would conclude by recalling the facilitation of human contacts that INBO meetings allow, the development of trust that has been established between men and women who work for a more sustainable water management.*

**Veronica Manfredi**

Director "Zero Pollution" (ENV.C) of the General Directorate for the Environment (DG ENV) and President of the International Commission for the Protection of the Rhine (ICPR)

The 20<sup>th</sup> edition of the international Euro-INBO conference organised by the International Network of Basin Organisations (INBO) with the support of the French Office for Biodiversity, on the topic of the European Directives on water, was held in Annecy from Monday 26 to Thursday 29 September 2022. After the 2020 (online) and 2021 (hybrid) editions, which were severely restricted by the pandemic, it marked the return to a 100% face-to-face format. Surrounded by water, between the peaks of the Alps as a backdrop to Lake Annecy, finally relieved of a long drought by the heavy rain that providentially fell on the city during the conference, 200 participants from over 30 countries were able to discuss the implementation of European directives related to river basin management, during the sessions and workshops, but also to meet or get together during moments of conviviality and during technical and cultural visits.



**The "Water in the mountains" workshop, which was all the more welcome for this conference organised in Haute-Savoie, a French department marked by its mountains and lakes, allowed exchanges on :**

- Adaptation to climate change (in French only)
- River restoration: a European objective at the crossroads of several legislations

**In addition, five thematic sessions were organised from Tuesday to Thursday:**

- Session I. Restoration of ecological continuity
- Session II. Mobilisation and involvement of users
- Session III. Good ecological status, WFD governance, large water cycle
- Session IV. Cross-sectoral coordination
- Session V. International and transboundary cooperation

The fruit of the joint work of the stakeholders present at the Euro-INBO gave birth to the Annecy Declaration which places water at the heart of the issues and strategies for adaptation to climate change.

**To face the challenges of sharing, availability and reconciliation of water uses, the Declaration is based on 4 pillars :**

- The governance of the European Union's basins: redoubling efforts to achieve good ecological status.  
The future management plans will have to integrate even more the initiatives of the European, national or basin levels. The mobilisation of basin organisations is essential to involve all stakeholders and encourage them to better manage the resource.
- Participatory management: strengthening the involvement of users and intersectoral coordination.  
Since the adoption of the WFD, it must be encouraged by all Member States for all stakeholders at various levels of mobilisation, both at national and transboundary levels. It implies public consultation and the involvement of all, especially through the basin committees, and thus meets the principles of Integrated Water Resources Management.
- Restoring the continuity of watercourses: reconciling the challenges of water, ecological and energy security.

# A look at network's activities



This major commitment, resulting from the EU Biodiversity Strategy 2030, contributes to the achievement of the good status objective set by the WFD. Fulfilling this commitment requires the development of new technical and scientific tools, but also the sharing of existing knowledge and data. Cooperation, coordination and co-financing will facilitate the achievement of this objective.

- International and transboundary cooperation: to promote globally the relevance of the legislation and tools of the European Union and the 1992 Helsinki Water Convention on the protection and use of transboundary rivers and international lakes.

This cooperation is made possible to a large extent by the European transboundary basin organisations, and by international cooperation projects and initiatives between the European Union and third countries.

For more information, the presentations of all the speakers can be downloaded from INBO website:

<https://riob.org/en/events/europe-inbo-2022>

*This year, in 2022, we celebrate the 30th anniversary of the Convention on the Protection and Use of Transboundary Watercourses and International Lakes, adopted in Helsinki in 1992. It is a unique framework, with all the material for integrated and cooperative management of shared water resources, which promotes conflict prevention, sustainable use of resources, and also protection of ecosystems. For more than a decade now, we have been working very closely with INBO because we have the same objectives: INBO supports the basin organisations, agents of the implementation of the Convention, by giving them a voice, by strengthening their capacities. Thus, in 2013, we created together a network of basins working on climate change. Now gathering 18 members from all over the world (Europe, Africa, Latin America, Asia, with the Rhine, the Danube, the Dniestr, the Mekong, the Amazon, the Sixaola, the Congo, the Senegal, the Niger, among others), this network allows the exchange of questions and good practices, to help basins better adapt to climate change.*

**Sonja Koepfel**

Secretary of the Water Convention, UNECE

## Brazil - Participatory water management as a responsibility of all at the heart of the XXIV ENCOB

The XXIV National Meeting of Brazilian Basin Committees (ENCOB), held on 22 August in the city of Foz do Iguaçu, Brazil, gathered more than 1,300 face-to-face participants and 3,200 online participants, who exchanged during four days on water management in the country under the theme: "Water management: everyone's responsibility".

The event was attended by representatives of 235 Basin Committees in the country and included a training day promoted by the National Water and Sanitation Agency (ANA), which allowed more than 1,800 people to qualify in an interactive way.

**The programme was developed at a high level and the main topics covered were:**

1. climate change adaptation and resilience,
2. water efficiency, reuse and technological innovation,
3. participatory management and engagement, and
4. watershed revitalisation.

**The training day focused on topics related to water resources management, such as:**

1. water resources plans and river scoping,
2. payments for environmental services,
3. environmental education for water resources management,
4. conflict management,
5. water management and gender, and
6. groundwater management.



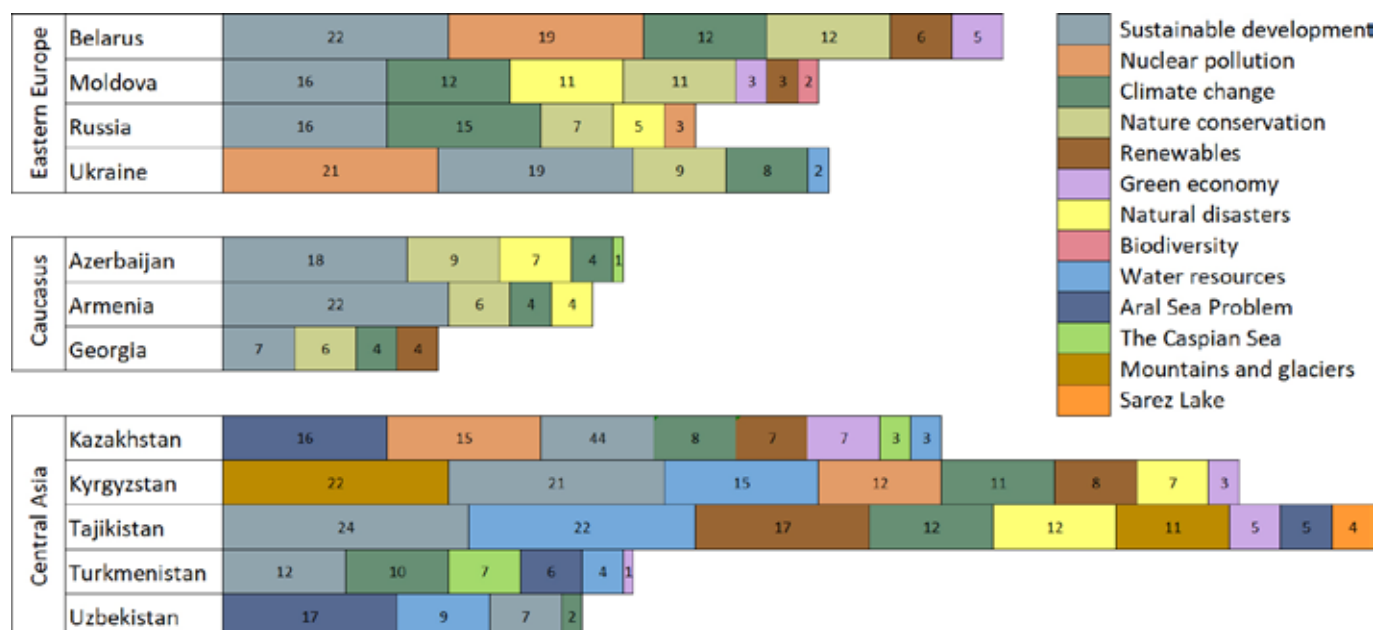
This meeting, promoted every year by the National Forum of Basin Committees, organised by the Brazilian Network of Basin Organisations (REBOB), is the biggest event on water in Brazil and brings together representatives of civil society, public authorities and users.

The National Forum of Basin Committees, whose mission is to promote the articulation of these collegiate bodies with the entities of the system at the national level, and REBOB, whose main objective is to integrate all the successful actions and solutions for water in the Brazilian territory, seek with ENCOB to strengthen participative and shared water management in Brazil.



# A look at network's activities

## Analysis of 30 years of environmental issues at the UN in EECCA



As part of the UNECE project "Support to the Network of Russian Speaking Water Management Organizations" financed by the Government of the Russian Federation, the Scientific-Information Center of the Interstate Commission for Water Coordination (SIC ICWC) has analyzed the statements made by the countries from Eastern Europe, Caucasus, and Central Asia at the UNGA general debate in the period from 1992 to 2020, with focus on environmental matters, especially environmental challenges to which the countries attracted attention of the world community and initiatives they pushed forward.

A mapping was made by thematic category for each statement and country; thematic priorities in the area of water, environment and transboundary cooperation were marked out by decade (1992-

2000), (2001-2010), (2011-2020) and the period of analysis as a whole (1992-2020); and, initiatives promoted by the countries were identified. The common trends have been identified by country and region to propose priority areas for discussion at EECCA meetings.

All the countries addressed the matters related to environmental management and protection in their statements, but with different frequency, level of detail and at different periods of time. Belarus, Kazakhstan, Russia, Tajikistan, Uzbekistan, and Ukraine drew attention to one or another environmental topic since the very first statements, while Azerbaijan, Armenia, and Turkmenistan have made it later. The countries also raised the challenges of sustainable development and climate change. Nuclear pollution (Ukraine, Belarus, Kazakhstan and

Kyrgyzstan), natural disasters (Moldova, Tajikistan, Azerbaijan and Kyrgyzstan), and general issues of nature protection (all the countries of Eastern Europe and Caucasus), water resources and individual aquatic ecosystems (Central Asian countries) were frequently discussed as well. In the recent years, green economy and renewables have been gaining popularity in the statements.

Materials of the study can be found on the EECCA NWO website:

[www.eecca-water.net/content/view/25394/155/lang,russian/](http://www.eecca-water.net/content/view/25394/155/lang,russian/)

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## The Mediterranean Network of Basin Organisations – MENBO

Since 2014, MENBO acts as the Secretariat of the Water Strategy in the Western Mediterranean, 5+5. As such, it guided the 3rd Ministerial Conference of the 5+5 water (March 2022), in which the Ministers mandated the elaboration of a Training Programme for the Mediterranean. After the Conference, MENBO chaired two Working Groups to discuss the content of the Training Programme.

Besides, MENBO often participates as a partner in funded Projects. Currently, the Network takes part in the MAGO Project (2021-2023), aiming to increase water use efficiency in agriculture through the use of participatory systems and the supply of climate services and web tools.

MENBO is also working with UNESCO in the framework of the Child Project 2.1 (MedProgramme-IHP), organising a 3-day training course on conjunctive surface and groundwater management in coastal areas, which will take place in February 2023.



# A look at network's activities

## REBOC launches the Women's Talent Platform for Water

During the XXIV<sup>th</sup> National Meeting of River Basin Committees, held from 22 to 26 August in Foz do Iguaçu (PR), Lupericio Zirolto Antonio, President of Brazilian Network of River Basin Organisations (REBOB) and Permanent Technical Secretary of Latin American Network of Basin Organisations (RELOC), officially launched the Women's Talent Platform for Water. Its aim is to bring forward women experts and so facilitate contact between and with women involved in a wide range of topics of interest in the field of water resources management and sanitation, seeking to promote gender balance on collegiate bodies such as river basin committees, decision making groups, job opportunities, conferences and events.

The slogan "Leave no one behind", focused on reducing gender inequalities, guides the implementation of the UN's Sustainable Development Goals

(SDG - Agenda 2030) for global environmental, economic and social sustainable development, and is one of the drivers behind the implementation of this platform that will cover the whole Latin American territory.

The platform is already receiving awards, as an initiative highlighted by the Global Water Partnership (GWP), the United Nations Development Programme and other global institutions linked to monitoring progress on SDG6 Clean Water and Sanitation, indicator 6.5.1 Degree of implementation of integrated water resources management, whose target includes gender equality.

The Brazilian Network of River Basin Organisations - REBOB Women, the National Water and Basic Sanitation Agency - ANA, the Brazilian Association of Water Resources - ABRHidro and the National



Forum of River Basin Committees are partners in the initiative to implement the Women's Talent Platform for Water, with the aim of consolidating it in a permanent, updated network environment and making it a reference for the National System of Water Resources Management - SINGREH for gender balance in Brazil.

To access the content:

[www.rebob.org.br](http://www.rebob.org.br)

## ANBO: Towards political leadership



Governance of basin organisations in Africa is gaining a new momentum. The African Network of Basin Organisations (ANBO), as an African platform, is at a crossroads in fulfilling its mission to provide access to water for all Africans by 2063, as stipulated by the African Union. Through its ambitious Action Plan, it aims to make basin organisations essential partners in water policies in Africa.

ANBO's position is to put the debate on Sustainable Development Goals back at the heart of public policies on a continental scale, in particular Goal 6.5, which expresses this ambitious vision of water governance and is also in line with the 2025 Africa Water Vision. ANBO's 2020-2024 Action Plan therefore integrates priority areas of action that take into

account major issues such as cooperation between basin organisations, strengthening of the platform for sharing and managing water knowledge, AWIS, the mobilisation of financial resources and the empowerment of the Secretariat.

Following its successful participation in the World Water Forum, where ANBO involved all its members with the support of partners such as CIWA and the Swiss Cooperation, the political leadership of the network is taking a new turn. The European Union, through the TEI (Team Europe Initiative), has released a budget of 420 million euros for water governance in Africa. ANBO has received 3 mil-

lion euros from this amount, which will enable it to develop its Action Plan and its new strategy for 2025-2034.

At the most recent World Water Forum, the Network took the opportunity to hold the Board meeting renewing its Coordination Board, with the election of the new ANBO President, Mr Sylvester Matemu, Executive Director of the NBI (Nile Basin Initiative), who succeeds Mrs Judith Enaw, Executive Secretary of CICOS.

Following the same logic, AFD, in collaboration with OIEau, is finalising a new project entitled "Dynamisation of African Transboundary Basin Organisations for improved water resources management in a climate change context", due to start in 2023. The Swiss Cooperation and the ADB are currently examining ANBO's requests for funding.

In terms of communication, ANBO has taken part in various events such as the International Ecosystems Conference with OSS, the Experience Sharing Workshop on the Water Users' Platform with ACMAD, and the World Water Week.

ANBO is therefore taking a new path towards African leadership in the water sector in Africa, in full cooperation with the African Union and AMCOW.

To achieve the Sustainable Development Goals, to preserve biodiversity (Aichi and the post-2020 global framework) or to adapt to climate change, technical solutions exist. However, they must be supported by solid governance, particularly at the level of river basins:

- How can operational Integrated Water Resources Management (IWRM) be implemented? How can we break down barriers and ensure greater consistency between very interdependent public policies on water, health, the environment, agriculture, energy, land-use planning and regional economic development?
- How can we ensure joint management of surface water and groundwater?
- How can we weigh up the benefits of the large hydraulic structures planned against their negative impacts?
- What legal and institutional frameworks should we establish and what level of decentralisation can we grant local authorities?

- What participatory basin management methods should we adopt to ensure that stakeholders' involvement is not only a value to defend (conciliating different water uses) but also a determining factor in the effectiveness and performance of public policies (reaching shared diagnoses and appropriating the measures considered)?

There is no single all-embracing answer to these questions that is valid worldwide. The cultural, political, economic and social diversity of our drainage basins is enormous. Therefore, we need to develop solutions adapted to these different contexts. Exchanging experiences and best practices from around the world can help us do this.

From the OECD's Multi-Level Water Governance Initiative, through South America, Central Asia, China and Africa, embark on a journey to discover initiatives that are reinventing basin management!



***Success in designing and implementing sound plans for the management of water resources at basin level largely depend on the ability to set up a good governance system.***

***It is true for national basins, but it is all the more true for transboundary basins.***

***Amazon Cooperation Treaty Organization (ACTO) is an intergovernmental forum for cooperation in the region. It has become the sole mechanism responsible for developing regional governance of water resources.***

***In the framework of the Amazonas Project (ACTO/ Brazilian Cooperation Agency – ABC / National Agency for Water and Basic Sanitation of Brazil – ANA), financed by the Government of Brazil, implemented by ACTO, the Amazonian countries have agreed to strengthen IWRM, raise awareness and build the capacities of stakeholders on water management issues and improve inter-sectoral co-ordination.***



Mr. Carlos Lazary,  
Executive Director, Amazon Cooperation Treaty Organization (OTCA)



# Governance

## Moldavia - Solidarity Water Europe involves the population in the Nirnova basin

Solidarity Water Europe (SWE) - the European office of the International Secretariat for Water (ISW) - has been present in Moldavia since 2006. It has carried out numerous initiatives there, including actions to involve civil society, particularly young people, as well as one-off interventions on water and sanitation facilities. The area of action of the current project is the Nirnova river basin, a predominantly rural territory comprising 30 municipalities spread over two regions (Hincesti and Nisporeni).

Since 2016, SWE has developed the "Access to drinking water and sanitation in the villages of the Nirnova basin" project, supporting the structuring of local water governance to encourage a regional development dynamic no longer designed on

the scale of individual municipalities, but on basin scale.

**For this purpose, SWE acts at 3 levels:**

- 1) setting up governance tools for the municipalities;
- 2) supporting the process of producing a "water and sanitation" Master plan on basin scale;
- 3) involving civil society and the general public.

The SWE project has made significant progress in developing good water governance in the Nirnova river basin. Despite the fact that the institutional context in Moldova is still under construction, the

Mayors are willing to work together to develop their basin and are keen to experiment with intermunicipality.

In view of these advances, SWE intends to continue its work in Moldova, particularly in terms of supporting elected officials by sharing experience and expertise.

Similarly, and in the current context of the war in Ukraine and Moldova's stated desire to move closer to the European model, SWE will continue to promote a governance model based on the fundamental principles of democracy and solidarity, placing local authorities and civil society at the heart of water management.

## Recent developments in local water management in Kyrgyzstan and Uzbekistan



In Kyrgyzstan water user associations (WUAs) are established for operation and maintenance of local irrigation systems and unions of WUAs for the joint management of main irrigation systems. Over the years they were struggling with various constraints to perform their functions properly. In 2021 the laws were amended to enhance the role of local self-governing bodies in sharing the burden by assuming responsibilities for managing irrigation water supplies if this matter is regarded as of "local importance". WUAs can transfer irrigation, drainage systems and water facilities to municipal ownership, if they wish so. Local self-governing bodies can allocate funds for operation and maintenance of municipal water facilities, provide assis-

tance to WUAs, transfer municipal water facilities to WUAs for use and management; coordinate with the WUA the fees of irrigation services.

In Uzbekistan water consumers' associations (WCAs) were established primarily on a hydrographical basis or other conditions that ensure the rational management and use of water resources.

WCAs performance has been always low made difficult by outdated infrastructure, lacking equipment, underpaid staff and difficulties in collecting fees. In 2022, local water management functions were assigned to large agricultural producers (clusters)

by transferring them water facilities on the basis of PPP (Public Private Partnership). Part of the funds provided in the State budget for the costs of operating water facilities will be allocated to a private partner. Other water users shall conclude water supply contracts with district irrigation departments. Special services units are established in district irrigation departments to arrange water delivery, use and repair irrigation networks and provide other services. Although it is not explicitly stated, clusters and special services units seem to take over the responsibilities of WCAs.

These developments illustrate shift towards the increased role of state, local self-governing bodies or private companies in improving local water management. However a care should be taken to secure water users' participation in water management.

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# Governance

## 10 years of work on the China - Europe water platform



On 21 December 2009, a cooperation agreement was signed between the Ministry of Ecology and Sustainable Development (France) and the Water Resources Ministry (China). In April 2011, France and China launched a pilot project on integrated management of the Hai river basin, which was implemented in three distinct phases and an extension. In particular, it involved testing the application in China of specific mechanisms for basin management, water pollution control and ecosystem protection, put into practice in France since the 1964 Law that created the Water Agencies.

Following an initial project phase (April 2011 - March 2012), to develop mutual understanding of the operation of basin institutions and the procedures and methods used in France and China, the second phase (October 2012 - December

2015) saw specific French methods applied to the Zhou river sub-basin (Hai river basin), the relevance of which was identified during the first phase.

The third phase of the project (2016 – 2019) was designed to capitalise on the efforts made during the previous phases. The extension of the cooperation agreement to March 2021 was intended to highlight the results of the cooperation to new Chinese stakeholders.

In parallel, since 2012, the activities of the China-Europe Water Platform (CEWP), a European-led working group for water, have been structured and reinforced. The existing bilateral cooperation, a regular presence (Missions and International Volunteers in Enterprise based in Beijing) and the various activities of OIEau in China, combined with ongoing support from the State services, have enabled us to:

- monitor the activities of the CEWP, support the State services or represent them in strategic meetings;
- enhance the existing bilateral cooperation via the European dimension (the bilateral project is a fundamental component of the CEWP partnership) and strongly communicate its results in different fora;
- consolidate France's role as a leader in basin management;
- implement a pilot action programme on the theme of "basin management and safety".

**CHINA  
EUROPE**  
Water Platform

## Strategy and leadership tools for basin councils: cooperation between Colombia, Ecuador and France

Institutional and technical cooperation on integrated water resources management (IWRM) between Ecuador, Colombia and France is being developed through two bi-national programmes financed by the Adour-Garonne Water Agency, under the Oudin-Santini law. The International Office for Water is involved as the technical operator of the projects.

In Colombia, the cooperation forms part of the technical and institutional programme for IWRM between the Ministry of Environment and Sustainable Development (Minambiente) on the national level, and the Regional Environmental Corporation of Boyacá (Corpoboyacá).

In Ecuador, cooperation is carried out at national level by the Ministry of Environment, Water and Ecological Transition, and is devolved in the Manabí hydrographic boundary.

The technical missions carried out in these two countries have made it possible to establish a regional exchange of experiences with the crea-

tion of work spaces and planning of discussions on the role, strengths and challenges of regional leadership for water resources management.

The workshops and technical sessions put in place have enabled reflection on a model of basin council leadership, integrated in the water planning process.

To ensure good dissemination of its results, a guide of good practices for the leadership and planning of basin councils is currently being co-written by

Colombia, Ecuador and France, to capitalise on this exchange of experiences. This exchange marks a consolidation of the links between the countries and facilitates the sharing of experiences.

In addition, as part of a logic of continuity of these different exchanges, dialogue has begun in Colombia on issues related to water and agriculture, water quality monitoring and sanitation, and lastly governance and planning of water resources at basin level.



# Governance

## A manual to bring cities closer to their basins

The INBO and the IWA, with the support of the French Office for Biodiversity and Greater Paris Interdepartmental Syndicate for Sanitation (SIAAP), have produced a **methodological guide** on strengthening multi-scale governance between urban areas and river basins. It was initially designed to support the debate on sustainable cities that had already been launched, but was still too sectoral and focused on urban specificities, and was not achieving the required optimisation in terms of costs, resilience of water resources, protection of biodiversity, risk management, and so on.

For the IWA and the INBO, a **"city-basin dialogue"** is a mechanism for moving towards sustainable water management by implementing appropriate and sustainable solutions for effective multi-level governance of cities and basins.

This connection also aims to improve awareness and protection of water sources within and beyond urban boundaries, to maintain the quantity and quality of water resources and prepare for the impacts of climate change.

The "City-Basin" guide will continue to be developed by collecting more "basin stories" and presenting it at the various international events in which the two organisations take part.

## Developing the blue economy in cities

In line with the city-basin approach developed with the IWA, and in collaboration with several international stakeholders involved in the promotion of sustainable cities, the INBO and the OECD have chosen to focus on a **regional approach to the blue economy**, from the perspective of a resilient, inclusive, sustainable and circular approach in cities and regions, based on the OECD's water governance programme.

A global survey was launched to develop a knowledge base on the status of the blue economy in cities and regions, including key drivers, challenges, threats and impacts at local level, as well as formal initiatives at all levels of government.

### The responses will be used for:

- A policy paper, which was presented at the COP27 Climate Change Conference in Sharm-el-Sheikh (November 2022).
- City profiles and a discussion paper, to be presented at the UN Water Conference in New York, USA (March 2023).
- A summary report, to be launched at the 10th World Water Forum in Bali, Indonesia (March 2024).

## Experience of multi-level public-private governance to improve the shared waterway of the Paraná River



The integrated management of water resources presents challenges that do not only require an imperative vision of sustainability but also institutional political links, so that the competent stakeholders can operate in a coordinated, efficient manner.

In the case of shared rivers, or international rivers, this coordination must respect the sovereignty of each nation, as well as the strategy defined by each nation's policy. The section of the Paraná River shared between the Republic of Argentina and Paraguay is no stranger to these and other challenges. The section extending over nearly 700km, from the confluence with the Paraguay River as far as Iguazú, required an intervention that would bring its managers closer to the users and the public and private stakeholders involved in navigation. They all called for the need to update the condition and potential navigability of this section, describe its problems

and address them, demonstrate its economic viability as a regional waterway, and take on board the critical difficulties of the waterway. Above all, they stressed the urgency of finding a tool to bring together the various interests, which would help to address them in a comprehensive, joined-up way.

The Argentine-Paraguayan Joint Commission for the Paraná River took action, supported by its bi-national composition, and in 2019 formed the "Encarnación" working group to improve the waterway. Thus began the uninterrupted work of institutionalising public-private governance of the shared waterway, which helped to minimise the impact of the historic low water level of the Paraná River, and coordinate implementation of the necessary actions for its improvement. Among other things, it

coordinated dredging, marking and buoyage works at more than twenty critical navigation passages. The experience proves the value of public-private partnership to achieve consensus and efficiency in the integrated management of the shared navigable waterway of the Paraná River.

**Mrs Teresa Rosa Salatino,**

*with the collaboration of Lic. Hector Enrique Guardo,  
Secretary General Headquarters BUENOS AIRES ARGENTINE-  
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# Governance

## Water governance in Senegal



*“The Somone SCGPE is an innovative governance tool as it identifies in a participative manner the actions to be taken at basin level in the Somone, moving towards consultative, sustainable management of the resource. It is the first committee on this scale to discuss the future of water in this area. Capacity building is taking place at local level and practical actions to improve access to the resource and its sustainability are possible in the short, medium and long term.”*

**Niokhor Ndour,**  
Director of the DGPPE

Since 2018, the Senegalese Ministry of Water and Sanitation has conducted a pilot project implementing Integrated Water Resources Management (IWRM) in the drainage basin of the Somone river, via institutional cooperation between the Senegalese Directorate of Water Resources Management and Planning (DGPPE) and the Seine-Normandie French Water Agency, with the technical support of the OiEau (International Office for Water).

Water governance, a key component of the project, has been established by setting up the first consultation framework for IWRM in Senegal: the Somone Sub-Committee for Water Management

and Planning (SCGPE). Created through a participative approach, it ensures solidarity between users and brings together all the stakeholders on four councils (local authorities, devolved technical services, users and support organisations). Its aim is to inspire and create coherent links with the other future governance frameworks in the country.

Since its creation with the decree of 27 January 2021, the members of the SCGPE, who meet twice a year, have identified and prioritised the major issues related to water (surface and groundwater) in order to draw up a Water Management Plan (WMP) providing a solution to all these challenges. The

members of the sub-committee chose to proceed via working groups specific to each issue, composed of volunteers.

Led by its technical secretariat, the Somone SCGPE is now seeking to propose and implement practical solutions to meet the present and future needs of local stakeholders.

**Thelma Pellicer,**  
Local representative in Senegal,  
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## 17<sup>th</sup> Meeting of the OECD Water Governance Initiative in The Hague, Netherlands (19-20 September)



The OECD Water Governance Initiative is an international multi-stakeholder network of over 100 members, including INBO, that meets twice a year to share knowledge and experience on water governance reforms, projects and policies. The programme provides advice to support governments to undertake effective water governance reforms and is fully engaged in the international water management agenda.

The meeting in The Hague, the first face-to-face meeting since January 2020, was an opportunity for the Initiative's members to welcome its new Chair, Barbara Pompili. As a former French Minister for Ecological Transition and Secretary of State for Biodiversity, and currently a Member of the French National Assembly, Barbara Pompili brings over twenty years of environmental policy experience to the Initiative. She takes over from Peter Glas, Delta Commissioner from the Netherlands, who has chaired the Initiative since its second meeting in 2013.

During this meeting, the OECD proposed a new strategy for 2022-2024 based on the territorialisation of action for better water governance, underlining the importance of city-basin relations.

The meeting was also an opportunity to prepare the Initiative's contribution to the 2023 UN Water Conference and the 10<sup>th</sup> World Water Forum.

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 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.



***We need to increase financing dedicated to basin management. Transboundary basin of lakes, rivers and aquifers provide freshwater to over 1 billion people in Africa alone. These water sources are vital for agriculture, fishing, la consommation domestique, energy, goods transportation, biodiversity and the environment. The European Union and its Member States along with the African Union and AMCOW are setting up a new flagship initiative on transboundary water management in Africa, with the commitment of over 400 million euros in funding. As team Europe, they will support transboundary water management in Africa, for regional integration and development. This initiative will harness the potential of water through cooperation and experience sharing. European and African countries will develop together strategic policies and knowledge to better manage water resources against global changes like climate change. Transboundary investments in water will be stimulated, enabling the implementation of integrated water resources management approaches. By contributing to the African Union's 2063 Agenda and the Sustainable Development Goal 6, Team Europe will make water a vehicle for peace and prosperity.***



Ms. Marjeta Jager,  
Deputy Director-General, Directorate-General for International Partnerships

# Funding

## Private operator and sustainable funding for the Congo-Brazzaville hydrological service



On request from the French Development Agency (AFD) and the Congolese government, since 2016 the International Office for Water (OiEau) has been conducting a feasibility and support study for an innovative project to reinforce the hydrological service of the Republic of the Congo.

The highly innovative idea consists in recruiting an international private operator for a specific period (5 years) during which:

- Following an initial diagnosis, during the first years of the contract, it will reorganise the national hydrological service, through investments and improved procedures. The investments will include the installation or renovation of around 30 hydrometric stations, as well as the purchase of equipment and the construction of a building for the new service. The hydrological information system will also be renewed, with tested methods of transmission and data management;
- In the following years, it will transfer its know-how in operation and maintenance, while generating the income necessary to financially balance the operation of the hydrological service, thereby ensuring its sustainability.

The Congo Hydrological Service is jointly managed by the National Institute for Research in Exact and Natural Sciences (IRSEN) and the General Directorate of Hydraulics. They also work with the Economic Interest Grouping for Shared Maintenance of Waterways, as part of the global cross-border framework of the Congo-Oubangui-Sangha International Basin Commission (CICOS). In the early years, the AFD will also support a hydrological service training plan to reinforce its human resources. The private operator will be recruited with the assistance of OiEau, and will commence its activities in 2023.

## France - Financing industrial actions to preserve water resources

In terms of withdrawals and discharges, industrialists have made significant progress over the past 40 years. It is possible to go even further, but at the cost of major investments.

The aid granted by the water agencies is an incentive for operators. In 1982, the French Council of State considered that the fees paid (which will be used to distribute the subsidies) to the agencies were taxes. Therefore, the aid granted by the agencies is considered by the European framework as state aid. This hampers investment.

The European framework limits aid to 40, 50 or 60% of the selected amount of the project, depending on the size of the bidding company. Since 2014, this aid rate has been reduced to 0 if the investments are not completed 4 years before the publication of European standards.

### What is it about?

The IED (Industrial Emission Directive) of 2010 requires the implementation of BAT (Best Available Techniques) for certain sectors of activity (the list evolves over time). These BATs are defined in sectoral documents: the BREFs (Best Reference). The conclusions of these BATs define the performance levels associated with the techniques that these documents detail. When the BATs are revised, the performance levels defined in the BREFs change from "objectives" to "standards".

### Problem

The conclusions of the BATs, which are prescriptive, are published very shortly before their application date. If an industrialist has to invest in order to comply with the European standard, or even go beyond it, the fact that the standard is finalised very shortly before the obligation to implement it constitutes a major technical and financial risk. All the more so if he applies for aid from the agency.

### How can this pitfall be overcome?

Since the creation of the agencies in 1964, and before the decision of the Council of State, the fees collected by the agencies were not considered as "taxes of any kind". If the amounts collected were to become "real" fees, the aid distributed would no longer be considered as State aid.

### Another option

The BATs, which set the standards, must be implemented within 4 years of the publication of the BREFs. If we consider that the entry into force of the standards is the date of application of the BATs, and not the date of publication of the BREFs, the industrialists would effectively have 3 years to make the necessary investments to comply with these standards, and to be able to benefit from aid from the agencies.





# Funding

## Better application of the "polluter-user-pays" principle in the charges of French water agencies

The system of fees charged by French water agencies must evolve to respond to the environmental challenges on which it wants to act. One of the main objectives is to make them a tool to encourage behavioural change by applying the polluter-pays principle or, more broadly, the "user-pays principle" depending on the impact on the aquatic environment.

The reform of the charges for pollution and modernisation of domestic collection networks, currently under development, is a good illustration of this.

The pollution charge is currently calculated on the basis of cubic metres of drinking water distributed, which only has an indirect link to the pollution discharged. Based on the volume discharged instead of the volume consumed, the draft reform directly introduces into the calculation an adjustment according to criteria linked to operation of the sanitation system, reducing the amount of the

charge according to its purification performance.

In this way, pollution control efforts are directly taken into account when calculating the charge, in accordance with the polluter-pays principle". The adjustment also includes the performance of the effluent collection system, to incentivise its improvement. The charge for the modernisation of pollution collection networks is therefore abolished. This new system is intended to replace the system of bonuses for purification paid in the form of aid and therefore separate from calculation of the charge.

Secondly, to take into account the challenges of good management of drinking water networks and to provide a greater incentive to prevent leaks, the system is completed by a "drinking water" charge. This will be adjusted according to the knowledge and management of the distribution networks' assets, thereby providing an incentive to improve performance.

This reform project has been the subject of extensive consultation with all the stakeholders. The direct introduction of these adjustments in calculating the charges is intended to improve the incentive nature of this fiscal tool and respect one of the founding principles of the agencies' policy.



## Consultation on introducing a tax for management of the Vienne sub-basin in France



Covering an area of 2,195 km<sup>2</sup> with more than 3,300 km of rivers and streams and 20,000 ha of wetlands, plus 9 employees, since 1 January 2020, the Vienne Basin Development Syndicate (SABV) has become a Public Establishment for the Development and Management of Water (EPAGE), whose main remit is the management of aquatic environments and the prevention of flooding. In September 2020, new elected representatives took up their posts and environmental contracts were terminated and had to be renewed. At the same time, several municipal communities were considering introducing a tax for the Management of Aquatic Environments and Prevention of Flooding (GEMAPI). This combination of timetables has led to a different, joint approach to the implementation of the new action and funding strategies with three options:

1. define the overall action programme, cost it and correlate the funding needs;
2. take into account the current contribution of €3 / resident, and adjust the action programme with these resources (€360,000 of own funds) or;
3. find the right consensus between a fair, justifiable and acceptable increase for the populations and programmes.

The third option was chosen. The work therefore consisted in defining, in consultation, new operational guidelines linking water resource management and climate change, adapted to the granitic base-

ment in the territory.

With 11 proposed guidelines, each drainage basin then identified its priorities for action by theme and sub-basin. Finally, the whole programme was costed and all these elements were translated into a map, integrating investment and operating expenses after deduction of any subsidies. This data therefore represented the remaining costs for the community. Next, based on feedback and simulations of the evolution of contributions at €5 / resident, a serious game was organised with the elected representatives to define the intervention priorities. This strategy, based on the regulatory deadlines for achieving a good ecological condition and the efforts to be made, made it possible to provide feedback and approve an increase in contributions to €5 / resident, thereby justifying the levying of an equivalent tax on five municipal communities.

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# Funding

## Improving the Health of the Mulan River: Asian Development Bank Approves \$200 Million Loan for Integrated Ecological Improvement and Environmental Management in the Mulan River Basin

The Mulan River, a small yet important river in Fujian Province, PRC, originates in Xianyou County and drains into the East China Sea. While the Mulan River was once among the region's most polluted; the government has been working to promote ecological conservation, improve water quality and reduce flood risks in the river basin.

But despite the government's efforts, Mulan River Basin continues to face growing water supply shortages, continued flood risks, loss of ecosystem functions, and serious environmental degradation. Climate change is expected to result in more frequent and severe floods and droughts, causing more economic and environmental damage despite improved infrastructure. Natural forests and wetlands have disappeared or degraded, costing the area a key source of biodiversity. There is a risk that water quality in the Mulan River will continue to worsen.

In line with national policy, the Xianyou County Government (XCG) spent an average of CNY1.14 billion, or 21% of its average annual budget in 2016–2020 on ecological improvement and environmental management (EIEM). But the government budget is project-based and focused on post-incident response. Capital investment in EIEM remains inadequate because of limited funding availability and a lack of long-term financing mechanisms.

On 29 August, ADB approved a \$200 million loan for the PRC: Fujian Xianyou Mulan River Basin Integrated Ecological Improvement and Environmental Management Project. The project will demonstrate



sustainable EIEM, including:

1. strengthening institutions for climate-resilient management of the Mulan River Basin
2. promoting sustainable financing solutions
3. developing natural and built infrastructure

A key feature of the project is the piloting of a market-oriented financing mechanism to generate sustainable revenue to fund investments in EIEM in the Mulan River Basin. This includes establishing a tailor-made land value capture (LVC) method for funding investments in EIEM. Appraisal of historical land sales along the Mulan River Basin reveals that improved EIEM increases land value. Through

LVC, the local government can identify and retain the added land value because of EIEM.

The project will also support a feasibility study and design a Mulan River conservation and development fund for consideration by the local government to create incentives and increase and diversify capital investment in integrated EIEM.

Ultimately, the pilot financing mechanism under the project aims to demonstrate to the wider financial community that EIEM investments are financially viable. This will encourage private, institutional, and commercial financing for EIEM projects in the Mulan River Basin and elsewhere.

## Application of financial resources from taxes on the use of water resources via reimbursable funding Case study of the Piracicaba, Capivari and Jundiá (PCJ) river basins

The article analyses the use of reimbursable funding methods using financial resources from taxes for the use of water resources in the Union's rivers, in the Piracicaba, Capivari and Jundiá - PCJ river basins, which was made possible with the enactment of ANA Resolution 53/2020.

In this way, the River Basin Committee has greater governance and efficiency in applying the resources and achieving the objectives set out in the Water Resources Plan and, as a consequence, improving water resources management. A study of the history of collection and application of the resources col-

lected in the river basins has been carried out, with the aim of demonstrating that the amount applied is far below what is necessary.

The theoretical references used were studies carried out by the OECD for the National Water and Basic Sanitation Agency - ANA - and the ECOCUENCAS study carried out in partnership between the PCJ River Basin Agency Foundation and the International Office for Water. These studies highlight the weaknesses in setting targets for Water Resources Plans and their direct relationship to the amounts collected through taxes, as well as the World Bank's study on Water Resources Policy in Brazil and the work of hydrologist Patrick Laigneau on initiating tax collection in France.

Through a simplified simulation of the financial flow obtained with reimbursement of resources, we wanted to show that it is possible to expand the actions to be carried out and obtain better governance over achieving the Water Resources Plan goals. As a result, we hope to increase water safety and quality of life in the towns near the PCJ river basins.

Link to the full article:

<https://agencia.baciaspcj.org.br/wp-content/uploads/Artico-academico-Sergio-Razera-TCC.pdf>

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# Funding

## Climate finance benefiting the Senegal River



Water is at the centre of climate change debates and the COP21 held in Paris in 2015 was followed by several initiatives including the "Paris Pact on Water and Climate Change Adaptation in River, Lake and Aquifer Basins" as well as the "Global Alliances for Water and Climate". In 2016, in preparation for COP22, the African community launched the "Water For Africa" initiative as well as an appeal in the name of climate justice that alerts on the region's water security: Africa is today one of the most vulnerable geographical areas to the impacts of climate change, which compromises the continent's development and stability.

The Senegal River basin, framed by semi-desert regions, is shared by Guinea,

Mali, Mauritania and Senegal, all members of the Organisation for the Development of the Senegal River (OMVS). In a context of climate change marked by a rise in average temperatures and sea levels as well as more intense droughts and floods, integrated water resource management and the strengthening of the basin's resilience are major challenges for the region. However, OMVS's resource management tools and means of action are still insufficient to meet these challenges.

Financing the fight against climate change has been a priority for France since COP21. In this effort to redirect financial flows towards climate-friendly investments, an action was financed between 2019 and 2020 by the Adour-Garonne water agency and implemented by OiEau with the objective of bringing about an ambitious climate change adaptation project in the Senegal River basin, in collaboration with the Development Company of the Coteaux de Gascogne.

The incubation of this initiative has been successful as the project "*Strengthening the resilience of climate-vulnerable communities in the Senegal River Basin using a multi-hazard early warning system and enhancing adaptation capacity*" is now being processed by the Adaptation Fund under the supervision of the Sahara and Sahel Observatory. This fund is a financial tool of the United Nations Framework Convention on Climate Change, which is mainly financed by an international tax set up by the Kyoto Protocol.

## Financing the water cycle in Spain

The financing of the water cycle in Spain is based on the principle of cost recovery and the "polluter pays" principle. These principles are applied at the three administrative levels of the Spanish State, in accordance with the competences of each one:

1. At the local government level, municipalities levy a charge that fully covers the costs of the urban water cycle, both the drinking water supply system and the sewerage system. Esta tasa suele ser progresiva en función del consumo de agua, de forma que se penaliza a los grandes consumidores.
2. At the level of the regional governments (Autonomous Communities), an earmarked tax is levied, the purpose of which is to finance the construction and operation of wastewater treatment systems.
3. Finally, in the sphere of the Central Government, whose competences in water matters are exercised through the River Basin Organisations (Confederaciones Hidrográficas), financing is carried out through four channels:
  - 3.1. Through the cost recovery system, the beneficiaries of regulation works (dams) or distribution works (canals or waterworks) pay a fee, called a "regulation canon" and a "water use tariff", to cover the costs of construction and operation of these works.
  - 3.2. Through the application of the "polluter pays" principle, those who discharge into the public water domain pay a fee, called



the "discharge control fee". This fee is progressive in such a way that it penalises large volumes of discharges, higher pollutant loads and it takes into account the sensitivity of the receiving environment.

- 3.3. Through the collection of fees for the occupation or use of public water assets (aggregates, trees, pastures, etc.) or for hydroelectric production.
- 3.4. Through the General State Budget, given that:
  - a) the basin organisations carry out other functions whose beneficiary is civil society

in general: hydrological planning, water-course policing functions, control of the state of bodies of water or flood risk management.

- b) the Directorate General for Water itself applies funds from the General State Budget for actions declared to be of General State Interest and those that fall within its competence.

In this way, the entire water cycle in Spain is financed.



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

This revolution is accompanied by 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.

Through the actions and projects conducted by its members, INBO accompanies these changes worldwide by adapting to different contexts.

With the good of all in mind, INBO strives to produce collective intelligence, as this is a source of performance and creator of value.

***“ We need sustainable financial mechanisms to build and maintain water monitoring networks. Fees for the withdrawal of surface water and groundwater should be established to finance in the long run water resources monitoring networks. This is an efficient way to strengthen knowledge, control water demand and more broadly improve water resources management at basin level. In Thailand, and thanks to such robust financial systems, surface and groundwater levels, water quality and quantity are monitored and data is reported in a database that can be visualized, downloaded and shared. ”***

Ms. Tussanee Nettasana,  
Department of Groundwater Resources,  
Ministry of Natural Resources and Environment, Thailand

# Knowledge

## Transboundary Cooperation and Water Availability Assessment in the Amu Darya River Basin

Currently, despite the political will, there is no properly organized single system of water monitoring in the Amu Darya River Basin.

The current practice estimates actual water availability in the basin using the flow in a nominal section upstream of intake to Garagumdarya (Karakum canal). Water in this section is calculated by gauged flow at the nominal Kerki section plus water diversions into Karshi (Uzbekistan) and Karakum (Turkmenistan) canals. Then upstream water diversions for Tajikistan and Uzbekistan are XXX taking into account flow regulation by Nurek reservoir. Such complicated and rough estimation of river flow may lead to errors in the assessment of available water in the Amu Darya and, hence, to incorrect assessment of water balance's components, mainly, water losses in the river and the reservoirs of Tuyamuyun hydroscheme.

To ensure coordinated actions of the riparian countries on flow management, relevant rules should be developed and agreed. Then, on the basis of these

rules, a common method for water assessment and a methodology for calculation of river water balance can be proposed to riparian countries and the basin water organization BWO "Amu Darya". As part of the contract with the Ministry of Innovative Development of Uzbekistan, SIC ICWC is carrying out a research on the "Development of e-rules of flow regulation in the Amu Darya River basin", including also solution of the above mentioned problems.

To achieve visible results in water management, it is important to have single water monitoring at the transboundary level. To this end, gauging stations along the Amu Darya should be improved and automatized in key sections in Uzbekistan and Turkmenistan.

As a result of negotiations between Turkmenistan and Uzbekistan, a historic Agreement on management, protection and sound use of the Amu Darya water was signed between the Governments of Turkmenistan and Uzbekistan in July 2022. According to Article 5 of the Agreement, the countries agreed to



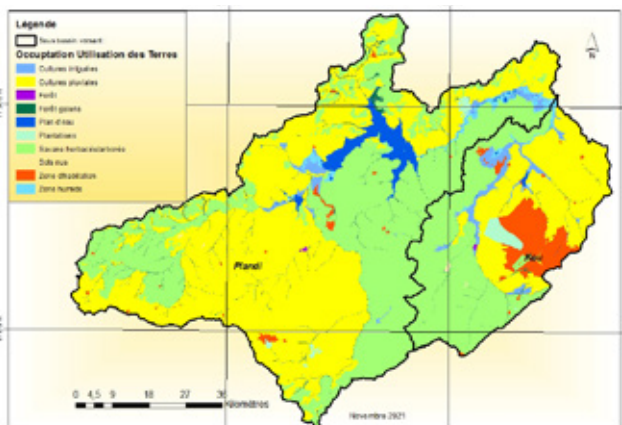
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exchange flow forecasts and the data on hydrometeorological situation in the Amu Darya basin and to jointly automate gauging stations along the River.

**Mr. Anatoliy Sorokin,**

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## Satellite imagery: inventory and diagnosis of wetlands for IWRM in Burkina Faso



© Mouhoun Water Agency; Caption: Land use in the Kou and Plandi sub-basins.

Since 2013, OiEau has been assisting the Mouhoun Water Agency (AEM) in the implementation of Integrated Water Resources Management (IWRM), with the technical and financial support of the French water agency Seine-Normandie (AESN).

One of the major components of the cooperation is the support to the development of the high-priority Water Development and Management Scheme (SAGE) of the Sourou-Samendeni system, according to a territorial and operational approach.

In this respect, a diagnostic study was conducted in 2022, on the identification of wetlands in the Kou and Plandi sub-basins (located in the upper Mouhoun basin).

The study consisted in a pre-location by satellite imagery of the said sub-basin which allowed the identification of 18 wetlands. The data obtained was used to make the first inventory of these ecosystems. The information was then verified and deepened through a complementary field survey.

In Burkina Faso, wetlands face multiple threats, including water and soil pollution. The degradation of these fragile ecosystems is due to demographic growth and the uncontrolled increase in market gardening and agro-sylvo-pastoralism.

In May 2022, an inter-institutional monitoring committee represented by the General Management of the AEM, the Permanent Secretariat for IWRM and the Permanent Secretariat of the National Council for Sustainable Development was set up with the support of OiEau.

The committee met in Koudougou to validate the results of the diagnostic study and initiate the planning of sustainable strategies for the preservation of fragile ecosystems. The stakeholders collectively prioritised the following solutions: the development of integrated wetland management plans, the restoration and protection of water bodies and ponds, capacity building for water users and awareness raising for the populations of the Kou and Plandi rivers.

# Knowledge

## Rapid assessment of biological diversity and ecosystem services in the Amazon Region



The Amazon Cooperation Treaty Organisation (ACTO), within the framework of its Biodiversity Programme for the Amazon Basin Region, is coordinating a multidisciplinary group of more than 100 experts from the Region, to produce a technical and scientific assessment on the status of biodiversity and ecosystem services in the Amazon Region.

The objective of the assessment is to provide available scientific and technical information on the state of biodiversity and ecosystem services in the Amazon Region as an important input to guide decision-making and public policies at multiple levels, taking into account the various stakeholders and territories in the Amazon, including different local planning tools and in accordance with their respective internal legal and administrative systems, in the regional context.

This study is developed within the conceptual and methodological framework of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), of which all ACTO Member Countries are part. The assessment will be comprehensive in focus, covering biophysical, economic, social and cultural perspectives. It is designed to support the implementation of the Convention on Biological Diversity and will be aligned, as far as possible, with the Convention's management and the socio-environmental processes led by UN agencies, such as the United

Nations Development Programme, the United Nations Environment Programme, or the World Food Programme.

The assessment will take into account the knowledge of indigenous peoples and local communities in the Amazon Region and will analyse the role of institutions in determining access, control, allocation, distribution of the components of nature and their contributions to people. It will also build on and take into account previous and ongoing studies by governments, research institutes, regional technical cooperation networks, non-governmental organisations and academia.

The development process for this study began in 2021 and is expected to be completed in December 2022.

The draft technical paper of the assessment and the summary for decision makers will be available for external expert review and comments on the ACTO platform.

## OiEau supports the Pôle de l'Eau de Dakar Initiative - An atlas of major scientific issues



At the Kick-Off Meeting for the 9th World Water Forum in 2019, the Senegalese « Pôle de l'Eau de Dakar (PED) » initiative was launched. The PED seeks to promote hydrodiplomacy and peace in Africa via several strategic pillars, including capacity building, knowledge and innovation.

**The Atlas of major scientific issues on water in West and Central Africa** was created against this background. The atlas provides an overview of current knowledge and reviews the major issues surrounding the topic of water, from local scale to cross-border basin scale.

The transfer of knowledge is central to OiEau's cooperation projects, which chose to share its experience via a chapter **dedicated to water governance in the shared basins** of the Niger, Volta, Congo-Oubangui-Sangha, Senegal River, Mono and Gambia River. This chapter highlights the specific features of cross-border cooperation, which must take into account the various national frameworks and sovereignty of States over their resource, upstream and downstream geopolitical relations, the context of collaboration between the different states and any historical conflicts. Finally, it notes the importance of dissemination and exchange of water-related data between States, in particular via the Water Information Systems (WIS). This chapter illustrates how integrated resource management on this complex scale can be achieved through stakeholder dialogue.

OiEau has also co-authored an article on local water governance in Senegal, presenting the pilot experience of the Somone basin.

The Atlas therefore makes a major contribution to accelerating the level of ambition for IWRM in Africa by facilitating information sharing and access. It also aims to define major scientific research perspectives.

OiEau believes that this knowledge-sharing initiative is essential and has expressed its full support in the preface to the Atlas.



To view the atlas:

<https://pole-eau-dakar.org/atlas-les-grandes-questions-scientifiques/>



# Knowledge

## The 11<sup>th</sup> evaluation report on implementation of the Sanitation Directive has been published, thanks to the SIIF-ERU

Waste water represents a major pressure on European freshwater bodies. A central piece of legislation in the European Union's water policy, the 1991 Urban Waste Water Directive (UWWDD) sets out the framework for action, requiring each country to provide the European Commission with an implementation report every two years for all conurbations larger than 2,000 population equivalent (PE), with data on the collection and treatment of their waste water.

This valuable data is used to assess the compliance of discharges, to ensure good protection of aquatic environments.

In order to guarantee greater reliability of results and better access to data for experts and the public, over the last ten years, OiEau has developed an

Internet tool called SIIF (Structured Implementation and Information Framework) which applies calculations adapted to each country in a homogeneous and largely automated way. It covers all the data and also calculates all the information and summary tables presented in the evaluation reports. In this way, OiEau has been able to produce reports 8, 9, 10 and 11, and is preparing the 12th, to be published in 2024.

The 11<sup>th</sup> report, published in 2022 presents, through 50 figures and 18 tables, the situation for waste water collection and treatment, the associated investments for each country, as well as a summary at European level. Based on the 2018 figures, it shows 617 million PE treated in nearly 22,000 treatment plants, of which 504 million PE

with tertiary treatment, i.e. including the treatment of carbonaceous pollution but also of nitrogen and phosphorus.

With 83% overall compliance, but up to more than 45 million population equivalents still to be properly treated, the situation is not yet fully satisfactory, despite continued investment by Member States. Since 2012, the figures show an overall improvement in waste water collection and treatment in Europe's cities, while at the same time highlighting regional or local disparities, showing the need for constant vigilance to ensure effective collection and treatment in the long term.

*The 11<sup>th</sup> report, published in 2022 accessible here*

<https://bit.ly/3MsmDdf>

## Reception of a Bolivian delegation in France



As a partner of Bolivia since 2015, the French Development Agency (AFD) supports the government in strengthening the energy and water sectors. Against this background of increasing collaboration, the AFD is funding a programme of "Support for integrated water management policies in Bolivia" for the Ministry of Environment and Water (MMAyA), starting in 2021 through the Fund for Technical Expertise and Exchange of Experiences (FEXTE). This cooperation programme is implemented by the OiEau (International Office for Water) and focuses on institutional capacity building activities and technical exchanges.

Within this framework, OiEau organised an exchange trip to France in April 2022 between the Misisuni Multipurpose Project (PMM, Bolivia) and the SCP (Société du Canal de Provence, France), in the presence of the Vice-Minister of Water Resources and Irrigation.

The Misisuni Multipurpose Project (PMM) was created in order to cover the urgent water needs of the population by harnessing the waters of the Cochabamba mountain range. It is managed by Misisuni, a public service entity whose purpose is

to provide drinking water, water for irrigation and generation of electricity. Misisuni is undergoing a major change project aimed at giving it the skills to offer direct distribution to consumers. This development poses challenges in terms of its economic model, internal organisation and governance.

The Misisuni Multipurpose Project is unique in Bolivia and there is no previous experience to draw lessons from, in terms of governance of the Misisuni company with respect to the challenges of institutional and organisational transformation.

Therefore, the experience exchange trip to France gave us the chance to learn about the successful management of a multipurpose project for the Canal de Provence and to strengthen the institutional and technical capacities of the entities in charge of the PMM, by exchanging experiences with the SCP and other French entities involved in integrated water management. The topics of discussion included: sectoral agreements (energy, drinking water, irrigation) and tariff policy, company organisation and governance, integrated resource management at basin level.

Stakeholders in the Misisuni dam were able to draw inspiration from the example of managing the Canal de Provence, to explore ways to improve its multiple-use model. This exchange of experience concluded with the signing of a cooperation agreement with the SCP.

# Knowledge

## Bio-Plateaux: better knowledge for better protection of the water resources of the Guiana shield

The BIO-PLATEAUX initiative reached a milestone in 2022. The involvement of partners from French Guiana, Suriname and Amapa State in Brazil has enabled concrete progress to strengthen the management of the Maroni and Oyapock pilot cross-border drainage basins.

In an exceptionally rich Amazonian ecosystem, the rivers of the Guiana Shield are affected by various sources of contamination. For example, illegal gold mining practices or solid waste have a significant impact on river quality. However, water is a fundamental social issue, for domestic use, navigation and economic activities.

In addition, the frequency of extreme events in a context of climate change is a growing challenge for the management of shared risks, in terms of floods and low water levels for populations and aquatic environments.

To deal with this set of challenges in a cross-border environment, BIO-PLATEAUX promotes a gradual approach, in which integrated management is based on the improvement of shared knowledge. Therefore, since 2019, many activities have been carried out aimed at better knowledge of each other, the water resources and their challenges. These have included the creation of cross-border technical groups and the production of a number of practical products (studies, joint campaigns, awareness-raising tools, strengthening of basin instrumentation).



On 29 April 2022, the focal points of the three territories - the Anton de Kom University in Suriname, the Amapa Agency and the Guiana Water Office (OEG) - officially announced, together with the International Office for Water, the launch of the pre-figuration of a cross-border Observatory by 2025.

BIO-PLATEAUX is co-funded by the European Union through the INTERREG Amazon Cooperation

Program (PCIA), the National Centre for Space Studies (CNES), the French Guiana Territorial Authority (CTG), the OEG, the French Office for Biodiversity (OFB) and French Guiana's General Directorate for Territories and the Sea (DGTM).

Available on the platform

[www.bio-plateaux.org](http://www.bio-plateaux.org)

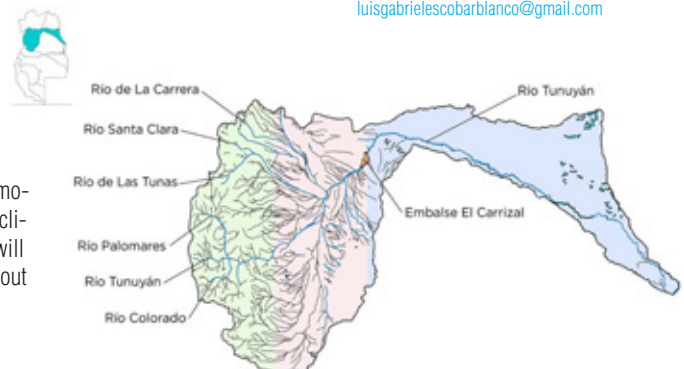
## Foresight diagnosis of the Tunuyán river basin (Argentina)

This diagnosis belongs to the strategic prospective process, applied to the hydrosocial and environmental cycle. The Tunuyán River crosses Mendoza -from the Andes to the Desaguadero river- and its lower basin lacks a prospective study. Ongoing research identifies critical processes and variables that shape possible scenarios. Its objective is to provide inputs to strategically plan water governance that recovers natural capital, leaving no one behind.

The take advantage of the upper sub-basin generated an ecosocial deterioration in the lower one. To verify it, descriptive data is collected - legal, political and territorial, environmental, geographic, climatic, historical, water framework. Different methodologies are used, among others, for the

exploration and prioritization of critical variables. In addition, this diagnosis aims to establish the following pertinent questions: Is it possible to restore the river? Is it viable? Is it useful? Is it mandatory? The work attempts to demonstrate the effectiveness of foresight at the service of strategic environmental management of water resources.

The work describes in the methodological part, how they have used the tools and techniques of prospective, to identify and group the variables and key factors of change, building a heptagon of variables: regulatory and institutional framework, political and territorial, environmental, demographic and social, hydrographic, climatic, economic, historical; that will be analysed later, when they carry out the foresight of the basin.



*This diagnosis has been published in "Prospectiva y estudios del futuro Epistemologías y experiencias en América Latina" available at:*

<https://cepcuyo.com/prospectiva-y-estudios-del-futuro-epistemologias-y-experiencias-en-america-latina/>

**Sr Luis Gabriel Escobar Blanco,**

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# PLANNING

In a context of growing demography, industrial and agricultural development, that create strong pressures on water, accentuated by climate change, ensuring sustainable access to water in quality and quantity, guaranteeing social equity and economic efficiency requires a strategic vision and the definition of management measures.

Integrated Water Resources Management (IWRM) is the appropriate response to these problems.

In order to move progressively towards IWRM and achieve changes in the use of water resources, a comprehensive and co-constructed approach, with the involvement of social, economic and political forces, is necessary.

After taking stock of the situation, identifying priorities and defining objectives, the implementation of the chosen solutions must be coordinated between all stakeholders and politicians.

This plan may be more or less detailed depending on the situation in the country, but it will identify the longer-term steps that will be required to achieve, over time, a balance between needs and available resources while respecting the proper functioning of aquatic ecosystems, anticipating and adapting to climate change.

**“ We are in a planetary emergency. We need to invest in long term environmental planning to meet the challenges of our time. We need to step up the implementation of technological, nature-based and societal solutions. At the EU level, we promote in particular the inclusion of Nature-based solutions (NBS) into basin management plans. NBS deliver multiple benefits for nature, people and the climate when planned at the right scale. ”**

Mrs Florika Fink-Hooijer,  
Director General of Environment, European Commission



# Planning

## 10 years of cooperation in the Stung Sen basin in Cambodia

Stung Sen is a drainage basin in the Tonlé Sap in the North-West of Cambodia, chosen in 2012 to be a pilot in setting up Integrated Water Resources Management (IWRM) tools adapted to the Cambodian context, covering three components: planning and governance, knowledge and information sharing, and training.

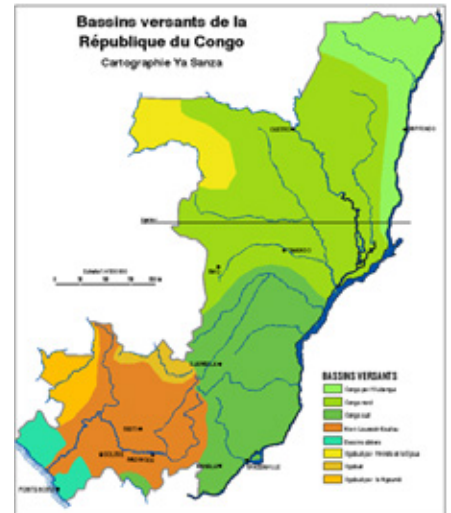
The project set up a basin committee, supported by a technical secretariat and thematic working groups that meet regularly to implement participatory IWRM in the basin, be consulted, receive training and participate in the planning process.

Support for content creation and the development of knowledge about the basin's water resources and the uses that impact them has made it possible to determine the characteristics of the basin and the issues related to the resource, and to define an action plan.

The first cycle concluded with an evaluation of the implementation of the 2016-2021 programme, the preparation of a scorecard and a summary report with guides containing information on how IWRM works in the different phases, with the aim of scaling up these initiatives in Cambodia.

Since 2012, the basin has been rapidly changing in terms of territorial development, land use and uses of the resource. In addition to this dynamic, there has been a proliferation of national initiatives and cooperation on issues related to water management (drinking water, irrigation, environment), sometimes carried out independently of the Stung Sen project and with great potential for the local population, but which have faced challenges in terms of coordination.

Faced with these developments, it is all the more relevant to continue capacity building and support for the IWRM pillars, by leveraging as assets the



knowledge, governance or integrated planning tools initiated during this decade, to respond to these new challenges. Data and references will need to be provided, ownership in basin organisations encouraged and harmonisation strengthened, through participatory prioritisation of users and local authorities, to use IWRM as a toolbox to reinforce coherence across the measures.

## Planning for IWRM and water user participation in West Africa

With the technical and financial support of the French water agencies, OiEau supports institutional cooperation projects for Integrated Water Resources Management (IWRM) in West Africa:

- In Burkina Faso, between the Nakanbé Water Agency and the Loire-Bretagne Water Agency (AELB) since 2010; and between the Mouhoun Water Agency and the Seine-Normandie Water Agency (AESN) since 2013.
- In Côte d'Ivoire, between the Ministry of Water and Forests and the AELB since 2021.
- In Senegal, between the Ministry of Water and Sanitation and the AESN since 2018.

In March 2022, OiEau brought together in Senegal all the partners (over 30 participants) for the sub-regional experience sharing workshop on water governance and river basin planning.

The stakeholders presented their IWRM models and the associated planning processes. The sharing of experiences illustrated the challenges to be over-



Family photo - representatives of national delegations, Somone Lagoon, Senegal. © OiEau

come regarding consultation with water users and operational implementation of planning tools.

Themed round tables, followed by a technical visit to the Somone Lagoon (a RAMSAR classified site) fuelled the discussions and encouraged the debate of ideas.

Although number of challenges concerning the coordination of planning instruments between the

administrative and hydrographic scales still remain, many operational solutions were identified during the group work.

All the participating countries agreed on the need to set up and finance a local structure to lead the basin authorities, in order to improve the involvement of water users and continue the consultation process.

The results of the sub-regional workshop were presented by the partners the following week, during the high-level technical sessions organised as part of the World Water Forum in Dakar.

# Planning

## Reactivation of exchanges between the MiRC and the MeRC



© U.S. Embassy Vientiane

The Mississippi River Commission (MiRC), established in 1879 by the U.S. Congress, provides water resources engineering direction and policy advice on the Mississippi River drainage basin that covers 41% of the United States. The Mekong River Commission (MeRC), treaty-established in 1995 between the four member countries of Cambodia, Laos, Thailand, and Vietnam, jointly manages the shared water resources and the sustainable development of the Mekong River.

The two river basins are very different yet share many challenges. In July, the

MiRC visited the Mekong River as part of its Sister River Partnership with the MeRC. The 2022 visit restarted, after a pandemic pause, the reciprocal annual exchanges between the two commissions dating back to 2011. The Partnership provides an opportunity for the two commissions to share best practices and lessons learned in climate change adaptation, integrated water resource management, drought management, flood forecasting, hydropower development and impact assessment, water demand and utilization, agriculture and food security, navigation improvement, fish passage, water quality and wetlands.

Through the discussions and official exchanges held during this reciprocal visit, the commissions identified the following areas for future collaboration and learning: international transboundary water management, dam safety training, hydropower development, improvement of weather forecasting and modeling, public engagement, operations and management of cascading dam systems, and the sharing and management of water data.

A highlight of the trip was the visit to the Xayaburi Dam in Laos, a run-of-river hydropower dam built on the lower Mekong. The MiRC first visited the dam in 2017 while it was under construction. The commissioners also visited the Tonle Sap Lake in Cambodia and spoke with community leaders of Phat Sanday (a floating village) about their challenges with flood, drought, climate, and food and water security.

The two commissions look forward to the next Sister River Partnership visit when the MeRC returns to the Mississippi River basin in 2023!

## Stimulating a dynamic for the preservation of water resources in a territory that is seeking its own development model: the SDAGE for French Guyana 2022-2027

After more than two years of participatory work and consultation with all the water stakeholders, the Guiana Water and Biodiversity Committee has just adopted its Master Plan for Water Development and Management (SDAGE) for the 3rd management cycle 2022-2027.

The Guiana hydrographic district, which differs from other French basins due to its Amazonian geographical location, must meet the unique challenges of protecting its biodiversity and aquatic environments, which are threatened by the pressures of gold mining, with significant and poorly controlled contamination, particularly in the case of illegal mining.

The work carried out in 2021 with the mining operators has made it possible to set coherent objectives for preserving the status of the water bodies and improving the status of the degraded water bodies (82% of the surface water bodies in good ecological status targeted for 2027).

The 3rd water management plan for French Guyana thus requires a firmer framework for certain uses and activities identified as having an impact (legal gold mining

activity, but also sanitation, agricultural and forestry exploitation, etc.) and a strengthening of operations to combat the scourge of illegal gold washing.

Ensuring the principle of non-degradation of the state of the water while reconciling the development of water resource uses as best as possible is a real challenge in a district where the population is expected to double by 2030. Supporting stakeholders in upgrading water management equipment, structuring water services and generally reconciling uses are all priorities and provisions included in this new SDAGE. Finally, the increase in extreme climatic phenomena, which have been severely felt over the last two years, as well as the resulting risks for social and economic life, must be rapidly better understood.

The SDAGE of the 3rd management cycle recommends the implementation of knowledge and monitoring systems adapted to local and regional observation scales (Guiana Plateau; Amazonian basin).



Rémi Boyer,

Project manager - International Office for Water

# Planning

## Boosting African basin organizations for better water management: an ambitious project

Last December, the French Development Agency (AFD) and OiEau signed a very ambitious partnership agreement involving 7 African river basins, for better water management in a climate change context.

This project, which started in January 2023, for a duration of 3 years, is part of the European Teams Europe Initiative, which gathers flagship programmes that "aim to produce concrete and transformational results for the partner countries or regions", in connection with European development actors.

The basins of the Niger, Nile, Gambia, Congo, Senegal, Volta and Lake Chad rivers will be at the heart of the project, whose main objective is to promote efficient and sustainable adaptation to the effects of climate change.

OiEau will ensure the overall management of the project, while providing technical and institutional assistance to the Transboundary Basin Organizations (TBOs), in order to build their capacities in integrated water resources management.

### This project will focus on 4 main areas

- **Improving the governance of the RBOs**, their institutional organisation and the setting up of new mechanisms for autonomous and sustainable financing.
- **The strengthening of water information systems**, the use and dissemination of their products, and the development of decision-making tools.
- **Support for strategic planning of measures and actions to improve river basin management**, as well as the programming and management of transboundary infrastructure and facilities, including those for the preservation of ecosystems.
- **The promotion of new ways of sharing experiences and exchanges** between the TBOs and the African Network of Basin Organizations (ANBO), member of INBO, created by IOiEau in 1994.

This project will make use of all the innovations that will allow optimizing its impact.

Thus, it is linked to a very important current event in space hydrology, the launch on 16 December 2022 of SWOT (Surface Water Ocean Topography), the 1st space mission which will study almost all the water on the Earth's surface!

SWOT is the latest in a programme of satellite altimetry satellites developed jointly by the French space agency (CNES) and the American civil space agency (NASA).

This mission was prepared by the SWOT working group created in 2014 and led by OiEau, which brings together French research, institutional, technical and operational actors: CNES, IRD, AFD, IRS-TEA, BRLi, CNR and CLS (see below).

This new project to boost TBO and transboundary cooperation is in line with the use of space hydrology in the pilot basins of the Congo, Niger and Senegal rivers, which has already been carried out.

## SWOT: the Earth's surface water monitoring satellite



On 16 December, the SWOT (Surface Water Ocean Topography) satellite, developed jointly by the French space agency (CNES) and the Ame-

rican civil space agency (NASA), was launched from California.

The result of 30 years of cooperation between the two countries, SWOT is the first space mission to survey freshwater stocks on a global scale. It will also provide a better understanding of ocean dynamics. Its data will be essential to help us better adapt to and understand climate change and its consequences on our planet.

This mission has been prepared since 2014 by the SWOT space hydrology working group, led by OiEau, bringing together research players (CNES, IRD, IRSTEA), institutional players (AFD) and private technical operators (BRL ingénierie,

CNR, CLS). Its objective is to promote exchanges and reconcile the visions of stakeholders with the needs of users, around innovative technologies.

OiEau was a partner, from 2016 to 2019, of a SWOT preparation mission applied to the Congo River Basin, which combined the classical "in situ" approach and the innovative use of spatial altimetry, to improve water resources monitoring and strengthen the implementation of IWRM (Integrated Water Resources Management) at CICOS (International Commission for the Congo-Oubangui-Sangha Basin).

A major asset for better water management and more effective adaptation to climate change.



# Planning

## WMO-INBO partnership to strengthen water information systems

In December 2022, the World Meteorological Organization (WMO) and INBO signed a Memorandum of Understanding for the development of actions aimed at:

- developing and improving water information systems based on hydrological data, used at both national and basin levels, and promoting data sharing;
- improving hydrological forecasting, assessment and management of water resources, at regional/transboundary scales. Actions will focus on the design of hydrological networks, data collection and validation, notably in the framework of the SWOT programme (see page 32).

As a specialized agency of the United Nations, WMO is mandated to establish international cooperation and provide technical coordination and support on the development of weather, climate and water related products and services.

Water resources in the world are under stress and increasing demand is adding further pressure, while climate change is increasing variability in the water cycle, inducing a greater number of water-related disasters such as floods, droughts, landslides, etc. and reducing the predictability of water availability and affecting water quality.

WMO has been developing several manuals, guidelines, and tools/products with experts from worldwide to support operational hydrology linking to Integrated Water Resources Management (IWRM):

### MCH

The Meteorological, Climatological and Hydrological database management system manages observational data from its three namesake areas under a single platform for the National Meteorological and Hydrological Services (NMHSs). It has been implemented in about 30 countries since 2009.

*For more information:*

<https://community.wmo.int/mch-meteorology-climatology-and-hydrology-database-management-system>

### WHOS

This Information system provides a fully compliant services-oriented framework linking hydrological data providers and users through a hydrological information system of systems enabling data registration, discovery and access.

*For more information:*

<https://hydrohub.wmo.int/en/whos>

### DWAT

The Dynamic Water Resources Assessment Tool is designed to assist planning and policy assessment and development. Its application allows the assessment of land-use changes within the basin over time, and of the impacts on water availability under a wide variety of scenarios, including climate change. This tool is intended to help users, particularly policy specialists and water resource managers, identify current and future water management challenges and compare those with current and past water resources availability, for better planning and sustainable water management.

*For more information:*

<https://public.wmo.int/en/water/dynamic-water-resources-assessment-tool>

### APFM

The Associated Programme on Flood Management works with over 30 expert partner organizations to support countries in the implementation of Integrated Flood Management (IFM) concept within the overall framework of Integrated Water Resources Management (IWRM) mainly to maximize net benefits from the use of their floodplains and minimize loss of life and livelihoods. The APFM provides guidance materials and builds capacities to help countries advance in the development of the IFM approach in practice. A focus is the support to project preparation for the implementation of integrated flood management approaches at local, national and transboundary levels.

*For more information:*

[www.floodmanagement.info](http://www.floodmanagement.info)

### IDMP

The Integrated Drought Management Programme provides advice and guidelines to communities, countries and regions affected by drought.

*For more information:*

[www.droughtmanagement.info](http://www.droughtmanagement.info)

### MyDEWETRA

is an open-source web-based system for real-time monitoring and forecasting of natural hazards like floods, landslides, and wildfires. The application is designed to be a single point of access to a wealth of information and data available at global, regional and local scale, provided by multiple authoritative institutions and agencies.

*For more information:*

[www.infomydewetra.world](http://www.infomydewetra.world)

### FFGS

the Flash Flood Guidance System is a flagship project which is necessary to provide operational forecasters and disaster management agencies with real-time informational guidance products pertaining to the threat of small-scale flash flooding. It uses remote-sensed precipitation and hydrological models.

*For more information:*

<https://public.wmo.int/en/projects/ffgs>

### HydroSOS

is an important tool to help National Meteorological and Hydrological Services delivering their services (providing hydrological products for informed decision-making). In addition, the system, underpinned by hydrological data sharing, meteorological forecasts and climate prediction information with advances from the global research community, will support the EWS4ALL and 2030 Agenda for Sustainable Development and, in particular, the broader global community in the area of water management.

*For more information:*

<https://public.wmo.int/en/our-mandate/what-we-do/application-services/hydrosos>



*"We are expecting the close collaboration between WMO and INBO which will support decision-makers, communities, and individuals to be better prepared for the weather, water and climate events, especially at the transboundary river basins."*

**Hwirin KIM, Ph.D**

Head - Hydrological and Water Resources Services  
Division (HWR)  
World Meteorological Organization



# On the road to the 30<sup>th</sup> anniversary

## "Water is politics": water demands political responses



Water demands policy responses, whether it is drought or floods. And from now on, "STOP IGNORING WATER"! This is the request that Loïc Fauchon, re-elected president in December at the 9th General Assembly of the World Water Council, addressed to the political leaders and economic and social decision-makers of the planet.

"The world's water situation remains very fragile, and this difficulty is most acute when it comes to the responsibility of sharing water for humans and water for nature," said Loïc Fauchon. The WWC Board's role will be to implement a strategy focused on securing access to water and sanitation for all, new non-conventional water resources, the links between water, energy, health, food and education, and the prevention of water-related disasters.

This work will be part of the preparation of the 10<sup>th</sup> World Water Forum to be held in 2024 in Bali in partnership with the Indonesian government.

To support the implementation of this strategy, Loïc Fauchon appointed Eric Tardieu, INBO Secretary General, as Vice President.



In 2024, INBO will celebrate its 30<sup>th</sup> anniversary. It will celebrate this anniversary in particular during its World General Assembly, planned in October 2024 in Bordeaux, France.

The aim is to renew INBO Action Plan around tightened priorities. It is also about presenting a modernized graphic identity and a renewed website.

A first survey has already been sent to the members to collect their opinions on the useful evolutions. In the coming months, do not hesitate to share with us your desires, your wishes for evolution, your proposals for priorities for INBO Action Plan which will be adopted, during its World General Assembly, for the period 2025 - 2027.

Participate in the survey :

<https://bit.ly/3XVQ3oS>



## INBO Handbooks: tools to guide stakeholders in resource management

Initiated in 2009 and now with 11 titles, this collection covers a series of converging topics, to address the theme of water resource management from different angles.



To see the full list of titles and available languages:

<https://www.riob.org/en/documents>





Interviewed during the 20th International Euro-INBO Conference, from 26 to 29 September 2022 in Annecy (France), partners shared with us their vision of INBO and its contribution to good resource management on their territory.



*For us in Slovenia, in the context of the European Union and beyond, INBO is a very well-established organisation, which shares knowledge and information on integrated water resources management in all parts of the world, with great success. Slovenia sees a strong potential for cooperation with INBO, as in the last five years it has become very active in transboundary water cooperation, including on a global scale. Indeed, we will hold the presidency of the UNECE Water Convention from 2024 to 2027 (see p. 11)*



**Aleš BIZJAK**

Ministry of the Environment and Spatial Planning - Office for EU Coordination and International Affairs - Slovenia



*We are going to host the EURO-INBO 2023 conference in Valencia. We are, of course, still reflecting on its programme, but we are particularly interested in two topics: the prevention and management of flood risks, because we already have solutions, but we need to think collectively about new ones; and then the uses of water in agriculture and wastewater treatment: how can we improve the efficiency of the use of the resource in this sector of activity subject to the laws of the global market? For me, the most important thing is to share problems and solutions with other European colleagues who work at the basin level.*



**Miguel POLO CEBELLAN**

President of the Júcar Hydrographic Confederation (Spain)



*Georgia has started its reforms in water resources management, and in November 2021 new legislation, fully in line with the framework of the EU Water Directive and other EU directives, was adopted by our government. We are also starting to prepare our river basin management plans and tools for the Equiri and Rioni rivers. So sharing experiences and best practices is very important for us. We know that the road is long, but these bilateral and multilateral contacts within INBO are very, very useful for us. Networking is a key issue.*



**Mia JAVAKHISHVILI**

Department of Environment and Climate Change - Ministry of Environmental Protection and Agriculture of Georgia



*Armenia is a water-rich country, but it is important for economic development to ensure a good distribution between all uses: drinking water, agriculture, industry and energy. Our current concern is to have reliable data, a water information system that allows all stakeholders to manage water resources efficiently, in terms of quality and quantity, to be able to take decisions with full knowledge of the facts and with reliable data. Armenia's presence at EURO-INBO is also an opportunity to recall the link between our country and Europe: water, and its democratic management, is a good approach to show that Armenia is one of the members of the European family.*



**Gayane GABRIELIAN**

Deputy Minister of the Environment. Ministry of Environment of Armenia.



*We think it is very important for our basin to share experiences with other basins. Many of the challenges we face in the Amazon are also shared by other basins. Everyone is looking for solutions! Sharing experiences is very valuable for capacity building, for identifying new technologies and for sharing knowledge on specific experiences in transboundary water management, which is different from national water management. Partnerships with other basins and joint actions could be built together.*



**Mrs. Maria APOSTOLOVA,**

Coordinator of the Strategic Action Programme (SAP) - Amazon Cooperation Treaty Organisation - OTCA



# Perspectives and challenges

## Dakar Action Plan for River, Lake and Aquifer Basins



The 9<sup>th</sup> World Water Forum in Dakar from 21 to 26 March 2022 was the first forum to include a high-level political segment dedicated to basins. Improving the management of water resources to achieve sustainable development goals makes basin management a priority. Basin organisations enable this management and basin cooperation brings concrete benefits to people through joint and sustainable management of resources across borders.

To achieve the goals, basin organisations, together with all stakeholders, need to accelerate the implementation of actions in their basin management plans.

It is on the occasion of this new segment that the Dakar Action Plan for river, lake and aquifer basins was developed by INBO, UNECE, OMVS and the Swiss Confederation. Representing a "blue deal" for water and sanitation security for peace and development, it was adopted on 21 March 2022 during the segment dedicated to basins. It aims to achieve the SDGs through cooperation, planning, the definition of a legal and institutional framework for basin organisations, and the search for innovative financing.

Five priority commitments define it:

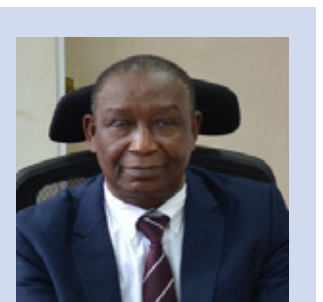
- To confirm the role of basin organisations and their effectiveness in the service of water security, peace and sustainable development.

- Enhance the positive impact and concrete results produced by basin organisations, particularly in terms of economic and social development, shared development and ecological approach.
- Strengthen visibility and institutional frameworks, especially for transboundary basins
- Promote innovative and autonomous financing mechanisms at the scale of basins, especially transboundary ones.
- Strengthen planning and management between uses at basin level.

The Action Plan has already gained the political support of 75 organisations from 45 countries, representatives of governments, international organisations, donors, national and transboundary river, lake or aquifer basin organisations, local authorities, civil society and the private sector.

Find and sign the Dakar Action Plan here:

[www.riob.org/sites/default/files/2022-03/Plan%20daction%20Dakar%20VF.pdf](http://www.riob.org/sites/default/files/2022-03/Plan%20daction%20Dakar%20VF.pdf)



*ANBO's participation in the Dakar WWF was a great success in terms of organisation, participation, care of members, and animation and communication in the stand. The launch, during the forum, of the TEI (Team Europe Initiative), a capacity building initiative for African water actors in the context of climate change, is worth mentioning. The TEI aims, among other things, to strengthen the African cooperation and coordination platform in the institutional governance of transboundary waters, continental water policies, global integrated management, and investment promotion.*

**Mr. Sylvester MATEMU**  
Executive Secretary of the Nile Basin Initiative, President of ANBO

# Perspectives and challenges

## Water security and biodiversity: two ambitious initiatives

Exacerbated by the undesirable effects of climate change, the threats to water resources (uncontrolled industrial development, rampant urbanisation, intensive agriculture, etc.) are coupled with threats to biodiversity.

Water is unstable in terms of its availability and distribution, with a cycle marked by multiple interactions with ecosystems, and is essential for maintaining natural environments and the species they shelter in good condition. It is therefore important not to separate the management of water from that of terrestrial ecosystems.

The world water community has become aware of this issue and two major players have recently launched initiatives in this direction



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### The Water and Nature Declaration

Launched at the World Conservation Congress in Marseille (France) in September 2021, together with the World Water Council (WWC), INBO and The Nature Conservancy (TNC), the main objective of the "No water security without ecological security / No ecological security without water security" initiative is to call for a strengthened and sustainable dialogue between the water and nature communities, to make water management and nature conservation policies more coherent, and to accelerate the implementation of Nature-based Solutions (NBS). **This means that each signatory must commit to working towards better integration of ecosystems and biodiversity into water sector activities.**

*"With over 80 signatories so far, including environmental NGOs such as The Nature Conservancy, private water companies, civil society organisations and government agencies from around the world, this Declaration has succeeded in uniting diverse stakeholders in the water sector. This is exactly the kind of unity we need to get things done.*

*I look forward to building on this momentum as we approach events such as COP 27 Climate and the UN Water Conference, where the stakes will be even higher. Our goal is to integrate the key concept of the interdependence between ecological integrity and water security: we cannot have one without the other. And it is not too late to sign the Water and Nature Declaration".*

**Ms Erickson**

Executive Director for Water Security - The Nature Conservancy (TNC)

Read the Declaration:

<https://bit.ly/3b7RJs1>



### An action plan for water security

During the 9<sup>th</sup> World Water Forum in Dakar, more than 80 mayors and local and regional governments signed the Mayors, Local and Regional Governments Action Plan for Water Security, at the end of the OECD and United Cities and Local Governments of Africa (UCLG-Africa) Roundtable of African Mayors for Water Security.

This Action Plan proposes concrete measures to implement the 12 OECD Principles on Water Governance adopted since 2015 by nearly 200 170 stakeholders.

Thus, mayors and local and regional governments recognise :

- their key role at the local level to engage stakeholders, and manage water at the functional scale, leveraging their proximity to water users, citizens, utilities, businesses, civil society and basin organisations;
- their key role in conserving natural ecosystems and protecting cities and territories from floods, sea level rise, drought and pollution;
- their common prerogatives in public policies for drinking water, sanitation and hygiene, whatever the level of decentralisation and institutional organisation of the countries;
- their capacity to test, experiment and deploy innovative solutions for resilient, sustainable, inclusive and circular cities and territories, drivers of economic growth and well-being.

Find the Action Plan:

<https://bit.ly/3zcgiof>





# A meeting with...

## International Scheldt Commission: Ode to the Twait shad



On 2 December 2002, by the Treaty of Ghent, the International Commission for the Protection of the Scheldt was transformed into the International Scheldt Commission (ISC). Its mission was extended from a purely protective role and ensuring the improvement of the water quality of the Scheldt to a mission that considers the objectives of the Water Framework Directive (WFD), later followed by the Flood Risk Directive. And the geographical area has also been extended to an area stretching from the north-east of Paris (with the Somme) to the south-west of Rotterdam (Lake Grevelingen). In 2022, it will be exactly 20 years, time to look back for a moment, but also time to look forward.

Great progress has been made in terms of surface water quality during this period: in 2000, when the WFD was voted by the European Commission, the Scheldt was still largely a dead, polluted, contaminated and lifeless river. A large part of the work consisted of reconciling the different measurements made by the five different services and setting up a data flow, which was then transformed into maps and summary tables. The conclusion of the recent Triennial Report 2017 - 2019 is that the Scheldt district is one of the European districts with the lowest sustainable water quantity per capita of all. The number of monitoring points was increased from 14 to 37, which resulted in much more and

better information. Each ICE party has established a protocol to ensure the integrity of the sampling. The physico-chemical quality elements were measured monthly, analysed and compared by ISO 17025 certified laboratories. The chemical status of a water body is determined according to the concentration of 41 substances for which environmental quality standards (EQS) have been defined at European level. The overall water quality in the Scheldt District has improved significantly, but the status remains vulnerable, and good status and permanent potential have not always been achieved. Parameters such as oxygen, organic matter, nutrients and metals have improved significantly; a slow improvement has been observed in the biological status, while some parameters, such as polycyclic aromatic hydrocarbons (PAHs), remain problematic. Fish, some of which, such as blueback herring, had not been seen for more than 120 years, returned to the Scheldt.

Unfortunately, in April 2020 a particularly serious organic pollution accident: the equivalent of 3,000 containers of beet pulp spilled into the Scheldt at Escaudoeuvres. Oxygen levels immediately plummeted to near zero: all fish and life requiring oxygen disappeared. No immediate warning was given because the pollution was "organic" and not chemical, and was supposed to have no impact on living organisms or navigation. A false conclusion, unfortunately. But the Flemish Environment Agency (VMM) decided to intervene massively by adding

oxygen to the waters of the Scheldt on 21 April 2020. By coordinating with De Vlaamse, the Agency for Nature and Forests, the Institute for Nature and Forest Research, the local fire and civil protection services, Aquafin and Air Liquide, the deployment of aerators and the addition of extra water, the pollution was diluted and the mass mortality of the fish in Oudenaarde was prevented. Volunteers from Wallonia and Flanders also helped to transfer the surviving fish to nearby healthy waters. Since then, a new warning and alarm system for the Scheldt has been put into operation and the working procedures at the various main warning stations have been strengthened.

As far as flooding is concerned, we in the Scheldt district narrowly escaped the "water bomb" that hit our colleagues in the Meuse-Rhine district in July 2021, the impact of which was catastrophic. Hydrometric experts from France, the Netherlands, Belgium, Luxembourg and Germany concluded that such an event, which was statistically completely out of range, could not be predicted, but that the models could be refined, that the links between the weather forecasting services and the hydrologists of the departments concerned could be improved, that agreements had to be made on who could announce which intervention code and that the alarm procedures had to be activated more quickly. Flanders is completing its Sigmaphan, launched after the 1976 floods, and is now making the Hedwige-Prosperpolder a controlled flood zone. These zones, which can fill up in the event of flooding or bad weather, have already worked, including in July 2021.

For the future, efforts to improve surface water quality must be intensified. A list of new substances of interest for the Scheldt has been drawn up to monitor them. Recently, the high concentrations of PFAS in the soil and water around Antwerp and in the Ghent-Terneuzen canal have attracted a lot of attention. Dealing with these "eternal chemicals" will be a major challenge: the form of these substances can be changed, but they will always be present. Hydrologists will increasingly have to take into account the impact of climate change: long droughts and sudden heavy rains will be our lot. Finally, all the efforts that need to be made will cost fistfuls of money, while we will only see the results of the investments decades later. But we must persevere. That is the lesson of 20 years of the Treaty of Ghent. That is the tribute we must pay to the False Shad, which, after 20 years of effort, has decided to return to the Scheldt.



**Leon Dhaene**

Secretary General - International Scheldt Commission





# A meeting with...

## The Amazon Cooperation Treaty Organisation (ACTO)



### Why did you decide to become a member of INBO ?

We believe that it is very important for our basin to share experiences with other basins. Many challenges we face in the Amazon are also shared by other basins. Everyone is looking for solutions !

Sharing experiences is a very valuable help for capacity building, for identifying new technologies and for sharing knowledge about specific experiences in transboundary water management, which is different from national water management. Partnerships with other basins and joint actions could be built together.



**Ms. Maria APOSTOLOVA,**

Coordinator of the Strategic Actions Programme (SAP) - Interview carried out during the 20<sup>th</sup> Europe-INBO International Conference - From 26<sup>th</sup> to 29<sup>th</sup> of September 2022 - Annecy (France)

<http://otca.org>

### Could you present your organisation and the main issues you address ?

The Amazon Cooperation Treaty Organisation (ACTO) is an intergovernmental organisation of the eight Amazon countries: Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname, and Venezuela.

It is based on a treaty signed by the countries in 1978 with the aim of cooperating and having a political dialogue on common problems we face in the Amazon.

Currently, the ACTO is working on issues that correspond to its institutional Strategic Agenda and the Strategic Action Programme – SAP - that the countries agreed on in 2017, for the integrated management of water resources.

Specifically in the area of water resources, this agenda focuses on strengthening integrated water resources management (IWRM) at the national and regional levels, on institutional adaptation to climate change, and on knowledge management, while also focusing on regional monitoring of water resources and environmental issues.

### Data sharing and information system : what specific work are you doing at ACTO ?

Last year, the ACTO inaugurated the Amazon Regional Observatory, located at the ACTO headquarters in Brasilia. It serves as a reference centre for exchange and information flow, between the different governments, civil society and academic research institutions of the member countries.

The structure of the Observatory is based on different modules related to the main themes of the Strategic Agenda. There is a module for water resources, CITES species, forests, biodiversity, indigenous peoples, and soon climate change.

As part of the Amazon Regional Observatory, we also have a module specifically dedicated to monitoring, especially for data sharing. There are two

regional monitoring networks that provide data for this module: the Amazon Hydrological Network and the Amazon Water Quality Monitoring Network.

Both networks provide data collected in the countries, by the countries. This data is presented in the Amazon Regional Observatory. The data also provides information to the Regional Situation Room for Water Resources, which operates in the ACTO. It will soon be linked to similar Regional Situation Rooms in the countries with the support of the Amazon SAP Implementation Project (ACTO/UNEP/GEF).

We are working to expand the Observatory to include new issues relevant for the basin. We want to expand data collection and sharing and to be able to incorporate more advanced, innovative technologies to complement the data with satellite data or space hydrology, because in a so vast basin, more than 6 million square kilometres, you cannot only collect data on the ground ! In this sense we are exploring possibilities for technical collaboration with other partners in the Amazon including IRD and OIEau.

### The Amazon basin is a textbook case of transboundary water resources management, how do you get 8 countries to work together?

The countries agreed on the Strategic Action Programme, which is built on a common vision for the Amazon. They agreed on the major issues that need to be addressed in the basin, and among these issues the first was water pollution, followed by deforestation, loss of biodiversity and another very important one is extreme hydrological events that affect the basin in all countries. Climate change is a problem for local communities and water supply in nearby cities. Erosion and sedimentation affect the basin and also the infrastructures that are built in the basin. These problems are a common concern for the countries.

### Physical

- Outflow: 220,000 to 300,000 m<sup>3</sup>/s in the rainy season.
  - Length: 6,992 km
  - Surface area of the river basin: 6,118,000 km<sup>2</sup>
  - Hydrographic units level 4: 637
- Main tributaries: Putumayo, Japurá and Negro rivers (northern slope), Juruá, Purús, Madeira, Tapajós and Xingú (southern slope).

### Hydro-climatic hazards

- 50% from floods
- 19% from drought
- 14% landslides
- 11% by landslides
- 4% by forest fires
- 2% by torrential floods
- 0.3% due to water deficit and mudflows

### Biodiversity and Ecosystems

Endemic species:

- 30,000 plant species
- 3,000 fish species
- 384 species of amphibians
- 550 species of reptiles
- 950 species of birds
- 350 species of mammals
- 57 species of primates



# INBO'S KEY FIGURES



## YEAR OF CREATION

1994



## 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 2022.



## 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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