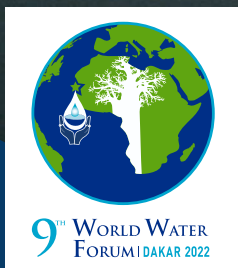




Newsletter **INBO**



www.riob.org

January 2022 - n°29

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Cover:

We warmly thank Mr. Yves Barou for the loan of his photo, taken from the book "*Daandé Maayo, en descendant le fleuve Sénégal*"; Yves Barou and Djibril Sy, Editions Tohubohu, 2020 - www.tohubohu.paris - This book is sold for the benefit of La Liane, an international solidarity association to get young people off the streets, to help women, to improve their living conditions until their rights are respected.

Edito



This is the new issue of INBO Newsletter, for a year 2021 still strongly marked by the COVID-19 pandemic. For some regions of the world, the second half of the year has certainly allowed the resumption of physical meetings and face-to-face events. We were thus able to travel and have the pleasure of exchanging with a number of you at the sessions of the Meeting of the Parties to the Water Convention (in Geneva in September), at the second meeting of stakeholders in preparation for the Dakar Forum (in Dakar in October), at COP26 (in Glasgow in November), and at the IWRA Congress (in Korea in December).

On a global scale, however, relations have not yet resumed "as usual", and we know in any case that our modes of networking will continue to be modified and enriched by the lessons learned from this health crisis.

INBO thus continued and developed the organization of trilingual thematic webinars during this year 2021: this remote format made it possible to gather a renewed public, for whom it is usually difficult to physically participate in international events. We are very pleased with the great success of these working meetings, which, month after month, have developed the priorities of INBO's action plan adopted in 2019.

2021 also marked the acceleration of the preparation of the World Water Forum planned in Dakar in March 2022. INBO is very strongly committed, both through the thematic process, around the main priorities for the basins, such as adaptation to climate change, shared information systems, transboundary cooperation. But INBO is also mobilized for the organization, for the first time during a World Water Forum, of a day dedicated to basin organizations. Indeed, basins are platforms for dialogue, either between countries in the case of transboundary basin organizations, or between various water users in the case of national organizations. Finally, our two new manuals will be unveiled in Dakar: one is dedicated to water policing, the other to city-basin dialogue, in cooperation with the IWA. Finally, Dakar will be the occasion to hold a short statutory general assembly. The Kingdom of Morocco, in view of the pandemic, has agreed to extend its presidency until 2024, the year in which we will again hold our major world event.

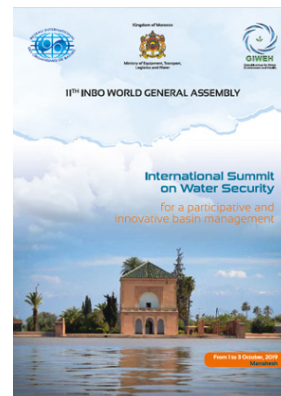
Please let us know about your projects and proposals for cooperation. Until then, be well in your pools!

Mr Eric TARDIEU, Ph. D.,
General Secretary

Action plan

INBO Work Program 2019-2021

Promotion of water management at basin scale through structured basin organizations, with proper governance, competencies and knowledge, as well as sustainable financial mechanisms for IWRM.



Find out more on our website

www.inbo-news.org



Message from the President

The experience acquired by INBO over the years shows that it is unquestionably at the level of basins, rivers, lakes and aquifers, whether national or transboundary, that the actions necessary for an optimal management of water resources must be implemented or strengthened, on the basis of a real upstream-downstream solidarity, while ensuring the involvement of the authorities and the public, of the representatives of the various economic sectors, of the local authorities and of the associations which work on the ground, and which are the real actors of change. Also, by assuming the presidency of INBO for the period 2019-2022, Morocco reaffirms its commitment to the international water community, with the aim of promoting the various opportunities for international and regional cooperation, and supporting the exchange of experiences and good practices in favour of an integrated and sustainable management of this vital resource.

We also reaffirm that, due to the health crisis linked to Covid19, Morocco is ready to ensure, in accordance with the partners' request, the presidency of INBO until 2024, date

which will coincide with the celebration of INBO's 30th anniversary, a decision which will be taken during INBO Statutory General Assembly, organized on the fringe of the World Water Forum of Dakar.

This next Forum is of great importance for INBO and for water resource management at the basin level. Indeed, during this international event, and for the first time, a day will be entirely dedicated to water resource management at the basin level (see p. 52), whether transboundary or national. And in this context, it is important to underline that this Euro-INBO conference in Malta is an important milestone in the preparation process of this day, which will undoubtedly allow giving basin management all the attention it deserves, especially through the commitment of the stakeholders, thus allowing to converge towards tangible solutions for better sustainable water management in the context of climate change.

*Intervention of H.E. Minister Baraka,
INBO President, during the Euro-INBO Conference in Malta on 9 December 2021*



HE Minister Baraka, INBO President, during the Euro-INBO Conference in Malta

Since the beginning of its presidency of INBO in 2019, the Kingdom of Morocco has endeavoured to improve coordination between water stakeholders, the number 4 priority of the network's work programme. Morocco has stepped up this approach in its own policies, particularly for its national programme on drinking water supplies and irrigation (2020-2027) in the short term and the National Water Plan (2020-2050) on a more long-term basis. Ministries and regional governments have cooperated both on their design and their implementation, in order to coordinate technical approaches as well as political decisions, for a synergistic approach between public policies, an essential basis for sustainable regional development. Water should be a part of all sector-related debates and strategies. It is the significant responsibility of basin organisations to uphold this cross-sectoral approach and this dialogue, and this essential role could be further consolidated. Through the exchanges of experience and the sharing of knowledge that it organises, INBO will continue to play a role in boosting this cooperation.

Mr Omar BENJELLOUN
Operational President of INBO

INBO in the major world water events 2021

UNECE - Water Convention

INBO co-organized with the UNECE the 5th working meeting of the Network of Basins Now, about twenty pilot basins to share their experiences on adaptation to climate change in transboundary basins.

📅 26 February 2021



Agua y tu ciudad

During the webinar organised on 16 March 2021 by CONAGUA and UNESCO, the Secretary General of the International Network of Basin Organisations (INBO) was invited as an international expert to give a testimony on the challenges related to planning at the river basin level.

📅 16 March 2021



ERS2021 – European River Symposium 2021

The EU Biodiversity Strategy 2030 and the Green Pact are shaping water management in Europe. To inform on the state of rivers in Europe, to present recent examples of restoration, to comment on field projects and on European policies in the process of being revised, such was the objective of this symposium co-organised by INBO and its partners.

📅 26 & 27 May 2021



IWRA - One Water, One Health: Water, Food and Public Health in a Changing World

📅 June 7th-9th, 2021



IUCN - World Conservation Congress 2021

INBO organized several events on the management of aquatic ecosystems and biodiversity, as well as on the dissemination of SFNs and adaptation to climate change

(see p. 55 the "Ecological Security/Water Security" initiative)

📅 From 03 to 11 September 2021

📍 Marseilles





UNECE - 9th session of the Meeting of the Parties to the Water Convention

Estonia is now chairing the Meeting of the Parties for the next 3 years. INBO continues its contribution to the new work program, especially around shared information systems, and support to the African countries involved in acceding to the Convention.

📅 From 29 September to 1 October 2021



COP 26 Climate

"Water is the first victim of climate change" is the message INBO always reminds us of, with a special focus this year on financing adaptation projects.

📅 From 1 to 12 November 2021

📍 Glasgow



OECD - 15th Meeting of the Water Governance Initiative

The initiative launched in 2013 is continuing its work on the 12 principles of water governance, notably through the monitoring of indicators, and, from now on, a special focus on Africa.

📅 27 & 28 September 2021



17th IWRA Congress

Foundations for Global Water Security and Resilience: Knowledge, Technology and Policy

📅 29 November to 03 December 2021

📍 Daegu (Korea)



Declaration No water security without ecological security No ecological security without water security

4 September 2021, Marseille



Find more information on our website

www.riob.org/agenda



A look at network's activities

The 18th International EURO-INBO Conference



The European public health situation and the numerous travel restrictions have had a major impact on international conferences. As such, the 18th International EURO-INBO Conference was held virtually for the first time, fully online, on 9 and 10 November 2020.

Sessions were particularly well-attended despite these unique circumstances, and INBO is delighted to have recorded over 306 registrations from 47 countries.

This gathering was structured around 4 interactive workshops.

Find the presentations from speakers on INBO's website:

<https://www.riob.org/fr/agenda/euro-riob-2020>

This year, at the invitation of the Maltese authorities, the 19th International "Euro-INBO" Conference will take place from Wednesday 8 to Friday 10 December 2021 with an online format, given the uncertainty surrounding the development of the COVID-19 pandemic. For this year's conference, organisations, administrations and other stakeholders interested in Integrated Water Resources Management at basin level will be invited to take part in the event and share their experiences over the course of 4 themed sessions and one workshop.

For more information on the programme, please visit INBO's website:

<https://www.riob.org/fr/agenda/euro-riob-2021>



"The challenges facing the water sector are not unique to a single river basin or country, meaning that the knowledge developed in each river basin can be useful for other basins. INBO is offering an important opportunity to share this knowledge, not only between European partners but also between a wider range of river basin managers around the world. Hosting the EURO-INBO in Malta will lend the conference a European dimension, facilitating discussions on the quantitative issues that are becoming increasingly important in the context of Europe, given the impacts of climate change in addition. The two main issues that will be addressed during the December conference will be the quantitative management of water resources and the role of economic instruments in basin management, with a particular emphasis on their role in encouraging efficient water use.

The EURO-INBO conference will also take place after the European Water Forum, thereby providing an important opportunity to facilitate communication between basin authorities and water managers in Europe and the Mediterranean."

Mr Manual SAPIANO
Director General of the Maltese
Energy and Water Agency



A look at network's activities

19th “EUROPE-INBO” international conference for the Implementation of the European Water Directives



150
participants

5 plenary sessions

1

Workshop on water and digital

5

Executive secretaries of international basin Commissions

5

Water directors

70 countries

The 19th International Conference of the Europe-INBO was held at the invitation of the Energy and Water Agency (EWA) of Malta, from Wednesday 8th to Friday 10th of December 2021.

Organizations, administrations and other stakeholders interested in Integrated Water Resources Management (IWRM) at basin level participated in the event and shared their experiences on the implementation of European water directives!

- Four thematic sessions:
 - Session 1. Engaging basin actors in the evaluation and evolution of the Water Directives
 - Session 2. Economic tools for basin management: integrating environment and biodiversity in cost-recovery
 - Session 3. Sustainable quantitative management of water resources
 - Session 4. Special panel “International & transboundary cooperation for basin management”
- One workshop on a “Digital technology at the service of basin management and the preservation of aquatic biodiversity”

The conference concluded with **the Malta Declaration**, which will now be carried forward both at EU level and in the preparatory process for the Dakar Forum.

The Declaration emphasises in particular :

With regard to the EU and associated countries in Eastern Europe and the Mediterranean :

Accelerate action and continue efforts, beyond the ambitious deadline of 2027 for achieving Good Status of Water Bodies,

Use the new technologies available (innovative tools, imagery and satellite data) for data production, processing and dissemination,

Adopt and use tools to better identify the pressures linked to water uses, the state of ecosystems, and to know the economic contribution of all categories of stakeholders to the fair recovery of costs based on the user-polluter-pays principle.

Use the possibilities of equalisation between Member States, geographical areas and economic sectors to facilitate financing, in particular by strengthening upstream-downstream solidarity.

Promote River Basin Management Plans as integrating documents and tools

Consider new measures in the face of climate change, in terms of

- risk zoning, prevention and protection of populations
- control of water demand and overconsumption,
- Use of alternative techniques, particularly for navigation, agricultural production, hydroelectricity and invasive species,
- use of non-conventional resources and recycling of treated wastewater, and aquifer recharge,
- the use of nature-based solutions.

Provide additional financial means to implement these measures.

To the international community at the Dakar 2022 WWF:

- Involvement of all users
- Adaptation of funding
- Cooperation

Find the presentations and the Malta Declaration on INBO website:

<https://www.riob.org/en/events/europe-inbo-2021>

A look at network's activities

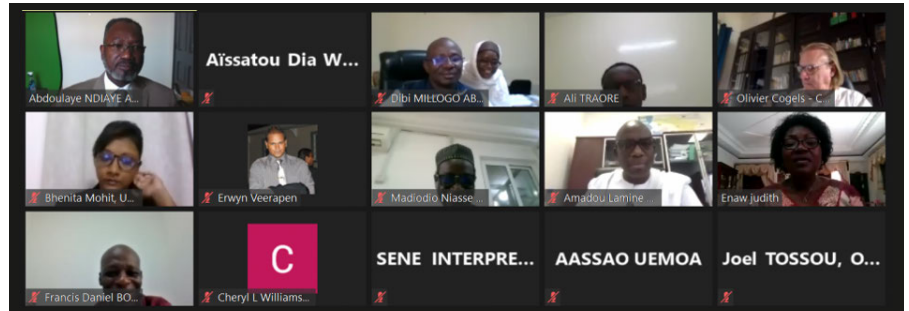
The African Network of Basin Organizations – ANBO

“Over the past two months, ANBO and its Secretariat, managed by OMVS, have worked relentlessly to complete the UNDP-funded project to improve capacity building and knowledge sharing among ANBO members.

This project has been very useful because it has not only reaffirmed ANBO's position as a functional unit for ensuring sustainable water use on the continent, but also for increasing and giving greater visibility to the role of basin, river and lake organisations in promoting water cooperation, in building the capacity of its members, and those of basin organisations in other countries, but also in advancing the UN Sustainable Development Goals (SDGs), which directly concern basin organisations and are supported by AMCOW, the African Ministers' Council on Water.

ANBO has been going through a difficult period, due to lack of funding. But we hope that our Strategic Action Plan, developed by experts and supported by the project, will allow ANBO, in the very near future, to be a better lever, a functional and dynamic tool in the hands of the Ministers of Water to promote cooperation in the field of water on the continent, and thus to allow a strategic and sustainable management of this resource, essential for economic development.”

Mrs. Judith ENAW
President of ANBO



The African Network of Basin Organisations held its last Assembly in 2019 in Tunis. Since then, it has tried to follow the Roadmap and the Action Plan adopted by its participants.

This Action Plan 2020-2024 is based on 4 priority areas of action:

- Strengthening water governance and cooperation in existing basin organisations and supporting the creation of new basin organisations;
- Mobilising and connecting members and partners for more effective engagement and influence in water-related policy processes and debates;
- Strengthen ANBO's knowledge network and capacity development functions;
- Strengthen the governance and functioning of ANBO.

Two meetings were organised with the different African basin organisations, focal points of ANBO, in order to see together the progress of this Roadmap.

“For both ANBO and several other networks of basin organisations, the perennial question is how to achieve permanent coordination that does not depend solely on projects conducted one by one. To this end, the High-Commissioner of the Senegal River Basin Development Organization (OMVS) is currently undertaking initiatives to establish a minimal team within the organisation, given the OMVS has acted as permanent secretary since the Network was created.”



Mr Mohamed Fawzi BEDREDINE
Regional Coordinator of the PGIRE
(Integrated Water Resources Management and Multiple Uses Development Programme for the Senegal River Basin)

“With the support of the African Development Bank (ADF), which has made clear its interest in supporting ANBO in mobilising funding and from the ANBO-UNDP/GEF project, consultants have been recruited and an inclusive approach adopted to enable members of the network to appropriate the Action Plan and the funding. This work has enabled us to collect feedback from members of the network through telephone surveys and questionnaires, which have been used to develop a 2020-2024 Action Plan in a more inclusive way.”



Mr Pape NDIAYE
ANBO Communications Officer

“The OMVS is a bond of solidarity capable of maintaining peace and cohesion between neighbouring countries.”



Mr Hamed Diané SEMEGA
High-Commissioner, OMVS



A look at network's activities

Dakar 2022: ANBO heavily involved



The World Water Forum is the largest international event on water. Held once every three years, it brings together decision-makers in water management: politicians, donors, academics, the private sector and NGOs. This unique platform diagnoses the challenges of water management, develops proposals for action plans and submits them for commitment by states, international organisations, companies and civil society actors.

The 9th World Water Forum will be held in Dakar, Senegal, from 21 to 26 March 2022. It marks the return of the event to Africa, 25 years after the first edition of the Forum (in Marrakech, Morocco in March 1997).

The Forum represents an excellent opportunity to promote Integrated Water Resources Management (IWRM) at the basin level, a political priority of Senegal and of the whole continent, where it is carried by the African Ministers' Council on Water (AMCOW) and the African Network of Basin Organizations. The International Network of Basin Organizations is therefore strongly committed to its preparation and plays a leading role. It is leading the priority n°3 of the Forum on the topic of "Cooperation" (which covers IWRM) in partnership with a wide range of partners (Korea Water Forum, Swiss Agency for Development and Cooperation, World Youth Parliament for Water, etc.). It also leads or co-manages several "action groups" on adaptation to climate change, data sharing and capacity building. Above all, INBO is piloting (in partnership with the Organization for the Development of the Senegal River, the Organization for the Development of the Gambia River and the United Nations Economic Commission for Europe) a new high-level segment dedicated to basins.

Mr Abdoulaye SENE (Executive Secretary of the Dakar 2022 World Water Forum) is pleased to present his vision of the place that basin organisations should have in the Forum.

Mr. the Executive Secretary, how do you see the basin process, and more broadly, the place of basin organisations, in the conduct of the WWF, and in the messages that will come out of it?

For us, when we chose the theme of the WEF "Water Security for Peace and Development", we were aware that basins had to play a leading role. Because when we talk about water for peace, we first think of the problems linked to the management of transboundary basins.

In choosing this theme, we were also thinking of the achievements in Senegal, with the OMVS (Organisation pour la mise en valeur du fleuve Sénégal) and the OMVG (Organisation pour la mise en Valeur du Fleuve Gambie). Our ambition is to offer these examples, and also to debate the issue of water as a vector of peace and solidarity.

It is also to offer the opportunity to discuss real cases that today constitute open or pending conflicts, so that we can discuss them on the base of successful experiences, with a view to finding possible solutions.

And overall, we thought that in the political dimension, the basin agencies had an important role to play. First of all, in the dynamics I have just mentioned, but also simply because the basin agencies are in charge of development issues, water security in terms of preserving and protecting the resource, managing adaptation to climate change, but also providing water for agriculture and for the population.

This is why we believe that the basin organisations are really key players, and we expect a lot from the proposals that will be made here.

The Heads of State will be inspired by the proposals from the consultative groups to adopt a Declaration. And this Declaration will have to be translated into operational terms. The political actors at a lower level who will have this responsibility: parliamentarians, ministers, elected representatives, but also agencies. We hope that this Dakar Declaration can really be put into practice so that in a few years' time we can see the answers that are given here on the ground.

Interview made at the 2nd Stakeholders' Meeting of the Dakar Forum - 14 and 15 October 2021 - Dakar

Basin organisations are key players in making political decisions operational on the ground



Mr Abdoulaye SENE
Executive Secretary of the Dakar 2022
World Water Forum

A look at network's activities

Canada: an Alliance for the Ottawa River



Crédit photo : OBV RPNS 2021

Last April, some one hundred water stakeholders from all sectors affected by the quality of the fluvial section of the Ottawa River came together to plan the implementation of a collegial governance structure designed to ensure the integrated management of water resources from the Québec portion of the Ottawa River watershed.

This 1,300-km-long river forms part of the border between the provinces of Québec and Ontario. As well as being cross-border, it is formed of several drainage sub-watersheds, several communities of different densities, from small village to big city, and a diverse range of ecological environments. This wide variety requires a mobilising approach and broad dialogue among stakeholders, in keeping with the scale of the ecosystem concerned.

The different riverside stakeholders were therefore invited by eight organisations involved in integrated water management in Québec and brought together under the name Alliance for the Ottawa River.

During workshops, based on a pooling and prioritisation of classification criteria, stakeholders raised the most significant problems, with three key criteria selected to serve as the foundations for developing the regional water management plan:

- The changing quality of the water.
- Flooding.
- The deterioration of wetlands and habitats (for flora and fauna).

In the coming months, the Alliance for the Ottawa River will complete a diagnostic for each of these three issues. Following this, some of the stakeholders involved in the prioritisation process will be called up to form the first inter-regional coordinating committee for the fluvial zone of the Ottawa River.

This initiative is funded by the Québec government as part of the 2018-2023 action plan of the Québec Water Strategy, which implements concrete measures to protect, use and manage water and aquatic environments in a responsible, integrated and sustainable way.



Death of Mr Normand CAZELAIS



© ROBAN

This Quebec journalist, born in 1944, professor, lecturer and author with a passion for the environment, was a key player in Integrated Water Resources Management (IWRM) and an important figure for our association and its regional networks. We will keep in our hearts the memory of his action, his devotion, his human qualities so appreciated. qualités humaines si appréciées.

CARIBSAN is launched!

This inter-Caribbean cooperation project aims to promote the development of wastewater treatment technology using planted filters on a Caribbean scale in new pilot territories (Cuba, Dominica and Saint Lucia), drawing in particular on the experience of Martinique. At the end of the project, the partner countries will be autonomous in the management of future stations on their territory. The activities of this component will ensure the federative dimension of this project between the partner countries.

See you in the coming months for the first results.

For more information:

<http://www.caribsan.eu>



A look at network's activities



The XXIII National Meeting of Basin Committees (4-7 October 2021, Curitiba, Paraná State, Brazil)

The 23rd edition of the National Meeting of Basin Committees of Brazil was held under the theme "Water as a factor of life, health and development". The hybrid event brought together 4,535 participants to present the challenges facing Brazil and the solutions that basin committees can help to bring about and implement. The country is experiencing its worst drought in 91 years. This has resulted in a drop in agricultural yields but also in a drop in electricity production, 70% of which is provided by hydroelectric power plants. Participants and speakers stressed the active role that basin committees must play in updating the National Water Resources

Plan 2022 - 2024, achieving these objectives and resolving this unprecedented hydropower crisis in the long term. In particular, they called for accelerating the strengthening of the monitoring of water resources and their uses, as well as the development of a classification of water bodies according to the quality of the resource, in accordance with the provisions of Resolution No. 357/2005 of the National Council for the Environment (CONAMA).

The organizers, Mr. Lupércio Ziroldo Antonio & Hideraldo Buch (respectively President of the Brazilian Network of Basin Organizations -REBOB and coordinator of the National Forum of River Basin

Committees -FNCBH) greeted their hosts and partners (the Secretariat for Sustainable Development and Tourism -SEDEST of the State of Paraná, the INSTITUTO ÁGUA E TERRA -IAT and the National Water Agency -ANA) for supporting this essential meeting.



International Conference of the Network of Water Management Organizations of Eastern Europe, Caucasus and Central Asia (NWO EECCA)

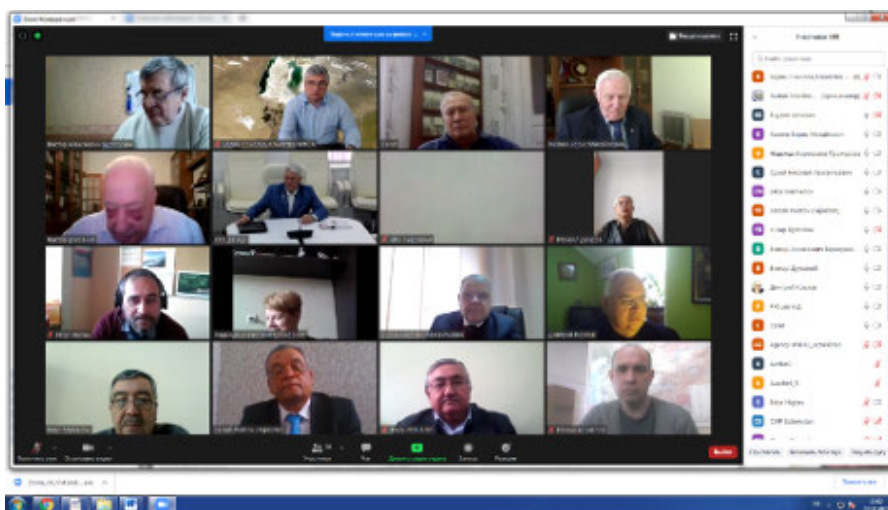
"Transboundary water cooperation in EECCA*: lessons learned and future directions"

The conference on "Transboundary Water Cooperation in EECCA*: Lessons Learned and Future Directions" of the Network of Water Management Organizations in EECCA was held for the first time online on 2-3 March 2021. The conference was organised within the framework of the UNECE project "Support to the Network of Russian-speaking Water Management Organisations" funded by the Government of the Russian Federation.

The conference covered the following main topics:

- Water cooperation between Central Asian and neighbouring countries.
- Water cooperation between Eastern European and neighbouring countries.
- Contribution of the EECCA NWO to cooperation between Eastern Europe, Central Asia and neighbouring countries.

The participants addressed current issues of transboundary water cooperation, reviewed the results of the past year and discussed future actions of the network. They then defined the next key points and recommendations: due to the increase in competing uses of water resources by sectors and countries, combined with the impact of climate change, close



cooperation and collaboration at national, international, transboundary and basin levels become essential. Comprehensive and systemic measures for the rational and optimal use of water and land, including the digitalisation and automation of water structures and the application of water-saving technologies, become particularly important. In order to give further impetus to cooperation in the field of water and sustainable development, it was proposed to start developing strategic documents, including the Regional Programme for Water Efficiency in

Central Asia, and to apply to the Eurasian Economic Union (EAEU) with the proposal for the development of a water resources strategy for the EAEU countries by 2050.



*EECCA countries: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine and Uzbekistan



GOVERNANCE

Managing water at the appropriate scales within integrated basin governance systems is one of the priorities highlighted by the OECD Principles on Water Governance. During the OECD Water Days (March 2021), the OECD launched a series of Water Governance reports in which the role of basin organisations has been analysed as multi-stakeholder platforms to enhance water security.

The OECD report on Water Governance in Peru highlights the creation of 13 River Basin Councils (out of 28) as an important step towards more effective stakeholder engagement. However, in a country where water is unevenly distributed across hydrographic regions (from 1.8% in the Pacific region to 97% in the Amazon region), it is important to improve implementation of river basin management plans, increase the participation of urban water and sanitation stakeholders, and strengthen financial and human resources.

The OECD policy paper on Water Governance in Asia-Pacific finds that 81% of the 48 surveyed countries set up river basin organization (RBOs). However, only 27% of these countries have put in place peer-to-peer dialogue platforms across RBOs, which could help improve water security at the basin level.

Around two-thirds of 38 African cities surveyed by the OECD are not part of an RBO. The report highlights that city leaders could drive water security by contributing to water resources management within integrated basin systems. In Cape Town, South Africa, the report calls for strengthening integrated basin governance by establishing a single Catchment Management Agency covering the Western Cape Water Supply System territory.



International water law covers the regulation of more and more dimensions of water resources, reflecting the evolution of technical and scientific knowledge and the concerns of international society about this resource. Thus, the regulation of transboundary waters has been progressively extended to cover not only surface waters but also groundwater and related ecosystems. There has also been a greening of transboundary water regulation, with sustainable use of water resources and ecosystem approaches gaining in importance. The influence of the development of the human rights to water and sanitation and public participation can also be seen.

Feedback between bilateral, regional and global legal instruments, the exchange of good practices, and the implementation of the 2030 Agenda is also providing tools for strengthening and improving the international legal and institutional water regime.

Some of the challenges ahead include how to improve the integration of these developments with those of other deeply interrelated sectors of the international legal order, such as climate change, biodiversity and energy.



Ms Laura Movilla PATEIRO,
Professor of International Public Law and International Relations,
University of Vigo (Spain)

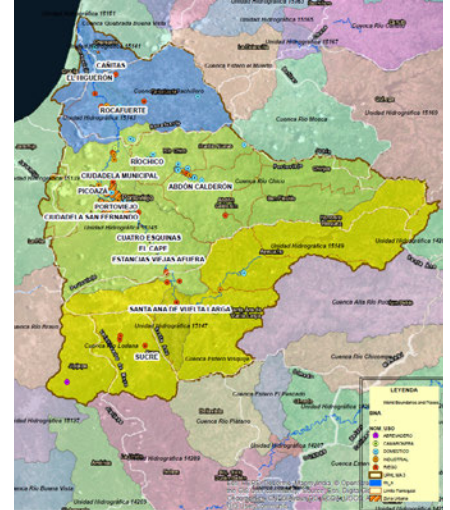
Governance

Integrated Water Resources Management in Ecuador: Initial implementation of the action plan for the Portoviejo river basin

The plan for implementing integrated water resources management in Ecuador, supported by the Ecuadorian Water and Environment Ministry (MAAE) and the International Office for Water and with financing by the Adour-Garonne water agency, tackles one of the priorities identified by the Ecuadorian National Water Agency by applying the legal provisions of the country's Water Resources, Uses and Utilisation Law. It aims to create mechanisms for operating basin committees and for their involvement in formulating, planning, evaluating and controlling hydrological resources in Ecuador's basins and micro-basins.

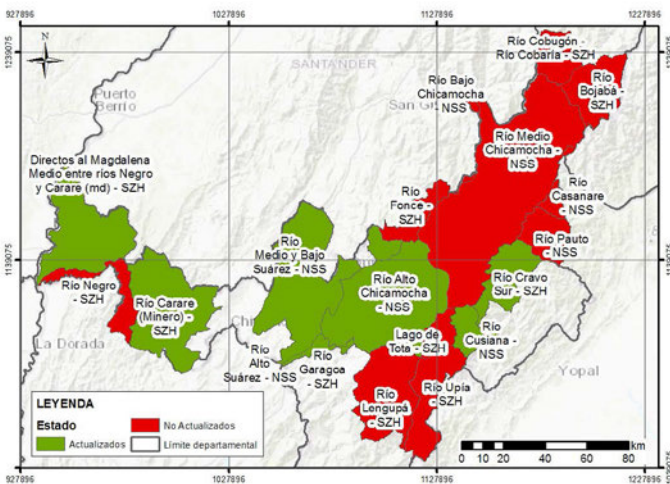
Stage four of the programme started in May 2021 and aims to work alongside implementation of the first pilot action plan for the Portoviejo river basin. To achieve this goal, a second mock session started in June, with students studying hydraulics at Ecuador's Catholic University (PUCE) in Manabí (representing the universities within the basin

committee). These students will recover historic data on the capacities and quality of the water resources, data which has been collected since 1990 by the MAAE's decentralised service. Within this framework, both institutions are currently in the process of signing an agreement for managing integrated water resources in Manabí. This stage will also consolidate the creation of the Knowledge Management technical group of the Portoviejo river basin committee. Manabí's Area Management plans to get the technical group working with other universities in Manabí to establish the methodological protocol to follow and start to readdress the water balance of the river basin.



Drafted in coordination with our point person
Mr NARVÁEZ
Technical Analyst, Water Resource Structuring and Social Directorate, MAAE.

Cooperation with Integrated Water Resources Management, pilot level for the upper basin of the Chicamocha river



The pilot institutional co-operation plan for Integrated Water Resources Management (IWRM) in Colombia between the International Office for Water, the IWRM Directorate at the Colombian Ministry of the Environment and Sustainable Development (MADS) and the Autonomous Regional Sustainable Development Agencies (CAR) has been in place since 2013, and receives funding from the Adour-Garonne water agency. The CAR are corporate public agencies, made up of territorial entities legally in charge of environmental and resource management within their jurisdiction. Stage 3 of the co-operation plan aims to contribute on a pilot level to integrated water basins management and water governance which form part of the 2020-2023 Sustainable Action Plan for the Autonomous Regional Agency of Boyacá, Corpoboyacá.

In 2021 the plan will focus on the hydrographic scale of the upper basin of the Chicamocha river to support the actions of its basin committee, links between planning tools, and the updating and sharing of water data. All of this is in conjunction with the aim of supporting the decision-making of basin users, participating in the development of the Corpoboyacá Water Observatory (among other actions) and contributing to the updating of the IWRM National Policy via feedback

It is necessary to better understand layers and players of decision making processes.

Mr Karl WANTZEN,
 UNESCO Chair «River culture» - Conference on Water, Megacities and Global Change – January 2022

Governance

Water resources management in Lebanon in the context of different crisis

In Lebanon, the Mediterranean climate and topography provide the entire country with considerable water resources. However, despite this abundance of water, Lebanon is unable to meet all water requirements. In order to understand the structuring of the issue of water governance in Lebanon and the constitutional reforms planned for implementing IWRM (Integrated Water Resource Management) at the river basin level, INBO has interviewed three key stakeholders who work on a local level to improve the management of and access to water, as well as sanitation:

- **Mrs Houda ODEIMI and Sarah ARBEZ**
United Cities Lebanon/Technical Office of Lebanese Municipalities (BTVL),
- **Ms Mélodie BOISSEL**
the Programme Solidarité Eau (Water Solidarity Programme),
- **Ms Jasmine EL-KAREH**
the LEWAP (LEbanese Water Actors Platform).



What are the key challenges facing water resource management in Lebanon?

Jasmine EL-KAREH: “In Lebanon, we are encountering problems in managing and treating wastewater: less than 10% of waste water is treated. This low treatment rate affects the quality of water resources. We are also seeing significant demographic challenges with the growing urbanisation, a situation that is being exacerbated by the influx of refugees. Moreover, following law 221 of 2000, the institutional framework has not clarified the overlapping of responsibilities between stakeholders. Added to this is the lack of coordination between the different stakeholders and between institutions themselves.”

To what extent are the public health and political crises affecting water resource management?

Sarah ARBEZ: “These crises are affecting local authorities on a financial level as they can no longer collect taxes directly from residents; what’s more, they no longer receive state grants, which represent nearly 80% of their budget. Lebanon is dealing with hyperinflation, which is deeply affecting municipal staff. In other words, on a human resource level, employees are continuing to be paid in Lebanese pounds with no reevaluation of their salaries. In addition to this, several local projects have been terminated as local authorities are no longer able to pay suppliers, and we have observed that the efforts of local authorities have shifted more to social and public health issues in order to combat the spread of coronavirus.”

In France, the so-called Oudin-Santini law of 2005 enables towns and water agencies to allocate up to 1% of their water and sanitation budget to international cooperation and solidarity actions. What, for you, is the value of this kind of mechanism, which funds international cooperation between local authorities?

Mélodie BOISSEL: “The Oudin-Santini law has enabled new stakeholders to play a role in the international solidarity sector by providing a framework. This progress allows water agencies to develop a strategy. Their financial contribution is really important for supporting efforts at decentralised cooperation among Lebanese municipalities. For example, the city of Chambéry has a partnership with Bcharré, supported by the Rhône-Méditerranée-Corse water agency and the Auvergne Rhône-Alpes region with an NGO (Corail) which serves as a specialist operator. This project relates to an IWRM approach in the Abu-Ali catchment basin. This underscores the challenges of resource management in Lebanon.”

In 2019, the French Ministry for Europe and Foreign Affairs (MEAE) implemented a project for reinforcing the capacities of Lebanese local authorities and exchanging expertise and knowledge between local stakeholders in France and Lebanon. 3 years later, what point are we at?

Houda ODEIMI: “This memorandum of understanding for a general framework was signed by French and Lebanese ministries and the Lebanese Mayors Committee, as well as the French CNFPT (National Centre for Local Civil Service). It gave rise to a project foreshadowing a training centre for Lebanese municipalities. This project is currently in the start-up phase and is being led by the French Région Sud-PACA in partnership with the CNFPT, United Cities Lebanon (BTVL) and the AVITEM (Agency for sustainable

“ In the face of the water scarcity facing our small island state, water user associations can be seen as innovative governance tools for sustainable groundwater use. ”

Dr. Kevin GATT (University of Malta)
Déclaration at Euro-INBO 2021

Governance

Burkina Faso - Côte d'Ivoire: Sharing experiences on IWRM and Local Water Commissions

• **Dr Fatimata SANOGO-BARRO**,
Director of Technical Assistance, Partnerships
and Cooperation – Mouhoun Water Agency –
Burkina Faso

What are the challenges relating to Local Water Commissions (LWC)?

"LWCs are bodies for coordination, promotion, management and discussion that bring together all stakeholders involved locally in integrated water resource management (IWRM). They support the Water Agency in producing and implementing planning documents, such as the SAGE and the SDAGE (water development and management schemes/masterplans for water development and manage-

ment). For example, the Samendéni-Sourou SAGE territory, an up-and-coming hub for growth, is strategic due to the connection of water amenities between the two basins (the AMVS/PDIS* valleys).

What are the key actions of LWCs?

"LWCs share the same territory as the SAGE and help organise local public action in the water sector. Stakeholders are organised through information-based and capacity-building meetings for all stakeholders in the management sphere. Moreover, LWCs lead awareness-raising, advocacy, anti-conflict, social intermediation, protection and biological and mechanical water resource restoration actions in collaboration with technical

departments, local authorities and other stakeholders to boost the sustainable development of towns. They monitor the sustainable management of water resources using a decision-making tool, such as water resource allocation models and water management plans."

*AMVS: Sourou Valley Development Authority/PDIS: Samendéni Valley Integrated Development Programme



• **Prof. Albert GOULA**,
Director of the Protection and Development of
Water Resources – Ministry of Water and Forests
– Côte d'Ivoire

What are the challenges of IWRM in Côte d'Ivoire and more specifically in the Bandama basin?

"The Haut Bandama pilot project is designed to tackle the challenges of IWRM on a local and national level. On a local level, by raising aware-

ness and mobilising basin stakeholders, with the formation of a Local Basin Water Commission in particular. Meanwhile, on a national level, IWRM should enable orders to be issued as prescribed under the 1998 Law on the Water Code, or the Water Policy and sustainable funding mechanisms to be adopted."



The first coordination meeting for users of Haut Bandama (MINEF – OiEau – AELB – with the participation of institutional partners from Burkina Faso) – credits OiEau

What are the challenges relating to the Haut Bandama water resource?

"The Haut Bandama is a focal point for challenges relating to the many ways in which the resource is used (drinking water supply for Bouaké, the country's second-largest city, agricultural production, livestock rearing, hydroelectric production, gold panning, etc.). Water users have to face three key challenges central to the planned creation of a LWC for Haut Bandama:

- Ensuring that water is permanently available and in sufficient quantity,
- Fighting the pollution of the resource,
- Improving the management of use-related conflicts."

“ To avoid short-term solutions, we need to invest in governance and in tailor-made training programmes that integrate innovation and address systemic issues. **”**

Dr. Themba GUMBO (Director of Cap-Net)
at the IWRA World Congress

Governance

Implementing IWRM in Cambodia



"Water policing makes it possible to move from the law to reality. It is an instrument of public policy that cannot be separated from the development context of the country in which it is implemented: it requires a clear will, human and technical means of control, and calls for capacity building."

Prof. LIM Puy

Vice President of the Tonle Sap Authority (Cambodia)

Since 2012, Cambodia's Ministry for Water Resources and Meteorology (MOWRAM) has been conducting a Integrated Water Resources Management (IWRM) pilot project on an affluent of Lake Tonlé Sap, the Stung Sen, as part of an institutional partnership developed between the Tonlé Sap Authority (TSA) and the French Loire-Bretagne and Rhin-Meuse water agencies, with technical support from OiEau.

One of the central aspects of the project is water governance, in particular through the implementation of the country's first Basin Committee. Through a collective and decentralised approach, state representatives, users and citizens more widely have been able to learn about the drainage basin in its entirety and help to define the priority challenges for the basin: access to drinking water, irrigation, risks relating to drought and flooding, and environmental protection.

As Meta Prom, basin manager for TSA and a key member of the basin committee working groups, explains: "In Cambodia we have two distinct seasons to navigate. To tackle the management of water demand during the dry season, we have to rationalise its use. This requires a better understanding of our basin and its needs, for example by producing reports, maps and monitoring hydrological data.

We also allocate time to discussing different aspects together, such as our agrarian practices. The farmers who grow rice 3 times a year come to mind; with just two harvests of better-quality rice, our profit could be comparable, but there needs to be dialogue for this to gain backing.

With the development of dams and water towers, we will also be able to better meet needs for irrigation and drinking water supply. To this end, the committee helps us improve dialogue between the different working groups and implement decisions made on the basin, with the contribution of different users and stakeholders in this basin partnership."

In parallel, this approach has seen the creation of supply systems in 7 basin municipalities, and a new project has just been launched for the municipality of Yeang. With the support of water agencies, the municipalities benefiting from the initiative have signed a cooperation pact for the formation of an inter-municipality syndicate led by the organisation GESCOD. A status report has also been produced in order to plan future projects. The ultimate aim is for residents to appropriate the facilities and adopt lasting practices, including the financial and functional autonomy of the syndicate.

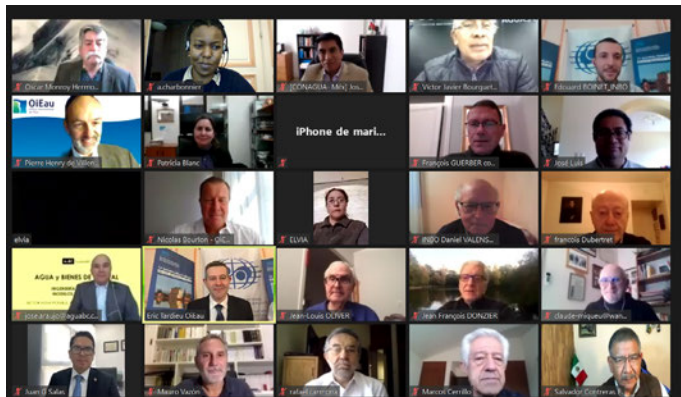
As such, this IWRM pilot project in a rural setting, when replicated for other neighbouring basins, clearly contributes to the Cambodian government's ambition to provide "Water for all by 2025".

“ Water quality is improving in our basin, but it is also threatened by the challenges of climate change and new pollutants, challenges that can only be met by the commitment of the stakeholders. ”

Mr Leon DHAENE (Executive Secretary of the International Scheldt Commission)
declaration at Euro-INBO 2021

Governance

Democratisation of Mexico's National Water Policy



Mexico's National Water Programme 2020-2024 (PNH) which covers the national water policy implemented by the National Water Commission (CONAGUA), aims to not only resolve problems relating to the resource, but reduce the inequality gap and move towards water security with an emphasis on human rights that puts people first. This significant document contemplates five priority objectives, each of which is accompanied by a series of strategies and actions. These seek to bolster compliance of national priorities and international commitments, not only in relation to water, but also development goals such as Agenda 2030 for Sustainable Development and the Escazú Agreement. This latter agreement, recently ratified by Mexico, guarantees the right for citizens to participate in environmental matters.

The National Water Policy clearly sets out the obstacles that Mexico faces in managing the resource sustainably, such as access to drinking water services and insufficient and unequal sanitation, the impact on production sectors, extreme hydro-meteorological phenomena, impairment in the quality and quantity of basins and aquifers, institutional conditions and insufficient social involvement, to name but a few.

Although Mexico still has some years left to fulfil its commitments to this programme and be able to actually see the specific results, the creation of this document marks a significant milestone in the institutionalisation and implementation of effective water governance and is considered an example of democratisation in decision-making, given that it was drafted under the principles of inclusion and participation.

Overall it included the participation of 44 consultation forums, involving some 2,900 people from across the country. Mexico is currently creating 13 Regional Water Programmes under the same model of public involvement, reiterating the importance of local participation in water planning and management.

While the implementation of effective water governance has made significant progress in tackling corruption and accountability, the implementation of Con@gua en Líne@ (a digital platform that makes administrative processes more transparent) has, after many years, remedied the time lag for processes that have already started. The number of visits for inspecting the use of national waters also increased, and more than a billion dollars' worth of funds were secured in 2020.

Lastly, it appears that for the first time ever, Mexico's water policy has placed special emphasis on abiding by the Human Rights for Water and Sanitation, whilst also taking into consideration economic development but without endangering the ecological balance.

Ms Pamela ROJAS
Coordinator of Multilateral Cooperation
National Water Commission of Mexico (CONAGUA)

Within the framework of a ministerial cooperation agreement signed during the COP21 in Paris in December 2015, the International Office for Water has been implementing a project to support the Metropolitan Commission for Drainage of the Mexico Valley since 2016.

The Seine-Normandy Water Agency and the Syndicat Interdépartemental pour l'Assainissement de l'Agglomération Parisienne are supporting the project. The objective is to improve basin management, stormwater management, flood prevention and adaptation to climate change for the 22 million inhabitants of the Mexican capital.

The webinars co-organised with INBO on 28 January and 18 February made it possible to share the results of the project and its prospects with nearly 265 participants from 39 countries.

(see p. 48)

Governance

Water Governance in African Cities

The OECD new report on Water Governance in African Cities, launched as part of the first edition of the OECD Water Days, is the first comprehensive analysis of water-related governance challenges at the local level in Africa. Building on a survey of 36 cities of all sizes in Africa, this report provides a regional overview on water management; institutional, policy and regulatory frameworks; and the critical governance gaps that need to be bridged to boost cities' capacity to drive water security in Africa. The COVID-19 pandemic has acted as a magnifying glass on pressing water and sanitation challenges in Africa, especially for the 56% of the urban population living in informal settlements, lacking access to proper hygiene conditions. The report reveals that climate change, urbanisation and population growth will add further pressure on water resources and that key governance challenges relate to managing water at the appropriate scale:

- ensuring cross-sectoral policy coherence
- improving data, monitoring and evaluation
- addressing funding gaps, transparency and integrity issues;
- and strengthening stakeholder engagement.

This report also aims to galvanise political action from Mayors and city leaders in Africa.

Ms Aziza AKHMOUCH

Head of the Cities, Urban Policy and Sustainable Development Division

Ms Mélissa KERIM-DIKENI

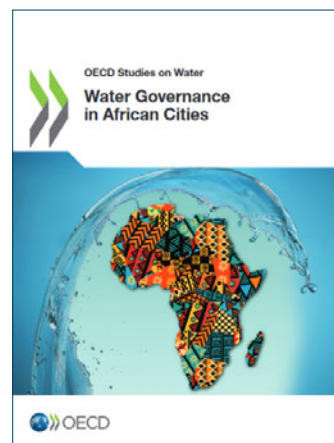
Policy Analyst

Ms Oriana ROMANO

Head of Unit, Water Governance and Circular Economy Organisation for Cooperation and Development (OECD)



www.oecd.org/fr/environnement/



Cover of the report Water Governance in African Cities

Local communities at the heart of water governance in Peru

The International Secretariat for Water and Solidarity Water Europe (ISW-SWE) and its partners are working to reinforce – in parallel to rural water and sanitation infrastructure projects – the Sanitation Service Committees (JASS in Spanish) located in the Peruvian Andes, by building their capacities for better and more resilient water governance.

This change in community management fills a gap in decisions on managing the water that rural communities in the high Andes are dependent on, even if this is simply ensuring drinking water for members of these communities. The breakdown in basic water services for these communities, combined with the impacts of climate change, is increasing poverty and generating a void in decision-making.

ISW-SWE is working to extend the duties of JASS to water and environmental management (GAA in Spanish) to form JASSGAAs. This was implemented following a popular vote in favour of this measure during a public consultation, lending increased legitimacy to the actions taken.

This JASSGAA now helps to manage drinking water and sanitation services, reinforce the resilience of the community in terms of water and facilitate decision-making. The work of ISW-SWE in Peru is funded by the Seine-Normandie water agency, the Canadian “Wings of Hope” Foundation and the Swiss Agency for Development and Cooperation (SDC).



Mr Vladimir ARANA

Programme Coordinator, International Water Secretariat

Governance

Water governance in Morocco



“ With the Africa Water Fund, we support the implementation of Nature-based Solutions for Climate Change Adaptation at the basin level. This strengthens upstream-downstream solidarity between water users. ”

Mr Fred KIHARA (Director of the Africa Water Fund, The Nature Conservancy) at the IWRA World Congress

The mode of water governance in Morocco, established progressively over the decades, is centred around the integrated, decentralised and participatory management of each basin.

Law 36-15 provides updates to this, with new rules and tools for management, planning and water preservation.

In terms of planning, the law provides for three reference documents for the sustainable management and allocation of water resources, namely the National Water Plan (PNE), the Master Plans on Integrated Water Resource Development at basin level and the Local Water Management Plans.

The decentralised water governance of each water basin has been entrusted to water agencies with activities covering resource monitoring, inspecting, planning and regulation, operational management and project management. Through the use and operation of the Public Water Domain, agencies mobilise significant financial resources.

The law also reinforces governance through mechanisms enabling stakeholders and the public to participate in water management on the following levels:

- national (Higher Council for Water and Climate - CSEC),
- regional (water basin councils - CBH)
- local (prefectoral and provincial committees - CPPE, and participatory management contracts in the public water sector).

In addition, to guarantee the participation of all stakeholders affected, particularly users, the law requires a minimum number of representatives from organisations working in the water sector, women, ethnic groups and private sector representatives to be part of these consultation bodies.

This mode of governance adopted by Morocco will be further reinforced in light of the recommendations of the New Development Model (NDM) and in line with the strategies of the draft PNE.

Mr Omar BENJELLOUN

Director of Research and Planning at the Ministry of Equipment and Water of the Kingdom of Morocco, INBO Executive President

Safeguarding the Fez-Meknes water table

The increased exploitation of the Fez-Meknes aquifer, in a context of repeated droughts, risks compromising, in the short and medium term, the security of drinking water supply and will have harmful consequences in the agricultural, tourist, industrial, economic and environmental sectors.

This water table is currently benefiting from a support programme by the Sebou Water Basin Agency to consolidate its water table contract project, with the support of the Artois Picardy Water Agency and the technical support of OïEau.

This project should enable:

- Improved monitoring of the water table (modelling of the overall functioning of the water table, precise definition of the water bodies and their sensitivity to withdrawals)
- Modernisation and strengthening of governance
- Setting up sustainable financing mechanisms for emblematic water saving operations (recycling of used water, different irrigation methods, improving the capacity of soils to retain water, etc.).
- And capacity and knowledge building (raising awareness among stakeholders, particularly farmers, of the need to use water wisely).

Governance

Integrated water management in Bolivia: Technical cooperation in support of the Bolivian watershed policy

Bolivia, with a little more than eleven million inhabitants, is a territory rich in water resources due to its geographical location in the centre of South America. The spatial distribution of water is however heterogeneous, with regions where water is abundant, coexisting with other areas suffering from water stress. Water availability and access are major challenges, especially in arid and semi-arid areas of the country. Water stress situations are also related to the accelerated growth of cities, which is not always associated with territorial planning processes.

Since 2006, when access to water was recognised as a fundamental human right in Bolivia, the Ministry of Environment and Water (MMAyA) has been implementing the National Watershed Plan (PNC) as the main policy that promotes integrated water management with the active participation of stakeholders. The PNC was born as a response to the need for a guiding framework for the construction and development of a renewed water management in the country.

This new integrated and inclusive approach was aimed at finding solutions to a series of problems such as emerging social conflicts over access to and use of water, the increased recurrence of extreme weather events and their adverse impacts, pollution and environmental damage to watersheds, weak institutional frameworks for water management, and limited information management for better planning of the resource.

Building IWRM is naturally a long-term process. Progress has been gradual, leaving valuable lessons learned, for example, on the political scaling up of IWRM. Through the prioritisation of strategic river basins, the PNC is seeking to influence at a regional scale, which means facing new challenges in water planning and governance. Addressing certain issues at this scale is undoubtedly complex. On the other hand, the PNC has made efforts to integrate strategic approaches to planning such as climate resilience, capacity building and knowledge management for informed decision-making.

Currently, the French Development Agency (AFD) supports the MMAyA by financing a technical cooperation programme that aims to contribute to the Bolivian watershed policy, favouring a set of institutional capacity building activities and technical exchanges under a strategic approach. The International Office for Water (OiEau) is the technical partner of this important national initiative.

Among the main activities, the implementation of water planning tools, knowledge management and institutional dialogue will be promoted at both local and national management levels. It is also planned to strengthen the institutional capacity of certain strategic basin management units, support the reuse of treated wastewater under circular water economy approaches, support the institutional management of public entities in charge of multipurpose systems, as well as promote technical exchanges, dissemination activities and collaborative work in networks.

Ms Rita GUTIERREZ AGRAMONT
Project Officer, AFD Bolivia.



"Laja is polluted, to the highest degree, because the city of El Alto, located half an hour away, has grown and is now home to more than a million inhabitants, and all its sewage, all its waste water, comes into the territory of the municipality of Laja.

We don't know what to do and our wells and rivers are polluted. This is the case of the river that crosses several municipalities and reaches Lake Titicaca, and our Lake Titicaca is now polluted, there are no fish, no fauna, it is dying. And the animals, which drink this water, are born with deformities, and are sick. We really suffer from pollution, not only from sewage but also from waste and other pollutants.

In Laja, we have a big project underway for a sewage treatment plant. We Bolivians are in a very small country compared to France, and we don't have the capacity to solve the problems, we lack cooperation, technical assistance on how to solve the problems. And you, the French, as a developed country, with more people and more experience, have the capacity to support us in this problem."

Ms Luciana CONDORI
Mayor of Laja (La Paz department, Bolivia)



"The issue of El Alto wastewater and Puchokollo treatment plant, upstream from here, is a problem that affects the 24 municipalities of the river basin, affecting not only our living places but also our well-being because our sewage, our polluted water, harms mostly the people who live downstream.

I hope that today, following this visit of French cooperation to our wastewater treatment plant, we will find solutions to tackle water contamination issues in our community, and it will contribute to making each of us responsible for our own wastewater."

Mr Manuel GONZALEZ
Director of natural risk management department
of the municipality of Viacha (La Paz Department, Bolivia)

The African Development Bank's (AfDB) policy on integrated water resources management (IWRM) promotes the coordinated management and development of water resources to achieve equitable economic and social development in Regional Member Countries and sustainability of vital ecosystems.

AfDB's Transboundary Waters Program (TWP) has the core objective to strengthen the governance mechanisms of River Basin Organisations to improve their capacities to access finance mechanisms. Transboundary water resources are especially important in Africa where sixty-three river basins cross at least one border and jointly cover around 62 percent of the continent. Africa's tremendous water resources have the potential to stimulate economic growth, secure livelihoods, and alleviate poverty. In river basins that lie totally within one country, planning and implementing sustainable development activities is complicated enough. Coordinating and managing the development of shared water resources is even more difficult.

In scaling up resource mobilization to access the financing needed to address transboundary issues, the capacity to prepare bankable projects, that will attract the limited public and private resources available, are critical. By emphasizing basin-wide stakeholder participation, interinstitutional and intergovernmental coordination, and the efficient use of limited financial re-

sources, transboundary basin approaches can advance economic, environmental, and social goals, while avoiding the challenges of unilateral development.

The Bank's TWP is currently supporting the Volta Basin Authority to leverage investments in IWRM in the basin. Predicted changes to the future climate of the region will likely result in spatial and temporal changes in water availability, while population growth in the basin will lead to increasing demand for water resources. The effective management of water resources is therefore critical for sustainable socio-economic development of the basin countries and their push toward achieving the Sustainable Development Goals. Financial support to the Volta River Basin will advance the much-needed collection of data and generation of knowledge on water resources which will, in turn, support increased capacity for managing the resources and aid in master planning to ensure the efficient, equitable and sustainable management and development of water resources in the basin.

The TWP is able to leverage the credibility and comparative advantage of the AfDB in mobilizing much-needed resources to prepare projects on transboundary river basins and to create the enabling environment for public and private investments that will lead to water security and sustainable socio-economic development.

“ That's a very important question because at the end of the day, we can build lots of capacity at the national level and at the river basin level, but unless they have a solid financing backbone, it's not possible for the river basin to operate in a long-term and right now, much of the funds are coming from donors, but what's very important we see, is that countries themselves have to value the importance of the River Basin organization, at both, the political level, as well, as the technical level. So I would recommend that the financiers really have to encourage countries and governments to put money into the River Basin organizations. ”



Ms Jennifer J. SARA
Global Director for the World Bank Group's Water Global Practice

Funding

On the international front, consolidate our leverage effect



Guillaume CHOISY, Director General of the Adour-Garonne water agency, supervisor of the international action of water agencies.

"The international action of water agencies is divided into three aspects:

- *improving the governance of the water and sanitation sector, from a local to a global scale,*
- *reinforcing the security of water supplies for all in a context of increasing pressure on the resource and the growing number of water-related crises,*
- *reinforcing the efficacy of methods and tools, with priority given to developing innovative solutions and socially-responsible funding mechanisms."*

“ It is necessary to be able to set a fair rate of cost recovery: this is essential to enforce the polluter-pays principle and to finance the investments required for good water management, preserving the environment and biodiversity. ”

Ms Amandine MESLAND
(Head of the "Sociological and economic decision support" project at the Loire-Brittany Water Agency) at Euro-INBO 2021,

THE INTERNATIONAL ACTIONS OF WATER AGENCIES IN FIGURES

- Review of the 10th intervention programme (2013-2018): €90 M committed to 1330 projects, 80% located in Africa. 86% of expenditure was dedicated to decentralised cooperation projects
- Forecast for the 11th programme (2019-2024): €101 M of overall allocation for the international intervention of 6 water agencies
- Commitment from agencies to support the incubation of 20 "Water and Climate Projects for Africa" by 2022

In spring 2020, water agencies approved a common strategy for international action. Based on the review of 15 years of socially-responsible commitment to enabling the poorest populations to access water and sanitation, this shared policy now covers new challenges.

Interview with Guillaume CHOISY, Director General of the Adour-Garonne water agency

Each agency has its own priorities and specific procedures in its intervention programme for international action. Why draw up a common strategy?

Guillaume CHOISY : The Oudin-Santini law of 2005 enables organisations in charge of water management to allocate up to 1% of their budget to international cooperation actions between local authorities in France and partner countries. As such, French water agencies have been committed for over 15 years to enabling the poorest populations to access water and sanitation. With 15 years of experience in 2020, agencies now have significant perspective on their international work. The challenges of accessing water around the world remain colossal, but I think it necessary to remind our authoritative bodies (basin committees and water and biodiversity committees in our overseas territories, board of directors), our supervising bodies (ministries in charge of the environment and finance) and our partners that we have an essential role among stakeholders in our territories, particularly local authorities (municipalities, regions, departments). We provide them with a great deal of financial and technical support in developing projects in the Southern hemisphere. We have reaffirmed our two priorities. One, that water agencies co-finance (sometimes up to 80%) their "decentralised cooperation"

projects for access to water, sanitation and hygiene, developed by the local authorities for their basin, or led by associations in their territory. The other, that they use their expertise and experience to implement "institutional cooperation" projects on governance and integrated water resource management. They work as part of partnership agreements with water management organisations in a host of countries (ministries, basin agencies, etc.) or with cross-border river management organisations. In order to harmonise institutional cooperation actions, reference zones have been established for each water agency, so that the actions taken are coordinated, effective and understandable. In 2020, water agencies dedicated 15.1 million euros to international work, 11.1 million euros of it in Africa. From 2019 to 2024, they are set to dedicate 101 million euros to international projects.



<https://www.lesagencesdeleau.fr/>

Summary produced thanks to the elements provided by the agencies Adour-Garonne and Rhine-Meuse

Funding

Euro-INBO 2021: key messages on funding



At Euro-INBO 2021, Ms. Ella Busuttil (Advisor, Energy and Water Agency, Malta), rapporteur of session 2 "Economic tools for basin management", highlighted some key messages of the speakers:

- For Ms Maria Vale (Ministry of Environment and Climate Action, Portugal), "New information and communication technologies must be fully exploited in economic decision support".
- According to Mr Ángel J. González Santos (Duero Hydrographic Confederation, Spain), "Current taxes and charges are not sufficient to ensure the recovery of environmental costs, and it would therefore be wise to plan an increase in taxation for those economic actors who consume or pollute the most".
- Mr Nicholas Ellul (Energy and Water Agency, Malta) recalled: "We also need to show that balanced water resource management creates value. It is not just a cost. The positive externalities are numerous and can be quantified to defend and increase the budgets dedicated to water management.
- And for Mr Christian Lecussan (President of FENARIVE and Vice-President of the Seine-Normandy Basin Committee, France) "We must remove the obstacles to the granting of financial aid for industrial investments that are virtuous for water resources".

The funding of the International Commission for the Meuse (CIM)

The international agreement on the Meuse (Ghent, Belgium, 2002) led to the establishment of the CIM, whose article 7 determines its method of funding: the distribution key between the 8 contracting parties detailed below is based both on the proportion of the International Hydrographic District (IHD) occupied by each party (area) and the population breakdown.

As such, the contribution of Germany, which occupies around 10% of the territory but whose reputation represents nearly 20% of inhabitants of the international basin, amounts to 14.5%.

Parties	Contribution
Germany	14.5%
Kingdom of Belgium	0.5%
Brussels-Capital Region	4.5%
Flemish Region	5%
Wallonia Region	30%
France	15%
Grand Duchy of Luxembourg	0.5%
Kingdom of the Netherlands	30%
Total	100%

Similarly, France, which covers around 25% of the international budget but whose population in this territory only represents 7%, contributes 15% to the annual CIM budget.

Two specific cases should nevertheless be highlighted in this distribution key:

- The Brussels-Capital Region is not located within the Meuse IHD (0% of the area), however as its population (950,000 inhabitants or 9.5%) is supplied with drinking water from the Meuse via the Albert Canal, it contributes 4.5% to the annual budget;
- The Kingdom of Belgium geographically encompasses the Flemish, Wallonia and Brussels-Capital Regions but the surface and groundwater located on the Belgian territory falls under the jurisdiction of the Regions; nevertheless it contributes 0.5% for its jurisdiction over coastal waters.

The full text of the Ghent agreement can be read in French, German and Dutch at the following address: <http://www.meuse-maas.be/Accords.aspx>

State and regional contributions only ensure the operation of the commission's secretariat and cannot be used to fund projects. Through the participation of its experts and the provision of data, the CIM supports initiatives connected to the Meuse, led by external partners, particularly as part of European projects.

Mr Jean-Noel PANSERA
Secretary General, Meuse International Commission (CIM)

Funding

100 Water & Climate projects for Africa: incubations at mid-term

More frequent and intense floods and droughts, reduced river flows, degradation of aquatic ecosystems, rising sea levels: to meet the challenges of water and climate, it is becoming urgent to adapt. The emergence of a greater number of ambitious and innovative projects is a necessity everywhere in the world and particularly in Africa.

The 1st edition of the **"One Planet Summit"** (December 2017 in Paris) retained the commitment to ensure the development of **"100 Water & Climate projects for Africa"**, in 5 years (<https://www.oneplanet-summit.fr/>).

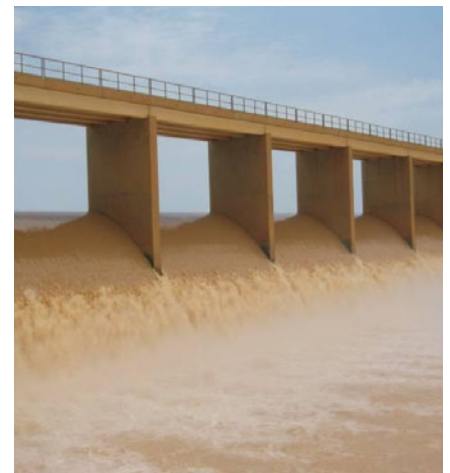
Through this initiative, the objective is to support the emergence of projects by providing technical assistance for the incubation of non-infrastructure adaptation programmes (governance, strengthening the knowledge and capacities of institutions and professionals, basin-wide planning, financing mechanisms). The leverage effect sought between the incubation budget and the financing of project implementation by a donor (e.g. the Green Climate Fund or the Adaptation Fund) is 1 to 100.

Within this framework and to date, 51 projects have already been supported. INBO leads the initiative, which has received the support of the French Ministries in charge of the environment, finance and foreign affairs, UNESCO, the World Bank, the French Development Agency, the French Water Partnership and the Syndicat Interdépartemental pour l'Assainissement de l'Agglomération Parisienne (SIAAP). The French Water Agencies have made a major contribution by committing to finance 20 project incubations. 14 of them have already been launched and benefited from OiEau's technical assistance.

"This project is a real opportunity for OMVS to use spatial imaging in the management of water resources and to help river basins become resilient to climate change. In particular, it will enable SOGED to improve existing management tools like MOSIS (Sharing Satellite Observations for Service Innovation), better integrate populations' priorities (bush fires, river bank erosion, river sedimentation, etc.) and improve our action aimed at ensuring the performance of facilities, water services and the social economy."

Mr Ousmane HANE
Director of Clientèle and Recovery at SOGED

ASSESSMENT	Assessment of adaptation needs. Initial technical, legal, financial assessment. Feasibility and context.
PROJECT DEVELOPMENT	Technical, legal, financial studies. Pre-dialogue between basin/national levels. Assistance in carrying out the project at the basin level.
PRE-FUNDING APPLICATION FILE	Drafting of funding application files. Interaction with potential funders. Recommendations for follow-up.



United Nations Climate Conference (COP26): the "100 projects" initiative in the spotlight!

INBO participated in the COP26 Climate. It organised meetings with the relevant donors and three events to discuss the initiative and promote the results achieved through its partners. This included two dedicated events (at the Francophonie Pavilion on 4 November and as an official UNFCCC side event on 5 November) as well as a segment of the official high-level water event of the COP, co-organised again this year by INBO: the "Water Action Event" on 5 November. The Executive Secretary of the Sahara and Sahel Observatory (OSS), Mr. Nabil Ben Khadra, intervened alongside the French Ministry of Europe and Foreign Affairs to present the incubation process that led to the submission of the ARCC-SRB project (adaptation in the transboundary basin of the Senegal River) to the Adaptation Fund.



Presentation of the 100 Water & Climate projects initiative at the COP26 Climate (Glasgow - November 2021)

LOCATION OF WATER & CLIMATE PROJECTS FOR AFRICA PERIOD 2021-2022

Morocco

- Sebou Basin: AEAP
- Souss Massa Basin: AERMC

For more information:

<https://www.riob.org/fr/incubation>

Burkina

- Mouhoun basin: AESN
- Nakanbé Basin :
 - Preservation of wetlands, autonomous sanitation and agro-ecology: AELB / AERMC
 - Massili-Ziga sub-basin: AELB

Senegal

- Somone river basin: AESN
- Senegal River Basin :
 - Satellite observations: AEAG
 - Information system : AEAG

Benin - Togo

- Mono River Basin: AERMC

Niger

- Dallol Maouri basin: AESN

Cameroon

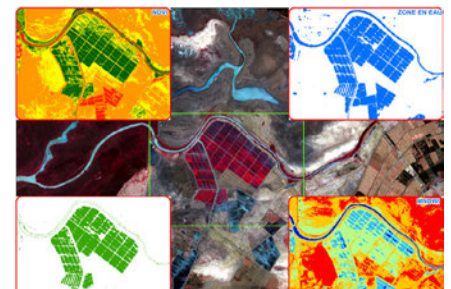
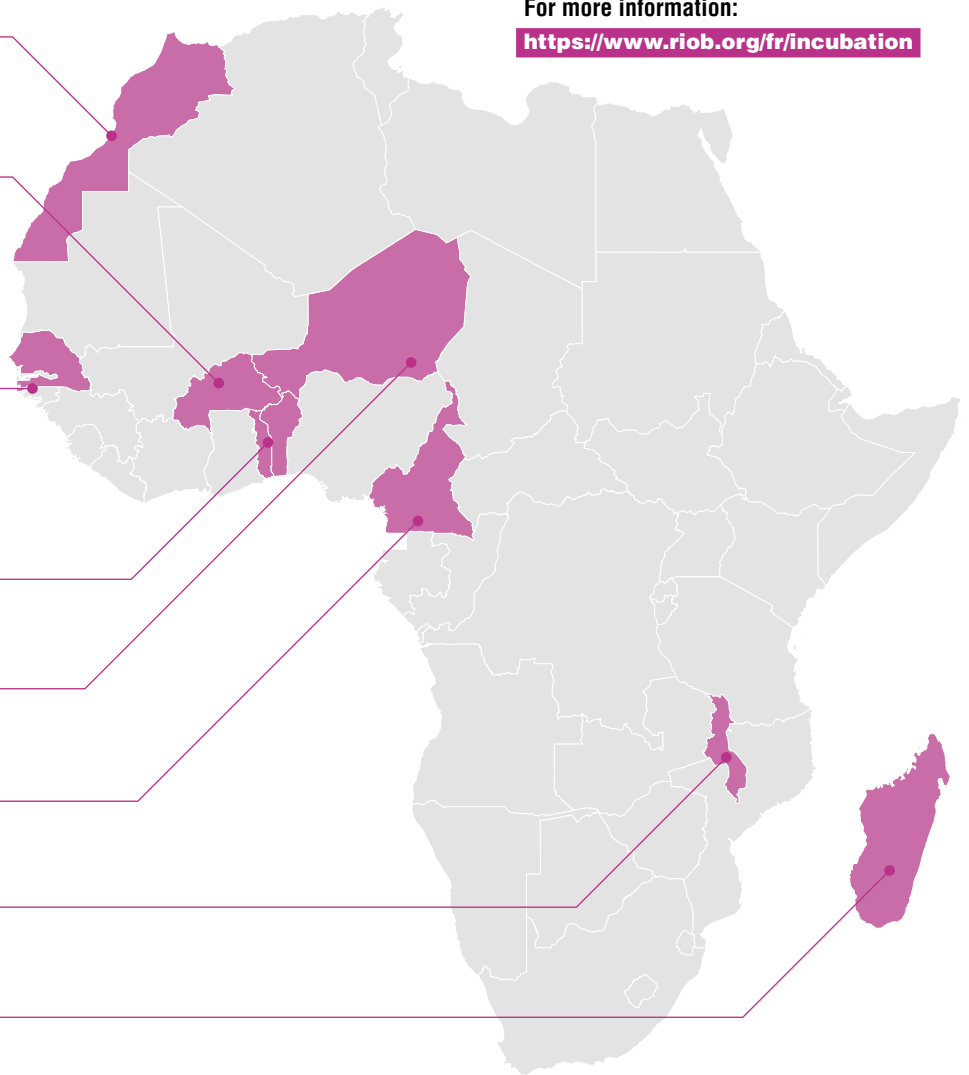
- Sanaga Basin: AERM

Malawi

- South Rukuru and Mzimba River Basins: AERM

Madagascar

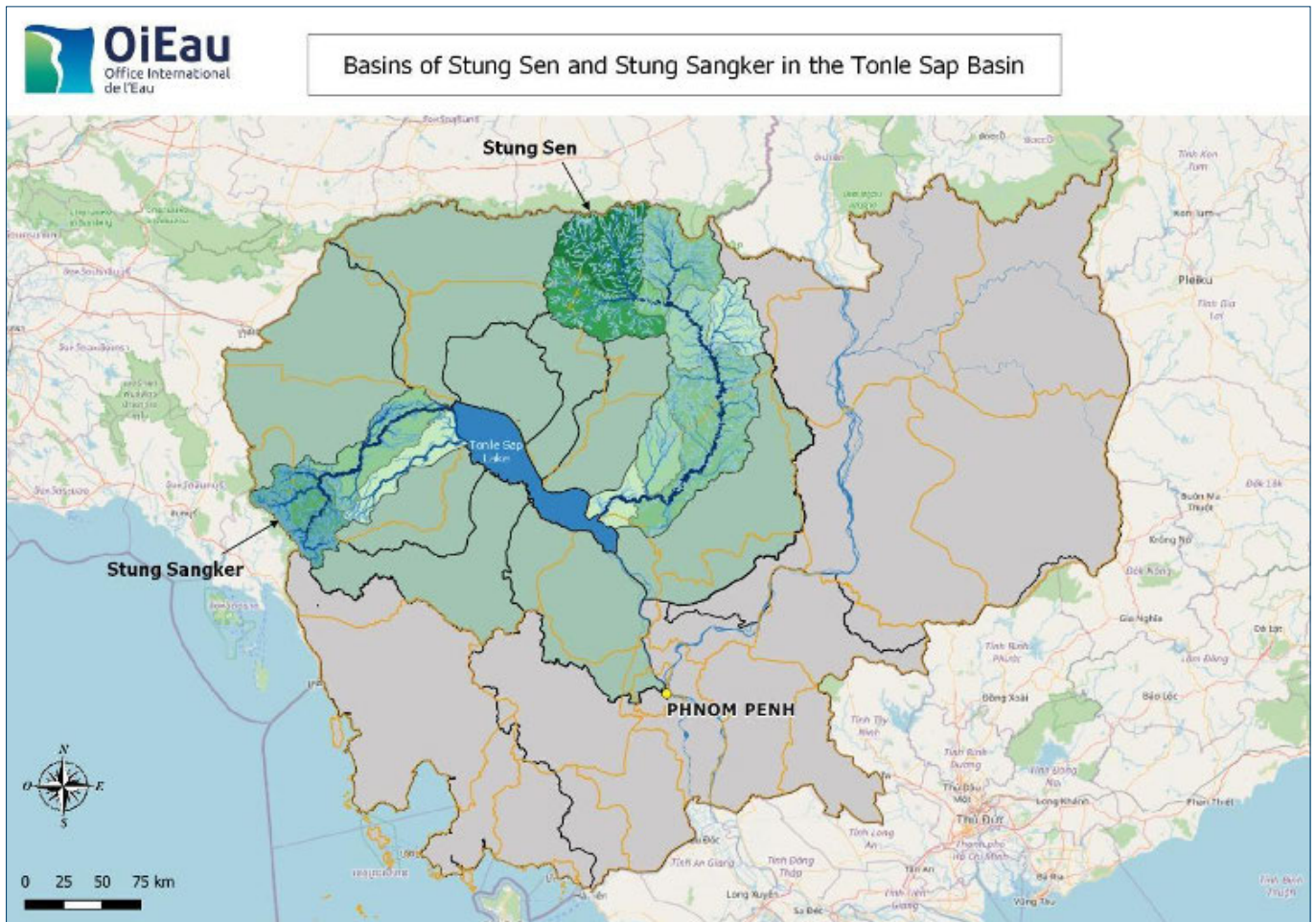
- Lake Itasy Basin: AERMC



AEAG: agence de l'eau Adour-Garonne; AEAP: agence de l'eau Artois-Picardie; AELB: agence de l'eau Loire-Bretagne; AERM: agence de l'eau Rhin-Meuse; AERMC: agence de l'eau Rhône-Méditerranée-Corse; AESN: agence de l'eau Seine-Normandie

Funding

WAT4CAM, a programme for better water management in Cambodia



In Cambodia, a largely rural country, agriculture is a major source of income for the population and one of the pillars of the country's food self-sufficiency and economy. In the fertile Tonlé Sap region, water requirements for irrigation are growing and the pressure on the resource is concerning. A more integrated form of water management is becoming necessary in order to ensure the longevity of the resource, particularly in the context of the Green Revolution and climate change.

As such, in 2017 the French Development Agency (AFD) began funding phase 1 of the "Water for Cambodia" programme, which covers water resource management and the agro-ecological transition in Cambodia. Since April 2021, this initiative,

developed with Cambodia's Ministry for Water Resources and Meteorology (MOWRAM), has received technical support for sub-component 3.2, or the reinforcement and development of IWRM, from OiEau.

This is based on 3 key aspects:

1. Support the implementation of institutionally-backed activities, funded by the French Loire-Bretagne and Rhin-Meuse water agencies, in the Stung Sen pilot basin;
2. Capitalise on the experience acquired through the different IWRM projects in the region to reinforce IWRM for the Tonlé Sap lake;
3. Reinforce the IWRM process in a new basin, Stung Sangker, taking account of the lessons learned in the region.

This multi-level vision will help to support activities already undertaken for the Stung Sen pilot basin, with support on a local level for farmer water user communities (FWUCs), which organise water management and use for the irrigated perimeters.

There is also a desire to improve the understanding of water in areas with growing pressure on water supplies, with the development of dams and irrigation canals. Moreover, OiEau aims to support the implementation and management of user-run associations in order to form basin committees, representing an important local governance framework for water planning and management.

Prepared by OiEau,
in coordination with Mr Puy LIM
President, Tonle Sap River Basin Authority



Data management in the field of water governance faces several challenges, including digitalisation. Indeed, our water resources are under great strain. This is due to human development that uses more and more water and generates more pollution and waste. This situation is aggravated by climate change.

Now more than ever, the management and modelling of data on water resources and their use is essential to the implementation of water policies, cooperation, investment, security and peace.

Among the key elements of the three major Global High-Level Water Panels held in recent years, the Global High-Level Panel on Water and Peace highlighted the crucial importance of reliable and usable data for integrated water management, which can function as an instrument of security and peace. It is important that data can be exchanged on a cross-border level, and can contribute to water diplomacy, innovative financing and evidence-based water policy.

Smart technology, particularly remote sensing and digital transformation, are opportunities, but data management, which can only be cross-sector, must also deal with the fragmentation, dispersion and diversity of stakeholders and sources. Often, the data capital generated by these different stakeholders is widely underused, and the capacities for producing the information required to implement policies and funding plans are widely insufficient.

Yet the digitisation of data, with a view to water governance, is facing several challenges, including digitalisation. This digitalisation may help integrate these sources and promote a systematic approach, which recognises the mutual dependence of water between different sectors, between administrative entities, between towns and rural areas. But political will is a key aspect, as is the management of a leading, respected and legitimate institution, in order to build this cohesion. To this end, basin agencies have an essential role to play. Their mandates give them the remit to build such a digital platform, with water as the connecting element between multiple stakeholders and as a catalyst for development.

Basin agencies therefore represent an environment conducive to digital transformation, as they also tackle the cyber-security challenge. While digital technologies offer near-unlimited possibilities for management and operations, they also go hand in hand with flagrant abuses and risks for which the water sector, basin agencies and distributors must prepare themselves. It is important to consider the durability of information systems and the importance of budgeting for them from the moment they are designed. All too many implemented systems no longer remain. And a crumbling system, with the resulting loss of a history of data, is surely a sign of inefficiency.



Mr François MUNGER,
Director of the Geneva Water Hub



Knowledge

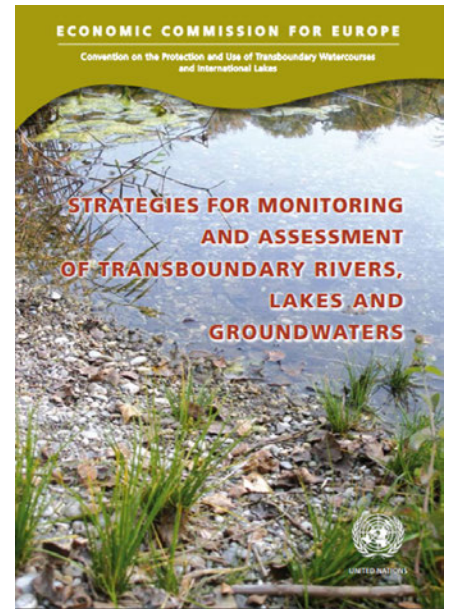
The Water Convention: strengthening knowledge for cooperation in transboundary basins

Cooperating on information sharing, joint monitoring and assessment of transboundary waters is an obligation under the Convention on the Protection and Use of Transboundary Watercourses and International Lakes. In practice, this requires harmonized and comparable methods. Under the Convention, guidances are developed to promote a step-by-step approach and experience sharing events are organized (15th meeting of the Working Group on Monitoring and Assessment and Global workshop on Data Exchange and information in December 2019, expert group meeting on Monitoring and Assessment in April 2021). This helps to meet the various technical, administrative and financial challenges faced at transboundary basin level.

The Area 2 (“Supporting monitoring, assessment and information sharing in transboundary basins”) of the programme of work of the Water Convention for 2022-2024 includes the following activities, in addition to tailored assistance upon request:

- Update of the Strategies for Monitoring and Assessment of Transboundary Rivers, Lakes and Groundwaters to be issued in Arabic, Spanish, English, French and Russian.
- Up to three training or regional workshops on monitoring, information and data.
- Collection of good practices and lessons learned in transboundary data exchange.

Ms Sara DATTURI
*Deputy Head of Environment,
Secretariat of the Water Convention,
United Nations Economic Commission for Europe*



WHAT IS THE CURRENT “KNOWLEDGE” ACTUALITY OF THE HELSINKI WATER CONVENTION IN 2021?

- Assessment of the 10th intervention programme (2013- 2018): 90 M€ committed for 1330 projects, 80% of which are located in Africa. 86% of the expenditure was devoted to decentralised cooperation projects.
- The expert meeting on monitoring, assessment and data exchange (1st April 2021) decided on an update of the document «Strategies for monitoring and assessment of transboundary rivers, lakes and groundwater» and called for it to take into account new technological developments.
- The Working Group on Monitoring and Assessment held its 3rd joint meeting with the Working Group on Integrated Water Resources Management from 26 to 28 April 2021. The meeting informed participants about the activities of the Implementation Committee to provide assistance to Montenegro and Albania in the first request for an advisory procedure by Parties in the history of the Convention. As Montenegro was concerned about the possible transboundary impact of new small hydropower plants planned to be built in Albania on the Cijevna/Cem River, the Committee invited the two riparian States to: establish a joint technical working group on monitoring and assessment; develop and implement a protocol for information exchange; and use the existing bilateral commission to exchange information on planned measures.
- In September 2021, UNECE and UNESCO jointly presented the report «Progress on transboundary water cooperation - global stocktaking on SDG indicator 6.5.2 and needs for acceleration». This is a valuable scorecard for improving IWRM at the basin level!

Knowledge

Mekong: MRC expands its river monitoring network

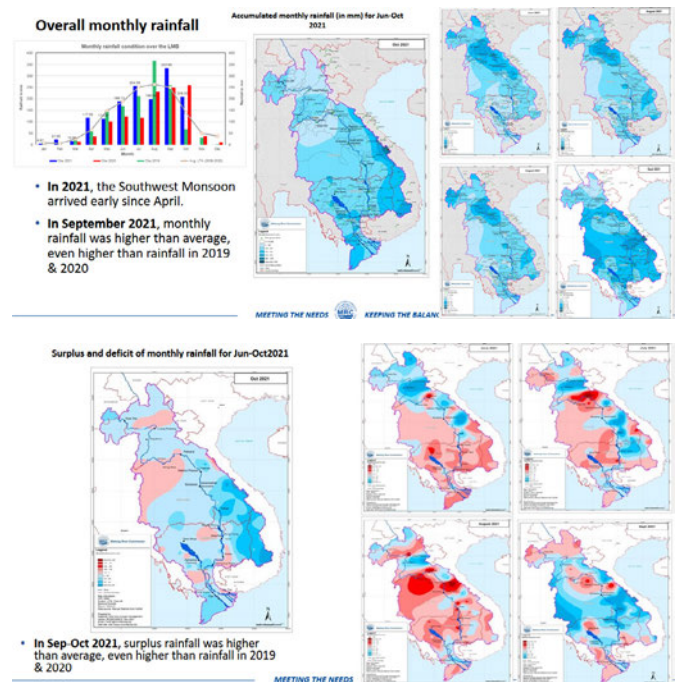
On 25 November 2021, the 28th Mekong River Commission (MRC) Council was held in Bangkok, with representatives from Viet Nam, Cambodia, Thailand and the Lao People's Democratic Republic in attendance and in a virtual setting with other countries.

The Commission focused on

- The Sustainable Hydropower Development Strategy (SHDS 2021) for the Lower Mekong River Basin,
- Progress in basin planning through improved data management.

The Core River Monitoring Network (CRMN) is to provide a sustainable, standardised, harmonised and integrated monitoring system to achieve four specific objectives

- assessment of the status and trends of the whole basin ;
- monitoring the impacts of water infrastructure
- forecasting of floods and droughts;
- assessing the socio-economic conditions of vulnerable people whose livelihoods depend on the Mekong River.



Hydrometeorological monitoring and information sharing in the Mekong River Basin

The Mekong River Basin is Southeast Asia's beating heart. It supports nearly 70 million people, a significant portion of whom rely on it for their daily subsistence. But the river is confronted with multiple threats, as development accelerates and climate change intensifies. This is compounded by limited information sharing on water infrastructure and the way it is operated.

This is why the Mekong River Commission (MRC), an intergovernmental organization working to support its Member Countries Cambodia, Lao PDR, Thailand and Viet Nam, has taken steps to improve and increase information sharing in support of better planning and decision making among the four countries. It has expanded hydrological stations along the mainstream and tributaries of the Lower Mekong River Basin to provide more accurate and faster flood and drought monitoring and forecasting.

The stations are equipped with telemetry systems to transmit near real-time water level and rainfall data in 15-minute intervals to a central database

at the MRC Secretariat and respective line agencies in each Member Countries. Today, 66 telemetry stations have been installed on the Lower Mekong mainstream and the tributaries.

To help governments, development practitioners, private developers, academics and citizens better understand critical issues of the health of the Mekong River Basin, the MRC has also begun to reinvigorate and integrate its data, modelling, flood, and drought tools and processes. Using advanced technologies, the exercise aims to systematize MRC's data collection and acquisition, information management, analysis and assessment, and reporting and communication services.

Interested users can access the collected data via the MRC Data and Information Service Portal, an online data portal. The data portal aggregates and visualises data collected by the MRC's river basin water monitoring networks and other official data from the four Member Countries and MRC upstream Dialogue Partner, China.

The platform represents a storehouse of data, where at least 10,333 datasets are currently available. The datasets include current and historical hydrometeorological and climate time-series, spatial maps, atlases, photographs and sectorial datasets that can be easily searched and filtered.

This is a one-stop service window that promotes transparency and provides a platform for transforming data into evidence-based stories on Mekong critical issues.

Mr Sarann LY
Water and Climate Monitoring Specialist
Mekong River Commission

Knowledge

An information system to improve data management in Senegal

Good data management (uses, quantity, quality) is a prerequisite for implementing state policy on the sustainable management of water resources.

In order to meet the needs of water policy decision-makers, the Water Resources Planning and Management Department (DGPRE) has implemented an important monitoring tool:

- Its piezometric network features 454 functional structures across the entire territory. Measurements are taken at low water level (dry season) and after the rainy season.
- Surface water is monitored by a network of 100 hydrometric stations at key catchment basins, with regular measurement campaigns (at times of low and rising water levels).

The storage, processing and dissemination of data and information is managed by tools and media such as the PROGRES application, the measurement database, the National Documentation Centre with a digital focus and the DGPRE's website.

To tackle the challenges of the interconnection and interoperability of databases, the DGPRE is currently developing an Integrated Information System for water resources along with the International Office for Water (OiEau). It is also working with the National Water Company of Senegal (SONES) to implement smart meters in order to better monitor water measurements.

Mr Niohkor NDOUR

Director of the Directorate of Management and Planning of water resources, Ministry of Water and Sanitation (Senegal)

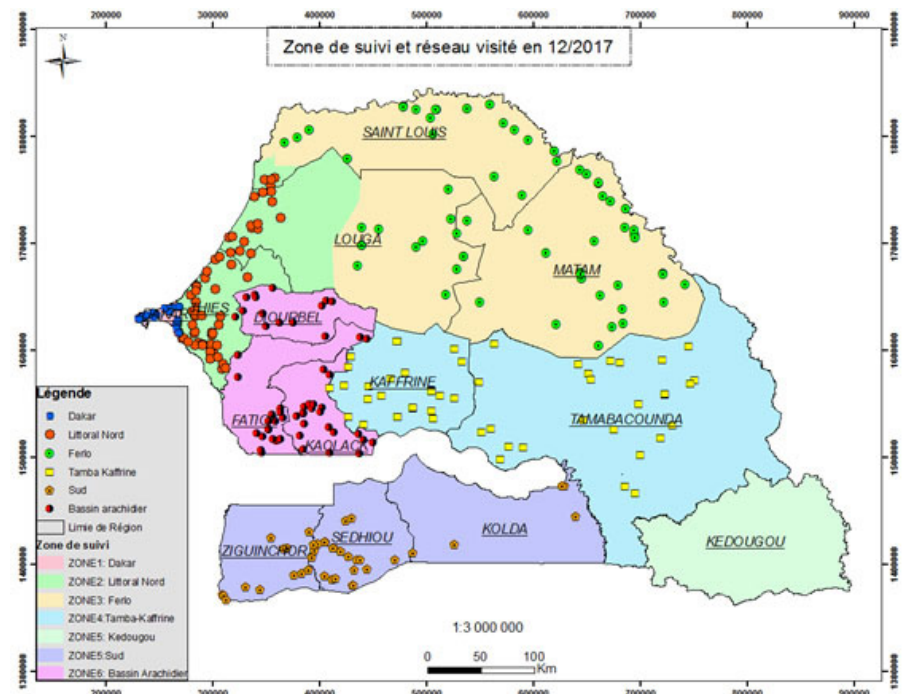
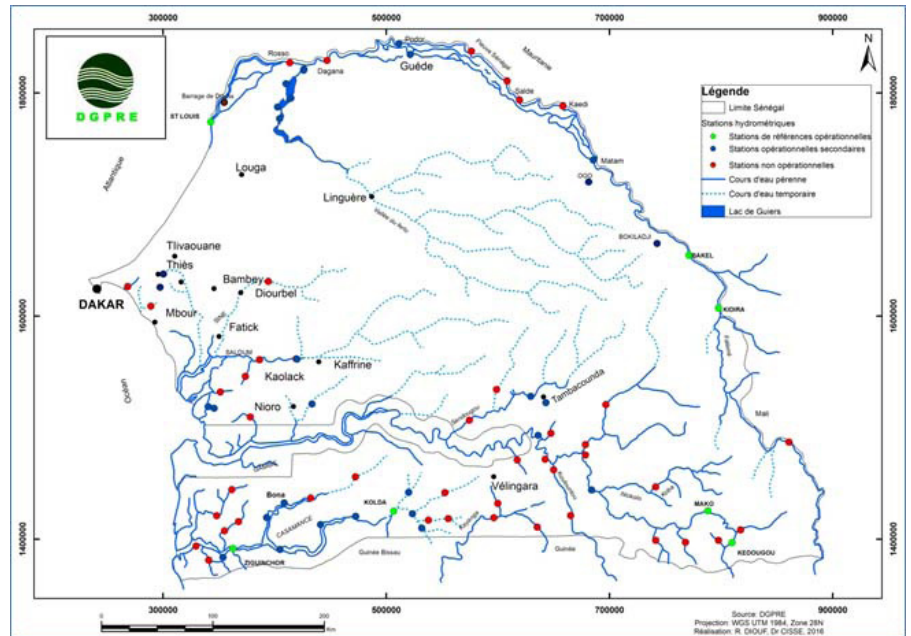


Figure SEQ Figure ARABIC 2. Sampling database

Piezometric monitoring network

Knowledge

BIO-PLATEAUX sharing knowledge on water and biodiversity between French Guyana, Suriname and Brazil



At the International Conference in November 2019 on France's "Biodiversity Plan" the signature of the Cayenne declaration provided a cooperative framework for sharing knowledge on the cross-border Maroni (France - Suriname) and Oyapock (France - Brazil) catchment basins.

The BIO-PLATEAUX web platform, launched in February 2021, is the fruit of this cooperation. Available in French, English and Portuguese, it features over 5,600 sources of data on water and biodiversity enhanced by decision-making support tools (maps, dashboards or hydrological status bulletins).

Working groups come together regularly to identify concrete cooperation actions:

- qualitative and quantitative monitoring (joint in-situ monitoring stations project, spatial altimetry project),
- access to drinking water,
- raising awareness among populations (lessons on water for pupils of Saint Georges de l'Oyapock in May 2021).

BIO-PLATEAUX is co-funded by the European Union (Interreg Amazon Cooperation Program supervised by the Territorial Authority of French Guyana), the National Centre for Space Studies (CNES), French Guyana's Water Authority (OEG) and the country's General Directorate for Territories and the Sea (DGTM). It is coordinated by OiEau, in partnership with the OEG, Anton de Kom University (Suriname) and the Amapá Agency (Brazil).

"[...] Better connecting French Guyana to its Amazonian neighbours is both a very concrete response to the expectations of the inhabitants [...] and a way of safeguarding the natural heritage of this area, which we owe it to ourselves to protect. In this respect, I welcome the BIO-PLATEAUX project: the water and aquatic biodiversity observatory will make it possible, in particular, to improve knowledge and awareness of the population of the harmful effects of illegal gold washing on water quality, or to improve flood forecasting on the Maroni River, the damage to which we saw a few weeks ago.

Mr LECORNU
French Minister for Overseas

World Conservation Congress (IUCN): BIO-PLATEAUX promotes transboundary cooperation with the signing of a framework partnership agreement for the hydrological monitoring of the Maroni River

On the occasion of the World Conservation Congress (Marseille, 3 -11 September 2021), BIO-PLATEAUX was able to highlight transboundary cooperation on the Maroni and Oyapock rivers. At the project steering committee meeting organised as part of the congress, the authorities of the State of Amapa in Brazil, Guyana and Suriname noted the progress made since the Cayenne conference in 2019. A technical partnership framework agreement for the hydrological monitoring of the Maroni River watershed was signed between the French Minister for Overseas France, Sébastien Lecornu, and the Minister of Public Works of the Republic of Suriname, Riad Nurmohamed. The aim of this agreement, which is in line with the positive relations between Suriname and France, is to develop the monitoring of water resources on the river and to better protect the population against the risk of flooding.

Established in coordination with
Mr Franck CHOW-TOUN
Head of the Water Planning and Forecasting Unit,
Guiana Water Office (OEG)

& **Mr Remi BOYER**
Project Manager,
International Office for Water

Knowledge

The Organisation for the Development of the Senegal River strengthens its "Digital Collections"

To bolster its digital offer and improve the way the organisation's experiences are shared with the public, the OMVS Centre for Documentation and Archives (CDA), based in Saint-Louis, launched a new information platform on 31 May 2019 to mark International Archives Day.

In February 2021, this "Digital Collections" web platform got a new look! It is now available as a mobile app on Android, and can be downloaded directly from Play Store.

This new communication channel is doubly original:

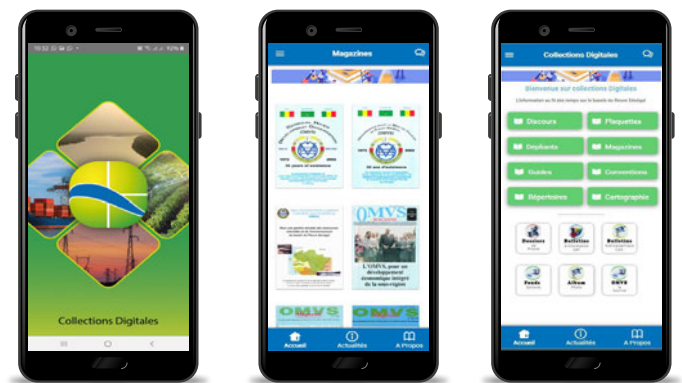
Not only does it enable a wider audience (particularly young people) to easily learn more about OMVS, thanks to the grouping of a host of simple and highly varied information materials through a single tool. These are mostly brochures, leaflets, audio features, videos, talks, photo albums, maps, newspapers and magazines, all produced from the time the organisation was founded right up to today.

It was also entirely designed and implemented by the CDA itself.

To learn more about this rich heritage on your smartphones or tablets, download the new app at:

<https://play.google.com/store/apps/details/?id=appcollectionsdigitalesomvsorg.wpapp>

Happy reading!



Local voices for jobs and peace in the Senegal River Basin

On the road to the 9th World Water Forum, OMVS is carrying out the original project "Voices from the River, Path to Peace" with an alliance of partners. The aim of this project is to organise a strategic and creative reflection on the issues related to water and employment by bringing together riparian populations, OMVS leaders, personalities and experts. OMVS is aware that the key to strengthening peace in the basin lies in taking better account of local knowledge and opinions and in promoting inclusive local economies, whose articulation with regional development dynamics and the impacts of climate change remains a challenge. To support it in this ambition, its partners, including the Dakar Water Pole and the Senegalese think tank IPAR, will contribute to the design of a new fund that will aim to support initiatives led by the communities of the basin in the field of employment and local entrepreneurship. This will take the form of a participatory platform bringing together local stakeholders with initiatives, the technical support chain and funding, using the possibilities offered by digital technology.

To invite local populations and their youth to engage in this dialogue, the musician Baaba Maal, patron of this project, and artists from the four countries of the river have lent their voices to create a new musical work and will participate in the exchanges planned by the project. As the OMVS prepares to celebrate its 50th anniversary, this initiative will be a further step towards the realisation of the OMVS Nouakchott Declaration of 2003.



Mr Jean WILLEMIN
Geneva Water Hub

www.voixdufleuve-voiedelapaix.com/



Copyright Y. Barou



"Today, better water management is a challenge that we face on a daily basis. The European Commission is continuously working to preserve the quality of this resource. Through its directives, it implements actions to reduce its pollution:

- *Reducing the use of synthetic fertilisers in favour of green fertilisers,*
- *Limiting the use of pesticides,*
- *Reduction of toxic substances in industrial waste,*
- *Encouraging the reuse of water for irrigation or in industrial processes.*

Initiatives, such as the Green Deal, aimed at making Europe climate neutral by 2050, include the promotion of the circular economy and the preservation of biodiversity.

In addition to these qualitative aspects, even if Europe has abundant freshwater resources, the threat of overexploitation is present, while the needs to ensure food security are growing, and the impacts of climate change are increasingly significant: water scarcity is no longer confined to the Mediterranean countries, and floods have recently hit Belgium and Germany.

The price to be paid in human lives is unacceptable, and the economic impact is considerable: drought and water stress are responsible for €9 billion in damage each year, not counting the damage to ecosystems.

And the most widespread climate scenarios show that the impact on the EU economy will grow to around €65 billion per year by the end of the century.

Our response is to establish an Agenda for Water Resilience. We need policy makers and practitioners in the sector to develop an active response to the adaptation challenge.

What we are experiencing requires us to pay more attention to water efficiency through legislative instruments, strategies, such as the Circular Economy Action Plan, and at sector level, in areas such as agriculture, energy and transport.

It is time to strengthen this holistic approach, this intelligent implementation of water, notably through the European Green Deal and the UN Sustainable Development Goals.

My message is simple: we need strong multilateral organisations, like INBO, to develop a shared and coordinated force to achieve this."



Ms Veronica MANFREDI,
Director for Quality of Life (Air, Water & Industrial Emissions)
Directorate General for the Environment (DG ENV) - EU Commission
Chair of the International Commission for the Protection of the Rhine (ICPR)
"Opening speech - 19th International Euro-INBO Conference - Malta - December 2021"

Planning

EUWI+, planning in river basins for 30 million citizens on the borders of the European Union

The "European Union Water Initiative Plus" (EUWI+), launched in 2016 and co-funded by the European Union, the Austrian Development Agency and the French Artois-Picardie water agency, aims to improve water management in the countries of the Eastern Partnership (Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine) in line with the principles of the European Water Framework Directive (WFD). It concluded on 6 July 2021 with a steering committee that brought all the partners together.

Planning, a significant aspect of this important project, was developed through the establishment of **management plans** for nine catchment basins covering 500,000 km² and affecting 30 million inhabitants. Experts from Austria and France worked closely with some hundred experts from the six countries in order to ensure that the process could be reproduced for future cycles and other basins. Technical workshops, the sharing of experience and methodological guides were used to build capacities.

Despite the varying commitment of the six countries to the European Union (some countries have signed association agreements, others were less committed), all have decided to follow the requirements of the WFD. All aspects of the WFD have been discussed for this first generation of catchment basin management plans. The absence of comprehensive monitoring has made it difficult to qualify bodies of water. Similarly, economic analysis, namely the costing of the programme of measures, as well as public consultation, are among new issues. Water information systems have also been launched in

order to promote the sharing of data between organisations.

In order to be fully appropriated and to consolidate their legal scope, all catchment basin management plans must be officially approved through procedures that vary according to the country (from centralised to decentralised methods).

The implementation of **programmes of measures**, which are essential to achieving environmental objectives, demands suitable governance, funding mechanisms and broad communication in order to involve and motivate stakeholders. In this first planning cycle, sanitation is the predominant cost in programmes of measures.



www.euwipluseast.eu/en

www.facebook.com/euwiplus

Youtube channel:

www.youtube.com/channel/UCjK1x3nUplee-G55JpD_nPAw

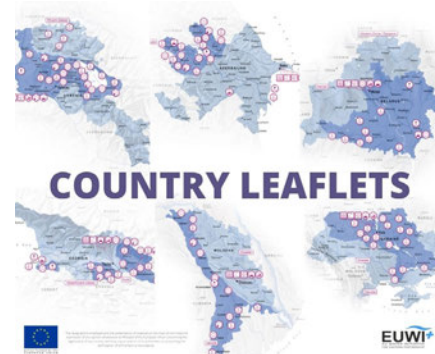
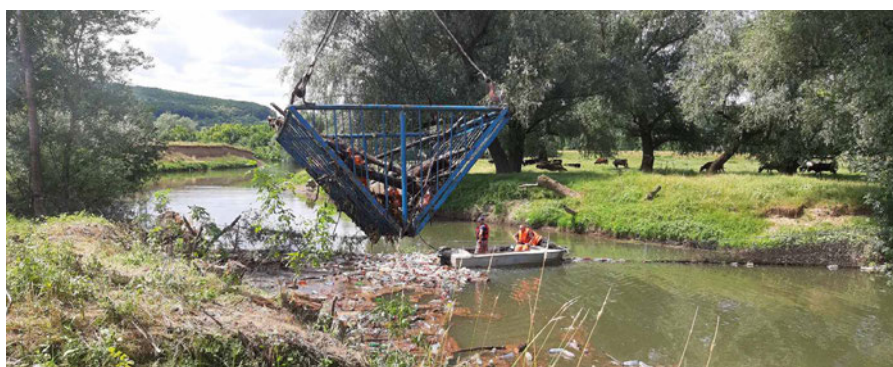


Figure 1: Map of catchment basins included in the EUWI+ project in the Eastern Partnership countries



LOOKING AHEAD

As the results of EUWI+ have been satisfactory, the European Union and the beneficiary countries of the Eastern Partnership wish to continue.

Within the framework of the Green Pact for Europe, the recent European Union Environment Programme (EU4Environment) aims to make the economies of the Eastern Partnership countries greener. A component of this programme called "EU4ENV - Water Resources and Environmental Data" aims to extend the EUWI+ approach by enriching it with an important component dedicated to environmental data management and sharing.

Because of the results, the confidence and the experience acquired, the European Commission is remobilising the EUWI+ team to implement this new project. The aim is to develop management plans for new river basins, tools for adaptation to climate change, stakeholder involvement, and the valorisation and dissemination of data, concepts and results.

A special feature is the participation of the French Development Agency and the Austrian Development Agency to give meaning to the Team Europe initiative, which aims to make funding mechanisms consistent with European policies.

Mr Philippe SEGUIN and Ms Chloé DECHELETTE
Project officers - OIEau

Planning

New technology for Water Law enforcement in Romania

In Romania, as in all countries in the world, the effective governance of water resources and aquatic environments requires the organisation of an inspection and control service for all types of water-related activities. This control system must be organised by the State, under the responsibility of the governmental administrations concerned, and be made operational at the level of territories, districts or regions and basins and sub-basins.

Experience shows that water resources management at the level of river basins facilitates the effective implementation of this system of water control and policing. And it is also of the utmost importance that this system be deconcentrated, acting as close as possible to the field, the users and the actors, while having a framework for action developed at the national level.

While the importance of water policing is no longer in question, a recurrent problem remains throughout the world: the application of legislative and regulatory texts, their effective and efficient implementation, i.e. the progress made in the field of water resources and aquatic environments. Indeed, compliance with legislation, and even more so with rules outside the water sector that influence the resource, remains in many places a challenge that is all the broader because it concerns all users, and also relates to areas parallel to the water sector, such as urban planning, agriculture or energy for example.

Beyond this aspect, the reality of the application of the rules thus established and therefore the reality of compliance with these rules is a determining factor in guaranteeing progress in the sustainable management of the resource.



Type of activity failing to comply with Water Law	Total nr. of sanctions granted	Total nr. of warnings granted	Total nr. of fines applied	Total value of fines applied (RON)	Total nr. of prosecution proposals	Total nr. of proposals for activity suspension
Sand and gravel excavation from riverbeds	301	139	162	7.453.500	30	6
Waste water treatment	255	153	105	4.947.050	6	0
Water abstraction	159	124	35	920.000	0	0
Landfills	49	38	11	420.000	0	0
General Total	764	454	313	13.470.550	36	6

Within the National Administration "Romanian Waters", the activity of water inspection and control is the responsibility of the Water Law enforcement operational service. In each of the units of the Romanian Waters' subsidiaries (11 Basinal Water Administrations and 42 Water Management Systems corresponding to parts of the 42 counties included in different river basins), there are teams of specialized water inspectors who are controlling in the field the compliance of the water users with the provisions of the Water Law and subsequent specific regulations. The total number of controls and the number of sanctions (cf. 2020 chart infra) is a good indicator of the overall activity of Water Inspection:

It also highlights the main problems: sand and gravel exploitations from river beds which are either non-compliant with the regulations in force or totally illegal. This activity has major negative consequences on aquatic ecosystems, on river morphology and on hydrotechnical works and bridges. Improving law enforcement also has an economic interest: it restores fair competition between construction materials companies.

An electronic platform has been developed by the Ministry of Environment, Water and Forests in partnership with the Service for Special Telecommunications, the National Agency for Mineral Resources, the General Inspectorate of Romanian Police and the State Inspectorate for the Control of Road Transportation. This "Radar of sand and gravel exploitations" that monitors mineral aggregates' origin, exploitation and transport, will be fully operational in 2022. The platform will provide the competent authorities with a clear record of users/beneficiaries operating on the basis of regulatory acts issued by the authorities, including water management permits, making it far easier to detect illegally exploited quantities.

The application will also be accessible to citizens: they will be able to dial 112 and report to the police and inspection services trucks loaded with sands and gravel but not referenced in their mobile phone application.

Ms Ruxandra BĂLĂEȚ
Counsellor, Ministry
of Environment, waters and
Forests, Romania

Mr Gheorghe CONSTANTIN
Director, Ministry of Environment,
waters and Forests, Romania

Planning

Danube basin: updating of river and flood risk management plans

Since 2000, and 2007 respectively, the International Commission for the Protection of the Danube River (ICPDR) has been acting as the platform for the implementation of all transboundary aspects of the EU Water Framework Directive (WFD) and the EU Floods Directive (FD) within the Danube River Basin.

Consequently, the ICPDR Contracting Parties have also committed themselves to the development of the coordinated international River Basin Management Plan (DRBMP) and international Flood Risk Management Plan (DFRMP) for the Danube River Basin. Both plans are prepared, implemented, and reviewed every six years. They set the course of action for organisations to work together with national governments, and a variety of stakeholders, towards shared aims for the 80 million people in the Danube community.

Currently, the DRBMP and DFRMP are being updated for the next WFD and FD implementation period from 2021 to 2027. These updates will provide the framework for operational integrated water resources management, by giving an overview of the key issues and challenges at hand and setting out the central objectives and required actions. In addition, both plans offer rich and comprehensive information about water management issues in the Danube River Basin in several maps and annexes.

“ The environmental objectives set out in the Water Framework Directive at European level can only be achieved through increased cooperation with other sectors (agriculture, hydropower, inland navigation, etc.). ”

Mr Ivan ZAVADSKY

(Executive Secretary, International Commission for the Protection of the Danube River - ICPDR) at Euro-INBO 2021

The DRBMP Update 2021 in a nutshell:

Prepared under the lead of the River Basin Management Expert Group (RBM EG) and in close cooperation with all relevant Expert and Task Groups, it

- includes a review of the significant pressures in the Danube River Basin (organic pollution, nutrient pollution, hazardous substances pollution, hydromorphological alterations),
- shows protected areas for the protection of habitats and species, nutrient sensitive areas, and other protected areas,
- provides an overview of the monitoring networks and the results of the revised status assessment,
- lays down environmental objectives and exemptions according to the WFD,
- refers to integration issues such as hydropower, navigation and biodiversity (including sturgeon conservation activities),
- presents results of the economic analysis (economic analysis of water uses; principle of cost-recovery, including environmental and resource costs) and
- includes the Joint Programme of Measures addressing the pressures and outlining necessary measures of Danube-basin wide importance.

For the first time, the “Effects of Climate Change (Drought, Water Scarcity, Extreme Hydrological Phenomena and other Impacts)” were identified as Danube-basin wide significant pressure to be addressed with measures in the upcoming years.



The DFRMP Update 2021 in a nutshell:

Prepared under the lead of the Flood Protection Expert Group (FP EG), it:

- summarizes the results of the updated preliminary flood risk assessment (PFRA) which was undertaken to provide an assessment of potential risks stemming from floods,
- presents the areas of potential significant flood risk in the DRB as well as the flood hazard maps and flood risk maps,
- presents the strategic basin-wide level measures to prevent and reduce damage to human health, the environment, cultural heritage and economic activity,
- demonstrates the efforts made by the ICPDR in coordinating the application of the FD and of the WFD, focusing on opportunities for improving efficiency, information exchange and for achieving common synergies and benefits having regard to the environmental objectives laid down in Article 4 of the WFD,
- promotes the solidarity principle in flood risk management, stipulating that one should not pass on water management problems in one region to another.

One of the most important steps in the process is the launch of the public consultation activities taking place for six months from 31st March to 30th September 2021. An opportunity for the public and key Danube stakeholders to have their say in the development of the plans. These various activities distributed online and via social media makes this one of the most important participatory river basin management efforts in every six-year management cycle of the ICPDR.

Ms Edith HÖDL

ICPDR's Technical Expert for River Basin Management.

Ms Héléne MASLIAH-GILKAROV

ICPDR's Technical Expert for Public Participation and Communication.

Planning

Central Asia : Improving operational management of the Amu Darya flow through computer-aided modeling



Performance of a complex water management system in the Amu Darya River Basin has become more complicated recently due to lack of timely provided data, namely good quality forecasts and calculations of water balance elements of the Amu

Darya River and its tributaries (such as water losses, transformation of water volume in the river from abrupt changes in flow rates, return flow). In this context, for better water management it is suggested to improve reliability and quality of analytical information, i.e. modernize the system of operational management at the Basin Water Organization “Amu Darya” (BWO Amu Darya) by incorporating into this system mathematical models and intra-annual water management electronic-rules in a user friendly format (GIS-interface, calculation module, DB). To this end, since the beginning of 2021, SIC ICWC jointly with the Chinese Institute of Geographic Sciences and Natural Resources Research and with the involvement of BWO Amu Darya and its territorial branches has been implementing “The electronic-rules development of flow regulation in the Amu Darya River basin” Project under a contract with the Ministry of Innovation of Uzbekistan. In May 2021, the analysis of current operations of BWO and its territorial branches on planning and operational management of water resources in the Amu Darya basin has been completed. Based on this, an information base and BWO’s requirements

for electronic-rules were developed. Balance calculations of BWO and SIC ICWC show that since 1992 balance discrepancies in middle and lower reaches of the Amu Darya River have increased substantially. In order to derive losses from actual river balance discrepancies and include them into the mathematical model of river flow transformation (which is to serve as a basis for computer-aided operational management program), special studies are currently carried out for more precise definition of morphometric relationships along the Amu Darya River with the help of satellite images.



Mr Anatoly G. SOROKIN
SIC ICWC

A pan-European survey to strengthen and improve policies and strategic planning regarding river continuity restoration



Across the European Centre for River Restoration (ECRR) member countries it was commonly agreed that there was no overview of longitudinal river continuity restoration policy, planning and implementation progress across different countries. The ECRR River Continuity Survey therefore made it possible to investigate the current situation in general and country-specific regarding the recognition of the importance of and opposition to river continuity

in national policies and the potential for restoration. Asking 60 questions to national governments and river management authorities provided insight into policies and the required support concerning (financial) guidance and tools. In order to advance river continuity restoration the main strategy that should be in place per country and/or group of countries have been investigated.

The answers to this survey and the results of their analyses have allowed initial conclusions and recommendations to be drawn as to the current situation regarding river continuity restoration policies and strategic planning in wider Europe. This information can be used in follow-up activities to formulate advices, improve current policies or propose and develop new policies and national restoration strategies, and generate greater support. Altogether, this could subsequently be developed into a Europe-wide openly accessible database on the plans, progress and status of river continuity, assisting national governments and river authorities in restoring river continuity. This will be beneficial for all the participating countries for achieving the

relevant water legislation targets and UN Sustainable Development Goal 6.5. The overall conclusion is that European and national governments, supported by NGOs and (knowledge) networks (such as the ECRR), can together contribute to the development of the policy, planning and implementation to achieve the specific goals of longitudinal continuity restoration.



Ms Sharelle VERHEIJ
European Centre for River Restoration (ECRR)

<https://www.ecrr.org/>

Link to the full report :
<https://www.ecrr.org/Publications/id/980>
<https://www.ecrr.org/Publications/id/981>

Planning

The International conference “Groundwater, key to the Sustainable Development Goals”: for the conjunctive planning of groundwater and surface water!

The "Agenda 2030" and the "Sustainable Development Goals" (SDGs), multinational and multilateral roadmaps, constitute a great message of hope for the future of human societies and terrestrial ecosystems, currently facing the impacts of global change. Water is part of the 2030 Agenda especially through SDG 6.

Within this framework, groundwater resources (GWR) have also a key role to play, directly in terms of food, hygiene and health, protection and restoration of ecosystems and biodiversity ... and, indirectly, for the reduction of poverty and inequalities, contribution to education and gender equality, peace.

This conference organized by IAH-CFH, UNESCO-IHP & FWP (**Sorbonne University Paris, May 18-20, 2022**) provides an opportunity for exchanges between the different national and international stakeholders in the fields of water and sustainable development:

- decision-makers, from the international level to local authorities, like Water Agencies, basin authorities and local structures for management and protection of groundwater...
- funding agencies and donors
- NGOs, civil society, local communities, farmers, water and sanitation companies, industries ...
- groundwater resource specialists : scientists, national and local authorities, planning authorities, engineering firms and consultants...

Main objectives:

- To examine the overall relationships between water-related SDGs, their stakeholders and groundwater
- To share knowledge, experiences, findings and good practices on GWR in sustainable development trajectories
- To elaborate recommendations to ensure the best integration of groundwater resources into the SDGs.

Conference process:

- A prominent focus of expression will be given to the youth: high school and University students, young researchers and professionals...
- Invited speakers (key notes) and presentations by participants (oral communications, poster sessions)
- Round tables opened to conference participants
- Innovative forms of animation and presentation (summaries produced on the basis of contributions received in advance; themes entrusted to thematic animators, prior to the conference)



Given the importance of the topics addressed, the conference will take place whatever the circumstances. The health situation (COVID 19) may lead to a mixed organization, combining on-site & online participation.

Visit our website:

<https://cfh-aih.fr/colloques-et-visites/groundwater-key-to-the-sustainable-development-goals.html>

KEY DATES

- Registration Opening | **January 2022**
- Deadline for Abstract Submission | **January 21st 2022**
- Deadline for Early-Bird Registration | **March 15th 2022**
- Third Circular | **April 20th 2022**
- Abstract's Acceptance | **March 1st 2022**

MAIN TOPICS:

- Role and assets of GWR in sustainable development trajectories
- Quantity and quality of GWR today and in the future for the achievement of the SDGs
- Specificities of governance and good management practices for GWR, "Water Stewardship"
- Strategies, available means, innovative financing tools for the good governance, development and protection of GWR
- Services rendered and benefits (social, financial, ecosystemic...) of the good status of GWR and their appropriate governance. Links between SDGs and the European Water Framework Directive and Flood Prevention and Management
- Opportunities offered to French local authorities by the Oudin law for financing development support.

“ All the IWRM tools for surface waters can also be better mobilized for groundwater, especially the management of shared waters, which is important not only from the technical point of view, but also from the diplomatic point of view. It is a tool for peace and regional cooperation, as for example in the case of the Guarani aquifer. ”

Mr Eric TARDIEU (INBO Secretary General)
at the ISARM2021 Conference,

Planning

Strategic action plan: joining forces for IWRM in the Amazon basin

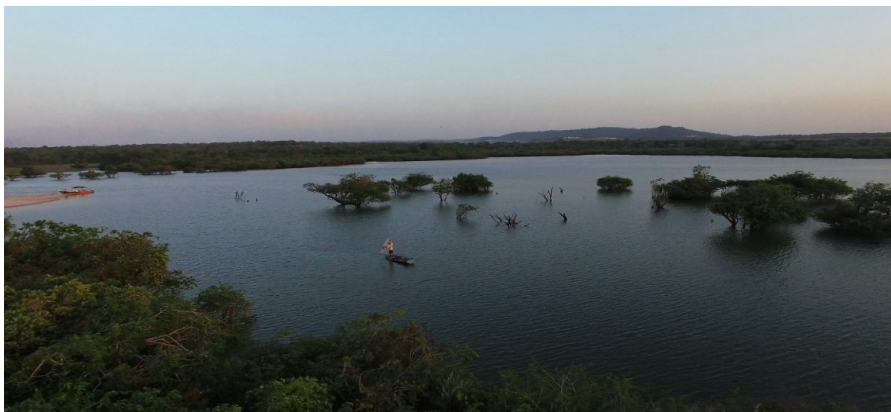
In light of the challenges to the largest freshwater system in the world, the eight member countries of the Amazon Cooperation Treaty Organization (ACTO) adopted a Strategic Action Plan (SAP) which outlines the regional IWRM cooperation framework.

Based on a shared vision, this strategy defines joint actions revolving around three main themes:

- strengthening IWRM;
- adapting to climate change;
- and managing knowledge.

The ACTO is currently implementing ten priority SAP actions through the GEF/UNEP and the Government and National Waters Agency of Brazil. These will shortly include actions relating to water, sanitation and solid waste management with the support of the IADB.

The actions seek to overcome the main barrier to IWRM in the region, and strengthen national capacities so that IWRM can work around the differences existing between the countries and advance in consolidating a regional framework. At the same time, national interventions seek to shore up the



resilience of the population and ecosystems against climate change. Meanwhile the integrated monitoring system, which includes the Amazonian Water Network and the Water Quality Monitoring Network, will support decision making by providing data to the Amazonian Regional Observatory of ACTO.

Lastly, based on the Nexus approach, ACTO promotes planning that will complement the SAP with a portfolio of sustainable investments aimed at meeting SDG 6.

Ms Maria APOSTOLOVA
Amazon Cooperation Treaty Organization
Team Leader "Amazon Basin Project"

"In terms of public management, things are often difficult to put into practice. Having such a plan is a great success in itself, but it would be more powerful if the problems, courses of action and projects that have been identified by all the countries began to be implemented. This is what we are currently doing.

This strategic action plan has to be implemented over time and according to the funding we receive. This is one of the crucial elements for managing our catchment basin. Countries are making an effort on a national level, but we need more contributions through international cooperation in order to be able to implement these projects.

As part of these actions, implementing surveillance networks for water quality, erosion and ecosystems, for example, will be very important. We need to work more on these surveillance networks and make them integrated and interoperable between Amazon countries. In order to make decisions, know how the catchment basin is behaving, train other people and guide political decision-makers towards the best choices, we need this information to be reliable, up-to-date and as precise as possible. As such, in the context of all these priorities of the strategic action plan, these surveillance networks will undoubtedly help us to produce early warning systems.

The Amazon territory covers 40% of Latin America. In the Amazon basin we face social, economic, environmental and cultural challenges. However, one of the most significant challenges is the complete implementation of our Strategic Action Programme".

Ms Maria Alexandra MOREIRA LOPEZ
General Secretary, Amazon Cooperation Treaty Organization.

Planning

Towards the implementation of a regional fund for adapting to climate change (FRACC) in the Niger basin

The Niger Basin Authority (ABN), formed in November 1964, includes 9 countries: Benin, Burkina Faso, Cameroon, Côte d'Ivoire, Guinea, Mali, Niger, Nigeria and Chad. Its principal objective is to promote cooperation between member states and ensure the integrated and harmonious development of the Niger basin, in several fields such as energy, hydraulics, agriculture, livestock rearing, fishing and fish farming, forestry and logging, transport, communications and industry.

The Programme for Integrated Development and Adaptation to Climate Change in the Niger Basin (PIDACC) is a multi-banker programme. The African Development Bank funds its implementation to the tune of 132 billion FCFA, but the continuation of its actions on attenuating the effects of climate change and adapting populations and ecosystems requires autonomous and lasting funding from the ABN.

The implementation and operationalisation of a regional fund for adapting to climate change (FRACC), as well as a mechanism for payments for environmental services (PES) is one of the results expected from the PIDACC to lastingly ensure the funding of ecosystem preservation and population resilience actions.

This development requires to ABN's Water Charter to sanction the principles of polluter-payer and user-payer. Party states will have to take account of these principles of polluter-payer, applicable both to legal entities and individuals, and user-payer, which should be applied with price scale according to the amount consumed by each user.

The Executive Secretariat of the ABN has therefore set up an ad-hoc committee tasked with advocating and consultations with national and/or international stakeholders (see diagram) in order to propose a

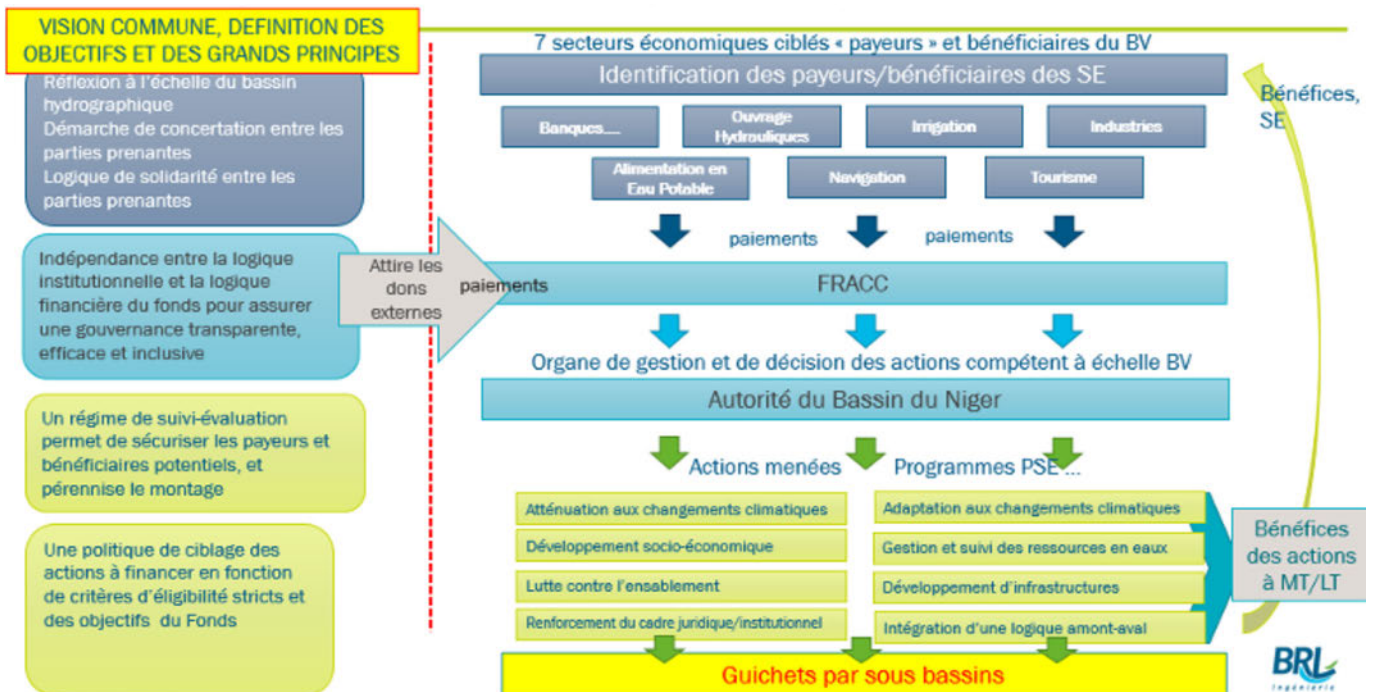
consensus-based legal text for the operationalisation of the FRACC and the PES mechanism. The committee will draw on feedback from the implementation process of the FRACC through significant feasibility studies and consultations already carried out by the ABN.



Mr Soungalo KONE
Modelling Expert, Niger Basin Authority

<http://www.abn.ne/>

Conceptual diagram of the identified assembly (flowchart)



Planning

Presentation of the water, energy, food nexus in Central Asia

This presentation has been prepared as part of the preparation of a consultation paper for the regional dialogue on the topic of transformation of the energy-water-soil nexus in Central Asia.

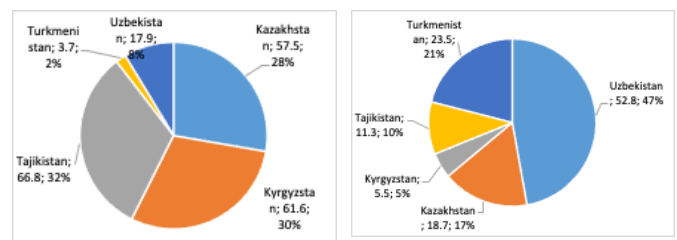
Macroeconomic indicators: macroeconomic statistics highlight important aspects of the economic situation in a specific country or region: employment, GDP, inflation, production volumes, etc. Macroeconomic indicators are therefore essential for government decision-making in the political, social and economic spheres. One of the key indicators reflecting the economic situation in which a country finds itself is the gross domestic product (GDP). The economic crisis of 2015- 2017 and the crisis at the end of 2019 due to the coronavirus pandemic had a negative effect on the economy. The pandemic also had a significant impact on the economic development of Central Asian countries. Kazakhstan's GDP declined by 2.6% in 2020 compared to an increase of 4.5% in 2019. Kyrgyzstan's GDP fell by 8.6% between January and December 2020. Meanwhile, in 2020, Tajikistan, Turkmenistan and Uzbekistan recorded economic growth of 4.5%, 5.9% and 1.6% respectively.

The analysis of the water situation in the Central Asian countries reveals that the available natural water resources reach 874% of the total water needs in Kyrgyzstan and 591% in Tajikistan. Although these available water resources are significant, they are used to address water scarcity in Turkmenistan and Uzbekistan, where the available natural water resources are 16% and 24% respectively. When upstream states meet their regional commitments, available water resources increase to 109% in Turkmenistan and 128% in Uzbekistan. By 2030, available water resources are expected to reach 95% to 100% in Uzbekistan. As of 2018, centralised water supply for the urban population is highest in Kazakhstan and Uzbekistan, reaching 97% and 98% respectively. In Tajikistan and Turkmenistan, the rural population's access to centralised water supply is less than 45%. The amount of natural water resources per capita is 373 m³ in Uzbekistan and 7560 m³ in Kyrgyzstan.

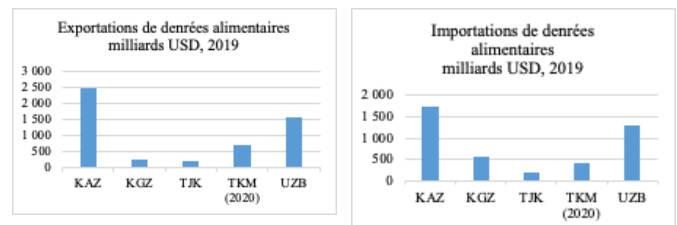
Kyrgyzstan and Tajikistan do not depend on transboundary waters, while 78% and 88% of water resources in Uzbekistan and Turkmenistan respectively

come from transboundary sources. Kazakhstan's water resources are partially dependent, i.e. 12%, on transboundary waters. Losses in the irrigation network have a strong impact on water security: Tajikistan and Uzbekistan lose 57% and 45% of water respectively between the point of abstraction and the field. In Kyrgyzstan and Kazakhstan, these losses amount to 41% and 31% in the Syr Darya basin.

The total renewable water resources at national level and the total water withdrawn are shown below.



Land/food: Assessments and comparative analyses have been carried out on land use and cropping systems, the main elements of production, and the export and import of foodstuffs. These have led to conclusions about the role of agriculture as a whole and, in particular, in land reform and food security in Central Asian countries (see graphs below).



Death of Professor Viktor DUKHOVNY



Born in 1934 in Uzbekistan, Professor Dukhovny worked mainly in Central Asia. He was an active organiser of water partnerships, including the

Interstate Commission for Water Coordination of Central Asia (ICWC), the International Fund for Saving the Aral Sea (IFAS) and the Global Water Partnership of Central Asia and the Caucasus. Professor Dukhovny has actively promoted the interests of Central Asian countries in international institutions such as the International Commission on Irrigation and Drainage (ICID), the World Water Council and the International Water Resources Association (IWRA). Professor Dukhovny's support to INBO activities has been constant and vital in Central Asia, and INBO will faithfully keep the memory of his outstanding contributions over the last decades.

Scientific Information Centre, Central Asian Interstate Coordination Water Commission (SIC ICWC):

Ms Dinara ZIGANSHINA
Director

& Ms Oygul USMANOVA
International Communication Officer



Tools to guide management stakeholders

The collection of "INBO Handbooks" was launched in 2009. Written by the Network members, these documents are intended for decision-makers in the water sector and for those who wish to develop their capacities to implement an integrated water resources management policy at the local, national and transboundary basin level, and to increase the participation of stakeholders and civil society.

Depending on the topic, for a better sharing of knowledge and good practices, the handbooks are composed of in-depth articles accompanied by case studies and field experiences from all continents, in a wide variety of contexts. Maps, key figures and diagrams illustrate each edition. A bibliography and a list of reference websites will also enable you to deepen your approach to each subject.

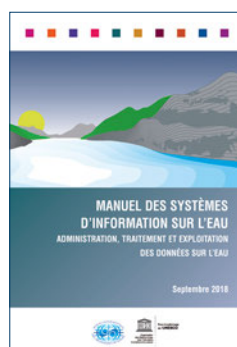
These manuals are available in several languages. To see the complete list of titles and the languages available:

www.riob.org/fr/documents

With 9 titles to date, this collection covers a range of converging topics, to address the issue of water resources management from different angles:



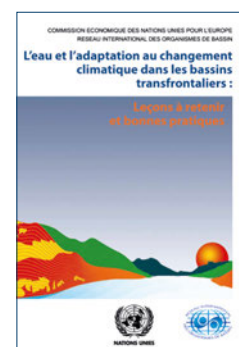
Financing Climate Change Adaptation in Transboundary Basins Preparing Bankable Projects



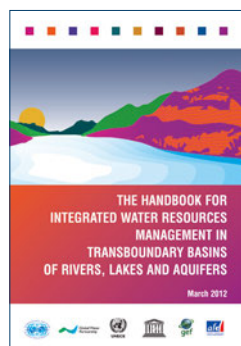
The Handbook on Water Information Systems. Administration, Processing and Exploitation of Water-Related Data



The handbook for the Participation of Stakeholders and the Civil Society in the Basins of Rivers, Lakes and Aquifers



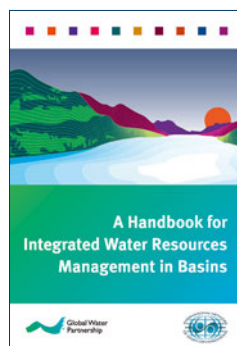
Water and climate change adaptation in transboundary basins: Lessons learned and good practices



The Handbook for management and restoration of aquatic ecosystems in river and lake basins



Handbook for Integrated Water Resources Management in the Basins of Transboundary Rivers, Lakes and Aquifers



Handbook for Integrated Water Resources Management in Basins



Report on experiences of transboundary basin organizations in Africa Good practices and recommendations



Toward a Joint Management of Transboundary Aquifer Systems

2 new handbooks in 2022



CITY-BASIN DIALOGUE



The International Water Association (IWA) and INBO have designed a manual on city-basin dialogue, a decision-making tool to reinforce the connection between cities and their river basins. Through practical case studies, testimonies and recommendations, this guide illustrates how urban stakeholders can and should play an active role in protecting this resource.

The aim of this document is to inform stakeholders and give them food for thought in improving practices, based on some thirty “basin stories” from different contexts, including the issue of megacities.

This guide offers a series of lessons and recommendations in light of the next IWA world congress (September 2022) and the Dakar 2022 World Water Forum or WWF9 (March 2022) based on 4 questions:

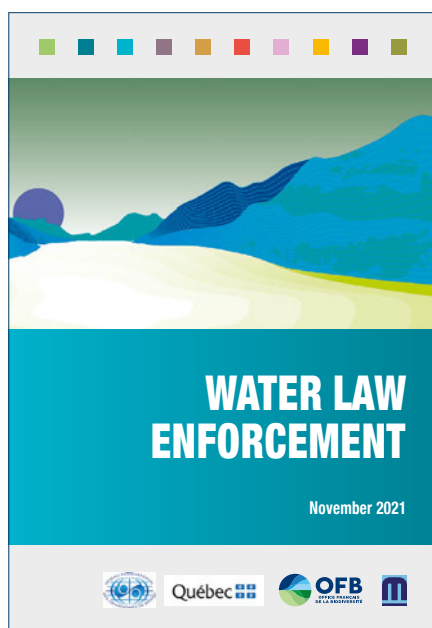
1. Why reconnect urban stakeholders with their basins?
2. How can we improve planning and funding (economic and funding mechanisms, nature-based solutions or NbS, developing payments for environmental services or PES, digitalisation)?
3. What implementation tools exist (risk-based approach, allocation mechanisms for sharing water, urban development, public participation)?
4. How can we evaluate the measures taken (data management, water information systems or WIS, research and expertise)?

“The Handbook on Basin-Connected Cities being developed by the International Water Association and INBO, looks at how cities and their urban stakeholders can take an active role in protecting and investing in water resources, together with basin and catchment organizations. The Handbook expands on the Action Agenda for Basin-Connected Cities with case studies and best practices, recommendations, as well as insights from water experts. The purpose is to inform, influence and encourage urban stakeholders (across administrative boundaries) to engage in collaborative action, allowing for inclusive participation, public policy coherence, efficient water management across administrative boundaries, to attain sustainable water management.”

Ms Katharine CROSS
Senior Advisor, Water-Cities

www.water-cities.org

WATER LAW ENFORCEMENT



The importance of water policing is well known. However, the reality of its efficient implementation is a challenge in most situations.

In order to answer questions being raised by a host of water professionals, INBO has produced a manual on water policing, based on examples collected around the world.

This document provides essential recommendations for each of the ten themes addressed, which are also illustrated by practical situations. The range of subjects addressed covers a series of issues, from regulatory frameworks to training, the empowerment of officials, the authorisation regime, the implementation of checks, administrative and legal consequences or the planning of water policing.

Each example presented features references for contributors to enable interested parties to contact them directly in order to discuss a given subject in more detail.

The manual will be launched at the World Water Forum in Dakar in March 2022. It is initially available in French, English and Spanish.

“As regards basin organisations, which are often in charge of planning investments and good management measures for rivers and lakes or aquifers, they need the decisions taken to be effectively implemented and therefore the rules laid down to be really respected and applied, which is the prerogative of water policing.”

Mr Daniel VALENSUELA
coordinator of the Water law enforcement Handbook, during the webinar of 25 March 2021 on the theme: “Enforcing water sector regulations: the need for and functions of water policing” (see p. 49)



INBO adapts to circumstances: 10 webinars since July 2020

July

September



In their presentation on *"Integrated Water Resources Management: a factor of resilience to global health and economic crises"*, the speakers recalled the 6 pillars of IWRM, as well as *"the need to put an end to sectoral approaches to resource management by use and to adopt an integrated, cross-sectoral management that integrates all the uses and users to allow for a better allocation of the resource"* (Alain Bernard). The various presentations underlined the urgent need to prioritise long-term financing, in favour of projects that serve populations and ecosystems, with particular attention to planning scenarios through which these long-term investments preserve the costs of inaction.

Find the video recording of the webinar and the presentations of the speakers on INBO website:

<https://bit.ly/3xh55bS>

In partnership with: The Sahara and Sahel Observatory



<http://www.oss-online.org/fr>

The *"Governance of Water Information Systems"* conference provided an opportunity to understand the challenges of producing and sharing water data, as well as the indispensable role of information for decision-making by water stakeholders. The Director of the Geneva Water Hub reminded us that *"more than ever, the acquisition, management and modelling of data on water resources and their use is essential for the implementation of water policies, for cooperation, for investments, for security and peace"* (François Munger).

Find the video recording of the webinar and the presentations of the speakers on INBO website:

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



In partnership with: The Geneva Water Hub

<https://www.genevawaterhub.org/fr>



Faced with the health crisis which strongly impacted the agendas of the water stakeholders, INBO was able to remain active and to adapt thanks to the online events, organized with the support of the French Office for Biodiversity and in collaboration with its partners. Thus, during the year 2020, INBO organized 4 webinars which gathered on average 180 participants from more than 65 countries, around several topics. These conferences were an opportunity to share experiences in the implementation of resource management policies at the local, national and transboundary levels, as well as actions, issues, challenges encountered and lessons learned.

October

December



UNECE



"Adaptation to climate change at the river basin level" highlighted the need to invest in order to mitigate the impacts of climate change insofar as *"the gap between the costs of a trend scenario and the costs to be incurred in an optimistic scenario reflects the cost of inaction"* (Alain Bernard). Thus, the panelists agreed on the need to adopt mitigation measures on a global scale and adaptation to climate change on a local level.

Find the video recording of the webinar and the presentations of the speakers on INBO's website:

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

The webinar *"Participation of stakeholders, civil society and young people in river, lake and aquifer basins"* focused on the experiences of Asia, Europe, Africa and South America and emphasized the importance of integrating women and young people into the decision-making processes, but also the fundamental role of political will as an essential element for the implementation of participatory, sustainable governance. On the occasion of this webinar, INBO Secretary General, Eric Tardieu, recalled that it is necessary to consider the Water Agencies as tools for efficient governance, and that it is important to build consultation processes with adapted tools while ensuring that measures and decisions are smooth to achieve the objectives of integrated resource management at the basin level.

Find the video recording of the webinar and the presentations of the speakers on INBO website:

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



In partnership with the International Secretariat for Water

<https://www.sie-see.org/fr/>





January

City-basin dialogue: French and Mexican approaches



“ *The cross-sectoral nature of the different water stakeholders gives us a more immediate impact on the natural environment.* ”

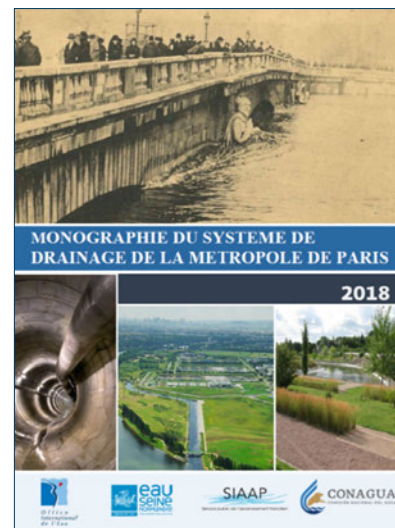
Mr Jean-Didier BERTHAULT
Vice-President, Interdepartmental Syndicate for Sanitation of Greater Paris (SIAAP).

On 28 January, a webinar on the theme “**City-basin dialogue for adapting to climate change: French and Mexican approaches**”, organised by the International Office for Water (OIEau) in partnership with the National Water Commission in Mexico (CONAGUA) brought together over 155 participants from nearly 39 countries, around representatives from the Basin Agency for the Valley of Mexico (OCAVM), the French Ministry for Ecological Transition, Interdepartmental Syndicate for Sanitation of Greater Paris (SIAAP), Mexico City's water utility (SACMEX), the River Basin Commission for Amecameca and La Compañía, and the Seine-Normandie water agency.

This webinar focused on presenting the results of phase 1 of the project to support the governance of sanitation services and adaptation to climate change in the Valley of Mexico basin, initiated jointly by SIAAP and CONAGUA. This project is part of a long process launched as part of the agreement signed in Paris on 2 December 2015, during COP 21 Climate, which aims to reinforce the drainage system for waste- and rainwater in the megacity of Mexico. Evaluations, results and the lessons learned from this project were then presented on 18 February 2021 during a session exclusively for working group I.

During this dialogue between France and Mexico, panellists took turns to present the concrete and common challenges faced by both megacities, namely the drinking water supply for their populations, flood risk management and finally the restoration of ecosystems and nature in the city.

To conclude the session, the General Secretary of INBO issued a reminder of the numerous challenges that stakeholders from the metropolitan area of Mexico and the metropolis of Paris will have to face, particularly the importance of sharing information and water resources, the need to pool financial and technical resources for the participatory management of basins, and finally shared decision-making.





March

Enforcing water sector regulations: the need for and functions of a water police



On 25 March, on the occasion of World Water Day, this webinar, organised with the support of the French Office for Biodiversity (OFB), the Mediterranean Network of Basin Organisations (MENBO), the North American Network of Basin Organisations (NANBO), the Ministry of the Environment and the Fight against Climate Change of Quebec and the Spanish Ministry of Ecological Transition and Demographic Challenge, registered 414 participants from 80 countries, a figure which underlines the interest of the Internet users in INBO seminars.

This webinar was the occasion to exchange on the practices of water policing in various territories: France, China, Romania, Cambodia, Burkina Faso, Spain, Morocco, Brazil, Peru and Quebec. It was also the occasion to announce the next INBO manual on water policing, with international approaches, illustrated with case studies (see p. 45).

Starting from the observation that *"an excellent water law or even an excellent basin master plan remains ineffective when not applied"* the panelists presented in turn their national approaches to water policing.

The **French approach** highlighted the principles laid down by the Environmental Code as well as the specificity of its water policing, which combines prevention and control (administrative and judicial police), focused on the main issues of water resource preservation (quality, quantity, balanced uses), and protection of aquatic biodiversity (species, natural habitats).

In **Cambodia**, given the challenges of preserving resources in the Mekong region, the 2007 Water Law aims to regulate the use of water resources at the national and transboundary levels; the agricultural sector, whose activities exert pressure on water resources, is subject to recommendations from the State and the meteorological agency.

In **China**, faced with the problems of river and lake pollution caused by economic and industrial activity, illegal sand exploitation, mining and illegal fishing, advances in inter-institutional cooperation between the various ministries have led to the establishment of the river chief system.

In **Burkina Faso**, the Water Police is emerging. It is the General Directorate of Water Resources that coordinates the actions undertaken by the State services, responsible for prevention, control and repression in the implementation of water legislation. The most important thing is to find sustainable financing to enable the Water Police to continue their mission on a permanent basis.

In the same perspective, in **Romania**, inspection is characterised by inter-ministerial cooperation, active participation of citizens and the use of technological innovations such as radar for resource vigilance (see p. 37).

The examples of **Quebec** and **Brazil** revealed their bodies of environmental legislation, the different sectors of intervention and, as in the case of Romania, the adoption of modern means of control with drones. In Quebec, the coercive approach developed over the years now makes it possible to be more involved in promoting compliance.

In **Morocco**, the medium-term objectives are to revise the regulations in force, strengthen controls using satellite imagery, and set up an information system dedicated to water policing. For this country, it is urgent to have a body exclusively dedicated to the mission of water policing, and to set up a jurisdiction dedicated to the environment.

The **Spanish** exception has shown how a basin organisation can constitute a body which, well beyond resource management, can intervene thanks to the administrative competences assigned to it.

The **Peruvian** approach introduced the role of the National Water Authority and its administrative distribution before outlining the Water Resources Law n°29338 which regulates the allocation of water rights and controls water uses.

Interactive surveys identified the lack of political will and the weakness of the legal and administrative framework as factors that compromise the implementation of water policing.

For **Mr ÉRIC TARDIEU**, Secretary General, International Network of Basin Organisations (INBO) *"Water policing is an administrative organisation, it is human, administrative, financial and technical means, but above all it is a high-level political commitment"*.





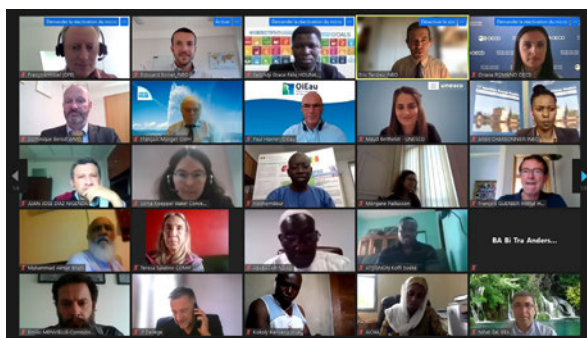
May

June

European River Symposium

Thirteen partners (including INBO, the European Centre for River Restoration -ECRR, IAWD, GWP and the International Commissions for the Protection of the Rhine and the Danube) have joined forces to organise this international online conference on 26 and 27 May 2021. More than 256 participants from 38 countries met to exchange their experiences in the field and their analysis of the latest major European policy documents on water and environmental management. Within this event, INBO organized 4 online sessions on

- the cross achievement of the objectives of the "EU Biodiversity Strategy 2030" and of the Water Framework Directive
- adaptation to climate change,
- the relationship between water and agriculture in the context of the new Common Agricultural Policy, the "Farm to Table" strategy and the "Green Pact for Europe",
- participatory basin management.



How can we strengthen data sharing and pooling?

"We can only manage what we know", but this presupposes being able to share and pool data effectively, even though it is produced by multiple actors who do not work on the same scales, do not speak the same language and do not follow the same protocols.

So how can data sharing and pooling be strengthened?

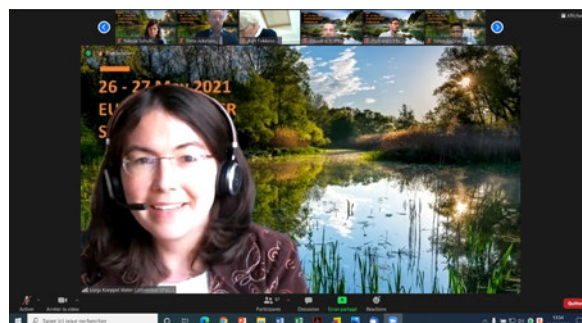
This question was at the heart of the webinar that INBO organized on Thursday 24 June in partnership with the World Meteorological Organization (WMO), the United Nations Economic Commission for Europe (UNECE), the Geneva Water Pole, the Dakar Water Pole and the Organization for Economic Cooperation and Development (OECD).

The event brought together more than 150 participants from 92 countries for an exchange of experiences around several exemplary case studies of improved data sharing and valorisation.

For Mr. Juan José Díaz Nigenda (head of the National Water Information System at Mexico's National Water Commission - CONAGUA), access to data from the field (especially in the agricultural sector) is a determining factor in the efficiency and success of water management planning at the basin level.

However, access to this data requires the structuring of data and the creation of protocols for data exchange and interoperability. In France, the implementation of national schemes for the exchange of data on water, biodiversity and the marine environment is thus essential for the exchange of data between stakeholders, according to Mr François Hissel (Director of monitoring, assessment and data at the French Office for Biodiversity).

To go further: the "Water Information Systems Handbook" published by INBO in collaboration with UNESCO, WMO and the World Water Data Initiative (WWDI) in 2018 proposes principles and working methods to strengthen data sharing and enhancement.





July

Vocational training, essential to meet the many challenges of the water sector

On 6 July 2021, INBO devoted a webinar to "Capacity building: vocational training for better water management". With the participation of an audience of more than 135 people from 45 countries, this webinar allowed, thanks to the intervention of great witnesses, the presentation of experiences in capacity building for water resources management in various parts of the world and for various uses (domestic, agricultural and industrial), and to recall the importance of financing continuing professional training

The International Office for Water (OiEau) intervened to present the evolution of training needs in the international water sector, through the results of a study carried out in 2018 by OiEau on behalf of the French Development Agency (AFD). This work aimed to provide an overall view of the training needs of the drinking water and sanitation sector in AFD's intervention countries and to constitute an operational toolbox for the identification of professional training projects.

The focus was on the training needs impacted by a complex water and sanitation sector, as it is cross-cutting and diffuse (multi-actors, multi-missions, more than a hundred professions, wide variety of associated skills, etc.).

In addition, the sector must respond to significant challenges and issues: human resources, climate change, urban growth, health, etc., in addition to more traditional and historical needs (maintenance, etc.). The need for trained personnel and skills to meet these challenges is therefore very high.

Initial professional training (to meet the recruitment/renewal challenges) and continuous training (to upgrade personnel) is a possible and necessary response to these needs.

OiEau also insisted on the fact that vocational training is a productive investment and offers returns on investment. However, it must be adapted to local contexts and needs and be graduated and sustainable. This sustainability depends, among other things, on the financing methods as well as the status and governance methods of the training systems.

OiEau and vocational training:

www.OiEau.fr/cnfme/

The French example

The French Water Sector (FFE), which brings together the main players in the water sector, represents 124,000 "Full Time Equivalents" (FTEs) in France, spread over more than a hundred professions.

This study reveals the strong tensions on the trades and training needs (13,000 FTEs to be recruited over the period 2020-2025, including the retirement of more than 7,000 FTEs) and proposes solutions to these challenges and for the professionalisation of the players in the sector.

Indeed, beyond the variations in employment in the sector, it is necessary to take into account a broadening of the skills required to ensure the same level of service to the population, with constrained financial means (e.g. rainwater issues, which require the addition of skills in land use planning, soil management, aquatic environments, new pollutants, etc.).

The study underlines the robustness of the French system of continuous professional training, particularly in the field of technical skills (production and distribution of drinking water, collection and treatment of wastewater, leak detection, stormwater management, engineering of water infrastructures, etc.). This will make it possible to absorb future variations in the volume of the sector's needs and the expansion of new issues that cannot be dealt with through internal training.

However, the geographical distribution of this external continuing professional training offer requires an acceleration of on-site training methods (e.g. distance learning, travel for trainers, hybrid methods), wherever possible, in order to absorb the volume of demand for 2020-2025.

The complete results of this study can be found on the FFE website: Professional training, essential to meet the many challenges of the water sector

www.lafilierefrancaisedeleau.fr/emplois-formations



Perspectives and challenges

Dakar 2022: a Forum of solutions

On 14 and 15 October 2021 in Dakar, the second Stakeholder's Meeting took place, the last major preparatory meeting for the World Water Forum 2022 in Dakar (WWF). The purpose of this meeting was to mobilise political and thematic stakeholders, to create a bridge between the thematic content of the Forum and the political process, to promote political debates on the central and cross-cutting themes that will be addressed during the WWF, and to coordinate the work accomplished over the last few months by the thematic working groups with the four main political segments (ministerial, parliamentary, local and regional authorities and basin organisations).

This was an opportunity for Mr. Abdoulaye Sene, Co-Chairman of the WWF 2022 International Steering Committee, to thank first of all the men and women who worked hard, despite the difficult context, in the consultative phase in Dakar but also through the collaborative platform set up, to contribute to the elaboration of the final programme of the Forum. This active participation at all levels made it possible for the 9th WWF to take place from 21 to 26 March 2022.

With 400 face-to-face participants and 379 virtual participants from 42 countries from all continents, this 2nd Stakeholder's Meeting was a success, and a sign that the WWF will be even more inclusive and massive in terms of participation. This is a dynamic that must be encouraged so that in the coming weeks, the work of promotion and mobilisation of stakeholders will continue and accelerate, in order to achieve a WWF with tangible responses, an effective WWF that lives up to the expectations of the whole world.

All these actors are aware that it is now time for action, that it is time to accelerate action, for a historic and successful Forum.

Mr Sene called for a positive spirit of proactive co-construction so that *"in this difficult fight for access to water, this common good which must be a source of peace and development, which must also be perceived as a human right, effective everywhere, this Forum can make a significant contribution. Together, we can give a decisive boost to universal access to water and sanitation."*

This dynamic will be reinforced and consolidated by the World Water Council and by Senegal, led by the President of the Republic, Mr. Macky Sall, who has taken all the necessary steps to ensure that the strong political dimension of the WWF is guaranteed, that the logistical conditions are ensured, but above all that inclusiveness is also guaranteed at all levels.



"By the basins and for the basins": for the first time, a dedicated session during the Forum

Basin organisations are peacemakers and accelerators of sustainable development. National or transboundary, they are by construction multi-stakeholder platforms, places for dialogue, between countries on a transboundary scale, between users and water stakeholders on a sub-national scale. It is important to develop these two scales of sharing and solidarity.

Cooperation at basin level has indeed proved its worth and brings concrete benefits:

1. On a transboundary scale

- It provides more means through the pooling of financial and technical resources,
- It optimises the benefits derived from major works thanks to their location. Experiences of joint structures in several countries exist: their successes (sharing of benefits; peace...) and difficulties must be shared more widely.

2. In national multi-stakeholder mode, it translates operationally an integrated approach in line with the SDGs:

- More accurate diagnosis of water resources
- Better appropriation of the measures decided
- Optimal results of coordinated sectoral policies)

A reinforced complementarity is necessary between transboundary IWRM and national IWRM: the Transboundary Basin Organisations (TBOs) constitute a transboundary management framework. But they must be able to count on a national (then local) declination so that the measures can be implemented on the various territories.

And vice versa: national IWRM needs to be consolidated at the cross-border level, under the coordination of an operational and recognised TBO.

In this way, accelerating the achievement of SDGs 6.5.1 and 6.5.2 is possible, by and for basin organisations. This is the motivation of this dedicated segment, which will conclude with the adoption of the Dakar Action Plan for basins, which will declare the political declaration of the Forum, and will feed the New York water conference of September 2023.

Perspectives and challenges

North America - Signature of a MoU with the Mississippi River Cities & Towns Initiative



On Friday, 5th November 2021, during COP26, took place the signing ceremony of the Memorandum of Understanding (MoU) between the Mississippi River Cities & Towns Initiative (MRCTI) and the International Network of Basin Organizations (INBO).

It aims to multiply and sustain actions between MRCTI and INBO, and to engage them in joint climate change adaptation projects, in particular through the mobilization of nature-based solutions, and through a better dialogue between cities and their basin.

There are 124 Mississippi River main stem cities and towns. Since 2012, Mississippi River Cities and Towns Initiative has been promoting economic and environmental security and stability along the Mississippi River Corridor. MRCTI gives a common voice to those who depend most upon the River, and by virtue of doing so, spans political and economic interests.

The MRCTI builds the capacity of member mayors, empowering them with the tools and support to undertake effective local initiatives which attract green jobs, move towards sustainable economies and achieve local environmental protection goals.

Ultimately, MRCTI's work helps protect and restore the Mississippi River as a natural system that can support human culture and economies, as well as the River's unique ecosystem and wildlife.

The Mississippi River Cities and Towns Initiative (MRCTI) addresses matters of concern, including:

- River water quality and habitat restoration,
- State coordination around River management and improvement,
- More impactful water conservation measures,
- Sustainable economies,
- Celebration of the River culture and history

"We are excited about the opportunities of this partnership with INBO because of the great work we are already doing together. As the mayor of a Louisiana city, we know how important climate change education is to our community." says **Ms Belinda CONSTANT**, Mayor of Gretna.

"It's a joy to enter into this Memorandum of Understanding with INBO. We want to build capacity and processes for implementing integrated river basin management, to address the impacts of climate change that threaten critical river ecosystem services, such as the provision of fresh water and other necessities. [...] We need to address climate change in a comprehensive way, and this partnership between MRCTI and INBO is a great start!" explains **Mr Errick D. SIMMONS**, Mayor of Greenville.

"Water is the first victim of climate change and we need to adapt our practices if we want to have water in sufficient quantity and quality, especially for food production. INBO has been working on the development of integrated approaches around the world since its creation in 1994, and we are delighted to be working with MRCTI to develop new solutions, including nature-based solutions, and to consolidate the necessary dialogue between cities and their basins." told us **Mr Eric TARDIEU**, Permanent Secretary of INBO.

Perspectives and challenges

Contribution of Earth monitoring satellites for a better quantitative and qualitative management of water resources

Water is a major issue for the 21st century, at the heart of the UN's Sustainable Development Goals. Taking appropriate decisions, knowing how to anticipate and adapt requires countries to have the means for systematic measurements adapted to the scale of watersheds (transboundary or not). The networks of in-situ stations, although indispensable, are often not sufficient to ensure good quantitative and qualitative management of water resources. Indeed, difficulties of access to the field, the non-sharing of data between countries (or problems of non-interoperability) and/or the lack of financial and human means to install, maintain and service the networks are real problems.

In this context, satellite Earth observation offers a particularly interesting solution, as a complement to in situ networks. Providing a synoptic and global vision, these spatial data are interoperable, standardised and often free of charge, thanks in particular to the advent of the European Union's Copernicus satellites. Monitoring of water surfaces, water levels in lakes and rivers, land use, precipitation, soil moisture or water quality, the entire water cycle can be addressed from space, at different spatial and temporal resolutions. The potential is enormous and the related services and applications are still underdeveloped.

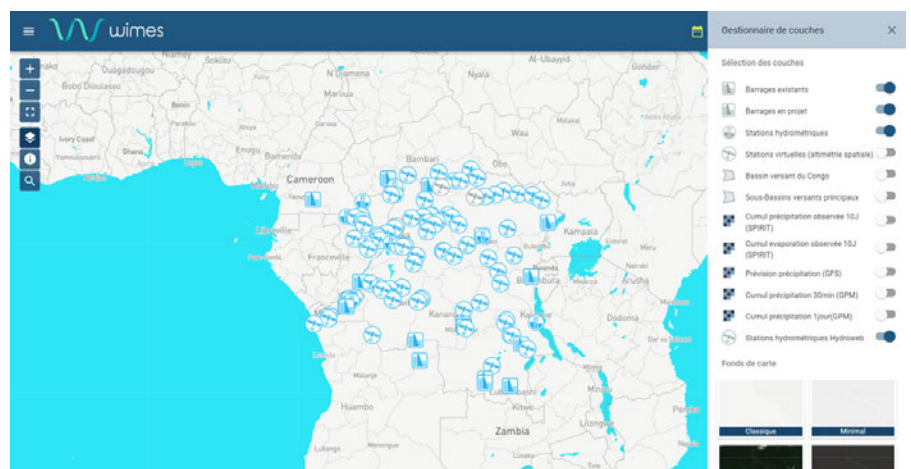
To remedy this, a working group on space hydrology, led by OIEau, was created in 2014 with the CNES (Centre National des Etudes Spatiales), AFD, research laboratories (INRAE, IRD) and private companies (BRLi, CNR, CLS). The first demonstration site for the contribution of space technology concerned the quantitative monitoring of the Congo basin (height, flow), in collaboration with CICOS, to improve navigation forecasts and estimate the hydroelectric potential of the river and its tributaries.

Based on this success, similar initiatives are starting in the Senegal and Niger basins (flood forecasting). Other projects on monitoring dam volume variations or water quality by satellite are also attracting growing interest from countries and basin organisations.



Monitoring water levels by space altimetry. The HYDROWEB site provides nearly 12,000 measurement points in near-real time.

<http://hydroweb.theia-land.fr/>



Improving the state of the Congo Basin by integrating in-situ and spatial data into a single water information system. More information here:

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

[plaquette-du-groupe-de-travail-sur-lhydrologie-spatiale-programme-swot](#)

“ Spatial hydrology aims to produce distributed information throughout a hydrological basin on the quantity and/or quality of river water, based on satellite missions. It is currently used to help manage large basins in Africa, such as the Niger and the Congo, in partnership with the Basin Agencies, or on the Guyana Plateau. ”

Mr Stéphane CALMANT

Representative Head of the IRD Antenna in French Guiana

Perspectives and challenges

WMO - A series of initiatives for basin management

At its Congress in October 2021, the World Meteorological Organization (WMO) took historic decisions:

- A Unified Data Policy, for sharing data across all WMO's areas of work. This ensures a comprehensive update of policies defining the framework for the international exchange of weather, climate and related Earth system data among WMO's 193 Member States and territories. With this new policy, WMO reiterates its commitment to the free and unrestricted exchange of data, which has been at the core of its activities since its foundation more than 70 years ago.
- The creation of a Global Basic Observing Network (GBON), with a priority focus on numerical weather prediction. The GBON envisaged a new approach to designing, defining and monitoring the fundamental system of surface observations on a global scale that would provide the data needed for numerical weather prediction models. Once established, this network will greatly facilitate access to the most essential surface data. The availability of data will directly translate into improved weather forecasts and information, and subsequently into improved safety and well-being for the world's population.
- A new Systematic Observations Financing Facility (SOFF), to ensure that the network is set up. The SOFF is intended to provide long-term grants and technical assistance to countries, with a focus on small island developing states and least developed countries, to enable them to comply with the GBON regulations.

All this is global for all WMO domains, with a priority on meteorology, but the setting up of these systems is also a clear signal for hydrology and the oceans.

At the same Congress, two important decisions concerning hydrology were also taken:

- An Action Plan, with more than a hundred measures in the field of flood management, droughts, observation systems, modelling etc.... This will make it possible to synthesise and make more effective all the tasks that are underway;
- the creation of a Water & Climate Coalition, to accelerate the achievement of the Sustainable Development Goals, in particular SDG 6 on water. The WMO is leading this coalition because it recognises that the lack of information on current and future water resources, as well as on food and energy demand, is a major obstacle to effective and sustainable solutions. Decision-makers face the same dilemma when it comes to flood and drought risks.

All this will be reflected in actions in WMO territories, and through these regions, with the major basins. Among the projects launched on water information systems and water monitoring, one of our priorities is to work around Lake Chad, with partners such as the GWP (Global Water Partnership) and the Lake Chad Commission, to set up a system that is coherent, sustainable and that really meets the expectations of the populations, to help manage the lake and its basin.

This project is currently being submitted to the Climate Change Adaptation Fund (CCAF), and we hope to receive a response in 2022, so that we can launch this project as soon as possible.

Mr Dominique BEROD

Head of the Earth System Monitoring Division
World Meteorological Organization (WMO)

"No water security without ecological security / No ecological security without water security"

OiEau joined the World Water Council, INBO and The Nature Conservancy, to launch a call for signatures on this Declaration at the IUCN World Conservation Congress in Marseille for better integration of ecosystems and biodiversity into water sector activities.

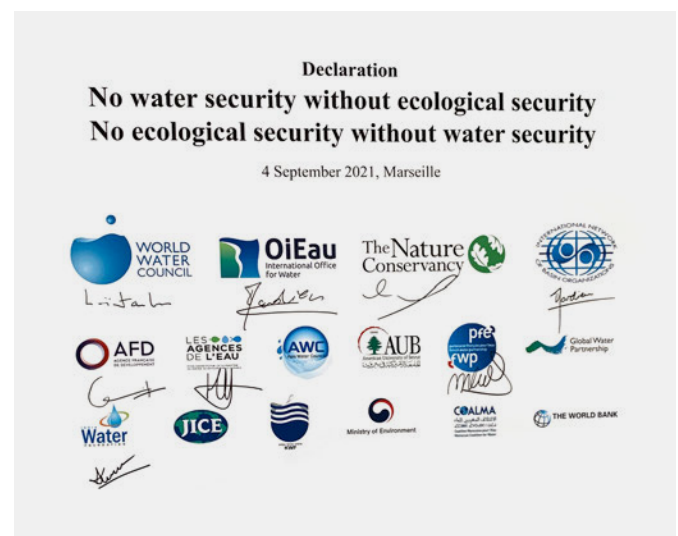
The Declaration calls for an enhanced dialogue between the water and nature communities.

By signing the declaration, the organisations commit themselves to work towards "better integration of ecosystems and biodiversity into water sector activities". They will work to develop and promote integrated projects and appropriate public policies at global, national, local and river and lake basin levels.

In a second phase, the declaration will be accompanied by several dozen field actions, which will be presented at the 9th World Water Forum in Dakar.

To consult the Declaration:

<https://www.oieau.fr/actualites/oieau/pas-de-securite-hydrique-sans-securite-ecologique-pas-de-securite-ecologique-sans>



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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