INTERNATIONAL NETWORK OF BASIN ORGANIZATIONS

# Newsletter INBO

www.riob.org

November 2020 - n°28

Dear readers,

As you will see, in this new issue of INBO Newsletter, we propose you a slightly modified layout, with new headings for each thematic entry rather than by continent.

Our goal? To further enhance the variety and richness of the actions and analyses carried out by our members and partners, around a common theme that cements our Network, the integrated water resource management at basin level.

We hope that this new presentation will convince you. Enjoy reading it!

**The Editorial Committee**

# SUMMARY

# Edito

This new issue of INBO Newsletter is obviously rather special, not only because of its revamped format.

It was prepared at a time of unprecedented upheaval for our countries and basins – the health crisis, then the economic and social crisis caused by COVID-19 have had a direct impact on basin organisations. At least two levels have been affected – first of all everyday operations have been disrupted due to the closure of numerous borders, travel restrictions, the introduction of remote working and the general use of virtual meetings. Moreover, in the long term, the crisis calls into question basin organisations' priorities and means of action – how can public health issues be better integrated, how can the need to comply with investment planning be highlighted? How can we constantly reinforce dialogue and cooperation that is such a key factor in fair and efficient sharing of water resources?

Under these extraordinary circumstances, INBO adapts its action – with great continuity and thanks to the mobilisation of the Permanent Technical Secretariat teams, links have been maintained, exchanges pursued and projects completed. Our network has affirmed its solidity and solidarity.

At a very successful General Assembly in Marrakesh in November 2019, the Kingdom of Morocco became Chair of INBO for the period 2019–2021. Read the message from Dr AMARA, the new World President, on pages 10 and 11.

In mid-September, 360 participants from 76 countries registered for INBO's first trilingual webinar on the benefits of Water Information Systems. What a fantastic testimony to our network's energy, adaptability, innovativeness and willingness to play an active role in better water resources management, which is so essential in the period we are going through!

**Eric Tardieu, Ph. D.,**
*General Secretary*

# 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.

# 11th INBO World General Assembly

## Sept. 30th 2019 - Oct. 3rd 2019 - Marrakech (MOROCCO)

**The 11th edition of INBO's World General Assembly (WGA) was held jointly with the " Marrakech International Summit on Water Security ", in Morocco, in the presence of the Ministers in charge of water management of Armenia, Burkina Faso, Finland, Ghana, Guinea, Greece, Kenya, Malta, Palestine and Romania, around a central topic: participatory and innovative basin management.**

For 4 days, speakers with various profiles (Ministers, heads of Water Agencies and River Basin Organisations, representatives of UN specialised agencies: UNECE, UNESCO...) have led plenary sessions, round tables and workshops on the following themes:

- Integrated water and energy management for food security and rural development
- The challenges of adapting water to climate change in river basins
- Knowledge, innovation and information sharing in the water sector
- Hydro-diplomacy, international and transboundary cooperation for water security
- Funding of water security"
- Innovative solutions transfert
- The priority Cooperation for the 9th World Water Forum

### THE INBO WORLD GENERAL ASSEMBLY IN A FEW FIGURES

**400** PARTICIPANTS

Coming from **62** COUNTRIES

**70** BASIN ORGANISATIONS REPRESENTED

**10** **MINISTERS IN CHARGE OF WATER PRESENT:** BURKINA FASO, FINLAND, GHANA, GUINEA, GREECE, KENYA, MALTA, MOROCCO, PALESTINE AND ROMANIA

**1** OPENING SPEECH DELIVERED BY THE HEAD OF GOVERNMENT OF THE KINGDOM OF MOROCCO

**1** **CENTRAL THEME:** PARTICIPATORY AND INNOVATIVE MANAGEMENT AT BASIN LEVEL

**5** PLENARY SESSIONS

**1** FINAL DECLARATION


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**Opening ceremony:** speeches by Mr. El Otmani, Head of Government of the Kingdom of Morocco, Dr Amara, Minister of Equipment, Transport, Logistics and Water, Kingdom of Morocco, Mr. Unver, UN-Water Vice-President, Mr. Fauchon, President of the World Water Council, Mr. Barrios Ordoñez representative of INBO World Presidency (2016-2019).


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**Handover ceremony of INBO World Presidency from Mexico to Morocco** between Dr. Barrios Ordoñez (2016-2019) & Dr. Amara (2019-2022).


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**Closing ceremony:** Mr. Tardieu, INBO GS, gave the floor in turn to Mr. Barrios Ordoñez, Mr. Sene, Co-Chairman of the International Preparatory Committee of the 9th World Water Forum in Dakar in 2021, Mr. Benjelloun, INBO World Presidency (2019-2022).

# 11th INBO World General Assembly

## Sept. 30th 2019 - Oct. 3rd 2019 - Marrakech (MOROCCO)

### Marrakech Declaration

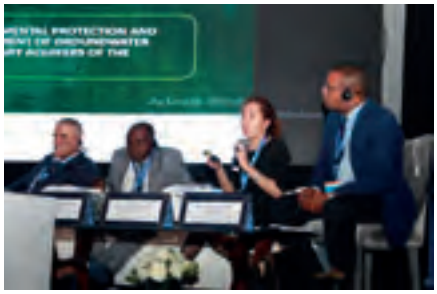
As during each WGA, INBO Member-Organizations and Permanent Observers agreed to issue a Final Declaration.

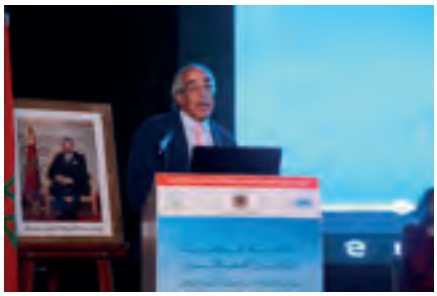
Together, in Marrakech, they reaffirmed the 4 following points:

- The basin is the adequate scale for an efficient interface between the political and technical levels.
- Adaptation to climate and global changes requires an institutional reform, the building of infrastructures and a dimensioned financial support.
- Water diplomacy, in particular led by the Basin Organisations, must be strengthened as it is a carrier of water security, the cornerstone of sustainable development.
- Knowledge on water and all the tools related to it must be extended in order to enable the development and better sharing of skills, from the local to the global scale.

*To access all the working documents and the Final Declaration, see or review all the pictures of the WGA, go to INBO's website:*

**www.riob.org**





# 11th INBO World General Assembly

## INBO 25 years!

*"Following the Hungarian initiative taken in 2018 during the EURO-INBO Conference in Seville, the Secretariat invited INBO former Presidents to participate in the 25 years meeting. Thus, four INBO Presidents, active over the period 1996-2010 were present in Marrakech: Mr. Raymundo Jose Garrido (third President - Brazil), Mr. Pierre Baril (fifth President - Canada), Mrs. Madeleine Jouye de Grandmaison (sixth President - Martinique) and Mr. László Kóthay from Hungary (seventh President - Hungary). We had a thought for the other Presidents, who were absent: Mr. Eduardo Mestre, (first President - Mexico), Mr. Aragones Beltran (second President - Spain), Mr. Tomasz Walczykiewicz (fourth President - Poland), and Mr. Mohamed Salem Ould Merzoug (eighth President - Mauritania).*

*During INBO start-up period, France, Spain, Romania, Poland, Brazil and Mexico were the most active countries. Then, INBO regional networks were created little by little: the Latin American Network of Basin Organizations (LANBO) was created in 1998; in 2002, the African and Central European networks (ANBO and CEENBO) were created; 2003 was the year of creation of EUROPE-INBO and MENBO (Mediterranean Network of Basin Organizations) Finally, I would like to deal with the Hungarian participation in INBO. Hungary was already represented at the constitutive meeting in Aix les Bains/Chambéry in 1994. Two years later, Mr. Miklós Varga, Director General of the National Water Authority (OVF) signed the accession document in Morelia. INBO membership provided a solid basis for the principles to be used also in transboundary water management cooperation. And for Hungary, cross-border cooperation is extremely important, with the Carpathian basin, which includes seven riparian countries. Hungary has also contributed to the creation of EUROPE-INBO. INBO has also provided good opportunities for bilateral contacts with our French, Spanish, Czech, Romanian and Polish partners. The network newsletter enabled us to make known the principles of water management in Hungary. A special edition of the Network Newsletter was also devoted to the results of the Hungarian Presidency 2007-2009. After 2011, the official Hungarian participation ceased, but INBO cooperation was very useful for the Hungarian water sector, mainly during the period 1994-2011. »*

**Kálmán PAPP**
*Former International Director of the Directorate General for Water - OVF (Hungary)*

*To read Kalman Papp's full testimony on INBO's 25 years, go to INBO's website:*
**www.riob.org**

**This 11th edition of the WGA was the opportunity to celebrate INBO's 25th anniversary in a warm and friendly atmosphere. It was an opportunity to share an hopeful finding with real prospects: How much progress has already been made together!**

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# 11th INBO World General Assembly

## Sept. 30th 2019 - Oct. 3rd 2019 - Marrakech (MOROCCO)

### A wide media coverage

**LE SOMMET INTERNATIONAL SUR LA SÉCURITÉ HYDRIQUE, DU 1ER AU 3 OCTOBRE À MARRAKECH**
Atlasinfo, 27 Septembre 2019

**مراكش تحتضن القمة الدولية للأمن المائي**
KECH24, 27 Septembre 2019

**مراكش تحتضن القمة الدولية للأمن المائي**
Mamlaka Press, 27 Septembre 2019

**SÉCURITÉ HYDRIQUE : LA SITUATION EST ALARMANTE**
Les Éco, 27 Septembre 2019

**تحتضن القمة الدولية للأمن المائي**
Marrakech Alaan, 28 Septembre 2019

**LA SÉCURITÉ HYDRIQUE SE JOUE À MARRAKECH**
Le 360, 29 Septembre 2019

**LE MAROC ACCUEILLE LE SOMMET INTERNATIONAL SUR LA SÉCURITÉ HYDRIQUE DU 1ER AU 3 OCTOBRE 2019**
2M Maroc, 29 Septembre 2019

**STRESS HYDRIQUE: UNE MESSE INTERNATIONALE À MARRAKECH**
Perspectives Med, 30 Septembre 2019

**M. EL OTMANI MET EN AVANT L'EXPÉRIENCE DU MAROC EN MATIÈRE DE GESTION ET DE PRÉSERVATION DE L'EAU**
Map Ecology, 1er Octobre 2019

**MENACE HYDRIQUE : LE MAROC DANS LE CLUB DES PAYS À RISQUE ''ÉLEVÉ''**
La Nouvelle Tribune, 1er Octobre 2019

**GESTION INTÉGRÉE DES RESSOURCES EN EAU : LE MAROC ET LA FINLANDE SIGNENT UN MÉMORANDUM D'ENTENTE**
2M Maroc, 2 Octobre 2019

**تحضيرا للمنتدى العالمي للماء 2021**
Bayan Alyaoum, 2 Octobre 2019

**COUP D'ENVOI DU SOMMET INTERNATIONAL À MARRAKECH**
LE MATiN, 30 Septembre 2019

**SÉCURITÉ HYDRIQUE : LE MAROC ACCUEILLE UN SOMMET INTERNATIONAL**
Aujourd'hui le MaroC, 30 Septembre 2019

**LA SÉCURITÉ HYDRIQUE : LE COUP D'ENVOI DU SOMMET INTERNATIONAL DE MARRAKECH**
2M Maroc, 1er Octobre 2019

**LE MAROC PORTÉ À LA PRÉSIDENCE DU RÉSEAU INTERNATIONAL DES ORGANISMES DE BASSIN**
Atlasinfo, 1er Octobre 2019

# 11th INBO World General Assembly

## Sept. 30th 2019 - Oct. 3rd 2019 - Marrakech (MOROCCO)

### INBO Work Program 2019-2021

During a Statutory Session of this World General Assembly, the Member-Organisations adopted an ambitious 3-year action plan, built around the promotion of basin management based on structured organisations with adequate governance, skills, knowledge and financing mechanisms necessary for Integrated Water Resources Management (IWRM).


### The WGA, a stage on the road to the 9th World Water Forum (Dakar - 2022)

During the closing ceremony, Mr. SENE, President of the International Preparatory Committee of the 9th World Water Forum (WWF) expressed satisfaction for the quality of the exchanges and the fruit of INBO WGA's work.

According to him, it constitutes an important step in the preparation process of this great event this great event initially planned in Dakar in 2021, and postponed due to the pandemic to 2022.

*"INBO/Water and OMVS will organize round tables on cooperation and users' involvement in IWRM during the WEF. INBO is therefore involved in several ways in the preparation of the Forum. It is also a key player in supporting OMVS, which has already signed a strategic partnership with Senegal. We retained the principles that OMVS should be technically and scientifically supported by INBO/Water, to assume the responsibilities and missions expected within the framework of this strategic partnership. INBO/Water is for us a major actor in the organization of this Forum, because of its expertise and commitment".*

# INBO's new presidency

## Challenges and prospects in the Moroccan water sector

Morocco has an arid to semi-arid climate regime in most regions, with quite limited water resources and a high variability in time and space. According to the latest assessments, the country's potential natural water resources are estimated to be about 22 billion m3 per year, i.e. about 620 m3 per inhabitant per year.

To address these natural constraints and ensure the country's water security, several decades ago Morocco adopted a policy to manage water resources through the integrated, proactive and decentralised management and planning of these resources. This policy was regulated and institutionalised in the Water Act of 1995 and consolidated by the new Water Act (36-15) which introduced new provisions aimed at:

- reinforcing the water planning process by extending the planning horizon from 20 years to 30 years, and enabling Water Basin Agencies (ABHs) to implement their Master Plans on Integrated Water Resources Development (PDAIREs) at local level via Local Water Management Plans;
- reinforcing the regulatory and institutional consultation framework to ensure greater involvement of the different stakeholders, water users and communities in planning and water management at basin level, by creating River Basin Councils (CBH) and by concluding participatory management agreements for water and the Public Water Domain (DPH);
- reinforcing and regulating the management of water related hazards, sanitation, the protection of aquatic environments and the development of unconventional water resources, particularly the reuse of wastewater, the desalination of seawater and the recovery of rainwater.

This policy was implemented through a certain number of ambitious programmes, for example:

- The national programme for major dams launched 1966;
- The programme for the collective supply of drinking water to rural communities (PAGER) launched in 1995 to ensure general access to drinking water in rural areas;
- The National Programme for irrigation water efficiency (PNEEI) launched in 2002;
- The national plan for sanitation and wastewater treatment (PNA) launched in 2006 to make up for delays in this field;
- The shared national plan for sanitation, wastewater treatment and reuse (PNAM), adopted in 2019 to optimise the efforts of the different operators involved in sanitation and the reuse of treated wastewater.

# INBO's new presidency

Thanks to these programmes, clear progress has been made to ensure universal access to drinking water and the development of irrigation and sanitation.

However, the severe droughts experienced in recent years, combined with an increase in the use of available water resources have underscored the vulnerability of a certain number of water supply systems.

To remedy this situation, a national programme on drinking water supplies and irrigation 2020-2027 has been prepared and presented to HIS MAJESTY KING MOHAMMED VI on 13 January 2020. This programme, costing 115,4 billion dirhams (12,44 billion dollars), defines initiatives to diversify water supply sources, interconnect hydraulic systems and ensure water efficiency. It is based on the five following objectives:

- **developing water supplies;**
- **managing demand and recycling water;**
- **reinforcing the supply of drinking water in rural areas**
- **reusing treated wastewater;**
- **communication and awareness raising.**

The launching of this programme and implementation of the other above-mentioned programmes are now progressing in a satisfactory manner despite constraints related to the health crisis effecting all countries worldwide this year.

Indeed, ongoing construction work is being pursued, particularly the construction of 15 large dams, the development of facilities for drinking water supplies (AEP) and the installation of the Greater Agadir seawater desalination plant in the South of Morocco ensuring both the security of drinking water supplies and irrigation. New projects have also been launched, including two hydraulic system interconnection projects and the construction of five large dams.

Other projects are being studied, like the seawater desalination plant to safeguard the supply of drinking water to Greater Casablanca.

Regarding future prospects, and to ensure the country's supply of sustainable water in the long term, a National Water Plan (PNE) 2020-2050 was prepared and presented to the inter-ministerial water commission on 25 December 2019. This project, which will serve as the framework for national water policy over the next 30 years, sets out three strategic orientations:

- **Continue to reinforce the development of water supplies** by building dams and interconnecting different hydraulic systems, developing unconventional water supplies, particularly the desalination of seawater and reuse of treated wastewater;
- **Manage water demand** in order to save water and make better use of mobilised water resources;
- **Protect water resources and ecosystems and improve the management of extreme weather events.**

At the same time, the Ministry of Infrastructures, Transport, Logistics and Water, in coordination with the players concerned, started to update the Master Plans on Integrated Water Resources Development (PDAIRE) based on the orientations of the National Water Plan (PNE) and started the process of establishing River Basin Councils (CBH) at 10 of the Kingdom's water basins.

Thus, Morocco has managed to overcome periods of drought thanks to this proactive and ambitious policy which will continue to be renewed and revitalised to deal with the irregular and vulnerable water context and with climate change.

**Dr .Abdelkader AMARA**
*Minister for Infrastructures, Transport, Logistics and Water - Kingdom of Morocco*

# INBO in the major world water events

**Kick Off meeting of the 9th World Water Forum**
June 20-21, 2019
Diamniado (Sénégal)

**KIWW 2019**
Korea International Water Week
September 04-07, 2019
Daegu (Korea)

**UNECE global workshop**
Global workshop on exchange of data and information in transboundary basins
December 4-5, 2019
Genève (Switzerland)

**COP 25**
December 2-14, 2019
Madrid (Spain)


**Unesco-SHF Symposium**
Droughts, low water levels and water deficits
December 11-13, 2019
Paris (France)

© World Water Council

**Cairo Water Week**
October 20-24, 2019
Cairo (Egypt)

# A look at network's activities

## Steering committee meeting on the ANBO-UNDP/GEF project: redefining ANBO priorities

In the context of the COVID-19 pandemic, the first virtual meeting in ANBO's history, held on 26–27 August 2020, allowed participants to discuss the mid-term evaluation of the project and its achievements (revitalising the network, creating a website, taking part in different international meetings, launching the knowledge sharing and management platform in partnership with UNESCO et OiEau, etc.).

The ANBO's permanent Technical Secretary, Mr Semega, stressed the advantages of this "programme approach" and the mobilisation of financial resources on a project portfolio. He asked ANBO members to rally round to ensure the success of the Dakar World Water Forum that will serve as a "showcase to highlight" the network's skills.

ANBO's Chairwoman insisted on the need to "maintain a synergy" between members of the ANBO and an "overall commitment" to further the network's activities. This will allow greater involvement on the part of the whole network which faces the same problems in terms of governance and the same difficulties in terms of mobilising resources.

All the members of the steering committee approved the request for a 12-month extension of the project (up until December 2021), the recommendations that came out of the mid-term evaluation and the work programme for the coming year, including the proposal for a 2020-2024 Action Plan (second phase of 2015-2024 strategy).

**Pape NDIOUGA NDIAYE**
*Communication Expert, Anbo-Undp/Gef Project*

## 7th General Assembly of the African Network of Basin Organisations (ANBO), 2–5 July 2019, Tunis, Tunisia

Participants of ANBO GA, 1-5 July 2019, Tunis

Seventy people from 25 countries took part in this event organised by the Secretariat of the ANBO with technical support from the SSO and funding from the UNDP and GEF. Participants were introduced to the current project aimed at strengthening the ANBO and to initiatives taken by partners in the network.

The INBO was represented by Mr Éric Tardieu, its General Secretary, who asked participants to make the most of the work programme implemented by the network and its partners (including, the UNECE, OECD and IWA) particularly regarding data and information management, the incubation of water and climate projects and partnerships between towns and their basins.

Three technical sessions covered groundwater management, adaptation to climate change and basin organisation funding. The INBO facilitated this second session and presented the AfriAlliance project aimed at sharing relevant innovations to boost the adaptability of the continent. Moreover, it served as a panellist in the third session, presenting sustainable funding mechanisms for transboundary basin organisations.

Working group discussions led to progress on the review of network statutes, the ANBO action plan roadmap for 2020-2024 and its Secretariat's funding options, provided by OMVS.

During the General Assembly statutory session, participants voted unanimously to renew the mandate of the following organisations within the ANBO: the CICOS (with its General Secretary Ms Judith Enaw as Chairwoman) the NBI (with Mr Seifeldin Hamad Abdalla, its Executive Director as Vice-Chairman) and the OMVS (in charge of the Secretariat, represented by Mr Hamed Diane Semega, its High Commissioner).

# A look at network's activities

## Reinforcing the African Water Information System (AWIS)

One way in which members of the ANBO communicate and share knowledge is via the African Water Information System (AWIS) *http://www.sadieau.org*. This collaborative information portal based on voluntary participation currently allows its members to share different types of documents via the Internet, such as reports, reference material, academic works, studies and brochures on continental surface water.

A memorandum of understanding was signed by OMVS and OiEau concerning UNDP funding and by UNESCO and OiEau concerning the redesign of the AWIS website. As part of this project, "other sources of knowledge" related to continental surface water, groundwater and the climate will be added to the website (maps, computer graphics, videos, etc.).

This project will ensure the platform's viability and visibility by establishing systems that synchronise the information collected with other partners' information systems including the IHP-WINS made available by UNESCO.

## June – Water Month in Quebec

Since 2017 when Quebec adopted the Water Act, it has dedicated the month of June to Water. Indeed, it occupies a privileged position, with its abundant water resources. Why is it giving water a place of honour?

Quebec has 3% of the world's fresh water reserves and as water is so omnipresent, it is tempting to take its conservation for granted. However, the people of Quebec are Canada's biggest consumers of water (530 litres of water per inhabitant per day). Yet, for some of its population, like indigenous communities, access to water remains a problem. Moreover, human activities degrade the quality of this essential resource which is vulnerable and finite.

Water Month therefore aims to stop people from undervaluing the resource and to make them aware that we are individually and collectively responsibility for conserving water via better management and sustainable behaviour. Quebec's basin organisations are grouped together in the ROBVQ and have a role to play in this endeavour – they have been specifically mandated by the government of Quebec to implement Water Month.

This year, the 3rd edition was virtual for a change and it certainly went viral: 300,000 people took part in over 110 activities organised thanks to the mobilisation of one hundred or so basin organisations and partners (cleaning operations, local campaigns to raise awareness on the impact of waste thrown into toilets, photo and video competitions, conferences, promoting public access to water, etc.).

**Héloïse Fernandez,**
heloise@robvq.qc.ca

*For further information:*

**moisdeleau.org**

# A look at network's activities

## Sharing women's experiences in water solutions

The 8th World Water Forum (March 2018, Brasilia) saw the Brazilian Network of Basin Organisations (REBOB in Portuguese) organise the Citizen's Forum, leading to them take on the challenge of communicating this to the diverse stakeholders in society involved in the participative and shared management of water resources, with emphasis on the value of women's involvement in water management and governance.

On its 20th anniversary in 2019, REBOB launched REBOB MUJER (which translates as REBOB WOMAN) on International Women's Day. With the collaboration of uncountable women fighting for water, this space displayed experiences and information showing the value of women in water management and governance processes in Brazil and across the world, with articles and a clear indication of good practices.

As such, REBOB opens up a space to display the strength and leadership of women in this process of nurturing our waters.


**www.rebob.org.br/rebobmulher**

## Development of the Americas Water Platform

The Latin American Network of Basin Organizations (LANBO) developed the Americas Water Platform in association with the Brazilian National Water Agency (ANA) and various Brazilian and international institutions in November 2019. It was launched during an event held by the Brazilian Association of Water Resources (ABRHidro) in Foz de Iguazú and its aim is to seek a consensus on how to resolve the problems encountered and help to formulate public policies related with integrated management and the rational use of water resources. The platform gathers together institutions, basin agencies, governmental entities, the private sector, learned society and users.

The first debates were centred on two items on the technical, institutional and political agenda of the countries in the Americas and the Caribbean: "Water Safety, Technology, Innovation" and "Water Co-operation." The debate ended by further reflecting on the importance of establishing a platform capable of bringing the institutions in all of the regions of the Americas together in the spirit of co-operation.

As part of the exchange, Lupercio Ziroldo Antonio, Permanent Technical Secretary to the LANBO indicated that the Americas Water Platform will contribute to integrating information aimed at implementing public strategies and policies for the sustainable management of water in the countries involved, identifying and cooperating with solutions for conflicts with the development of projects and programmes to conserve water resources.

**Lupercio Ziroldo Antonio**
englupercio@uol.com.br

# A look at network's activities

## The 5+5 Dialogue's Water Strategy in the Western Mediterranean (WSWM)

The Permanent Technical Secretariat of the Mediterranean Network of Basin Organisations (MENBO) has lent its support to the Júcar Water Confederation for it to host the 8th Technical Work Group (TWG) of the 5+5 Dialogue's Water Strategy in the Western Mediterranean (WSWM) in Valencia on 18–19 September 2019.

During the meeting chaired by Spain, the 5+5 discussed the implementation of the Strategy and their action plan, as well as new actions to perform in 2019-2020. The participants agreed on the need to continue to seek financing to implement the action plan projects and synergies with the Mediterranean Union (UpM in Spanish) and other international organisations (GIZ, AECID, CIHEAM).

One session was dedicated to reviewing the status of the implementation of the Sustainable Development Goals in member states; there was also a presentation by the Mediterranean Water Institute (IME in its French acronym) of the numerous links connecting the SDGs and the priorities and projects proposed in the 5+5's strategy.

Participants welcomed the contributions from the CIHEAM - IAMZ (Mediterranean Agronomic Institute from Zaragoza) and the involvement of the technical group in the development of the Master's degree in sustainable water management and governance (course contents, selection of three scholarship holders from Morocco, Algeria and Tunisia who will study this Master's and the selection of trainers), This Master's degree aims to meet the training and skills needs of the 5+5 countries required to fully develop the projects proposed in the action plan.

**https://remoc.org/wswm/**
**www.mastergestionagua.es**

5+5 حوار غرب المتوسط
Dialogue de la Méditerranée Occidentale
Western Mediterranean Dialogue

## Appointment of Miguel Polo Cebellán New Permanent Technical Secretary of MENBO

In accordance with the Articles of Association of MENBO, Miguel Polo Cebellán was appointed the new Permanent Technical Secretary of the network by the Chairperson of Júcar's Water Confederation on 24 February 2020.

Miguel Polo is currently the Water Commissioner of Júcar's Water Confederation, having occupied various posts in the confederation since 2004. Miguel Polo is well familiar with MENBO and its activities and has declared his full commitment to the network, emphasising his *"complete willingness to continue fulfilling MENBO's objectives, promoting the activation of new initiatives and activities concerning driving and fostering integrated management of water resources in the Mediterranean."*

His appointment followed the naming of his predecessor, Teodoro Estrela, as Director General of Water for the Ministry of Ecological Transition and Demographic Challenges of Spain.

# A look at network's activities

## The International conference "Science and Innovations for Water Security"


The event organized by the Network of Water Organizations of Eastern Europe, Caucasus and Central Asia (EECCA-NWO) with the support of RosNIIVH, the host-organization of the Symposium "Clean Water of Russia". It gathered 40 participants from Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Uzbekistan, France, Finland, Columbia and the Netherlands on 23-24 September 2019 in Yekaterinburg, Russia..

**4 thematic priorities were addressed:**

- Water security of transboundary water bodies in the context of growing water scarcity;
- Innovation-based water sector development strategy;
- New innovative approaches/ideas to efficient and effective water management;
- Role of science and education for ecologically safe environment and innovative water development.

**In the Conference conclusions, recommendations were made:**

- To strengthen science, research and education to support the development of innovation and new technological solutions addressing the current water security and scarcity issues in transboundary waters, including by poolling regional resources, improving public curriculum standards, optimizing proportion of lecture, practical and laboratory hours , creating favorable conditions for master and PhD students to carry out their research, organizing targeted assessments of training and job needs for the water sector, involving employers in the development and implementation of the public education policies, development and implementation of visiting professorship programs, developing investment projects in the water sector, while taking into account educational aspects in order to increase capacities of young professionals.
- To strengthen governance, laws and regulations through long-term water sector development strategy, application of IWRM and intersectoral approach, development of decision-support tools (integrated information systems based on GIS, remote sensing, databases, and knowledge bases), creation of transboundary organizations or support of existing ones, regular update of river basin management plans and experience sharing.
- To focus on the achievement of an ecologically safe environment.
- To reopen a discussion, given the current problems of water security (climate change impact, demographic pressure, etc.), on the need and applicability in the long-term (2030-2050) of a transfer of Siberian river flow to Central Asia, based on the Chinese experience in inter-basin 'south-north' water transfer.
- Participants expressed appreciation of the effective and fruitful activities carried out by EECCA NWO over more than a decade with the support of the United Nations Economic Commission for Europe (UNECE), the Government of the Russian Federation, the Scientific Information Center of the Interstate Commission for Water Coordination of Central Asia and INBO. The network contributed to maintain mutual understanding between experts and countries in the region.

The next conference of the network will be held in 2020 on the theme **"Transboundary Cooperation Lessons in EECCA Countries"** in Tajikistan.

**Iskander BEGLOV**
*Secretariat of EECCA NWO*

**www.eecca-water.net**

# A look at network's activities

## 17th International "EUROPE-INBO" Conference on the implementation of European Water Directives

Group work and questions/answers session during the Europe-INBO workshop on Nature-Based Solutions

At the invitation of the Finnish authorities (Finland's Ministry of the Environment, Finland's Ministry of Agriculture and Forestry, the Lake Vesijärvi Foundation, the City of Lahti, the Finnish Environment Institute and the ELY-KESKUS Centre for economic development, transport and the environment in South-East Finland), the 17th International EUROPE-INBO Conference held in Lahti brought together 142 delegates from 30 countries representing water administrations and organisations concerned by the implementation of the Water Framework Directive (WFD) and its "Daughter Directives", Member States of the European Union and Candidates and countries neighbouring Eastern Europe, the Balkans, the Caucasus and Central Asia, and the Mediterranean Basin.

There was a workshop on how to better integrate Nature-Based Solutions (NBS) into the WFD Programmes of Measures for basin restoration (governance, implementation, evaluation) and theme-based sessions presenting four major challenges and the related solutions:

- "Water quality" (ecological status objectives and the challenge of microplastics)
- "Agriculture and climate change" (challenges in terms of agro-ecology, non-point source pollution and the availability of water sources)
- "WFD Review" (to establish a practical review on the implementation of the WFD: some possible exemptions and the "one-out all-out" principle?)
- "Sea-Basin interface" (integrated management of basins and coastal waters: to ensure greater consistency)
- "International and transboundary cooperation".

At a meeting of the World Liaison Bureau, INBO's General Secretariat set out the network's 2019-2021 work programme.

Following the work of Europe-INBO, Mr Timo Jokelainen (Director of the Lapland ELY-KESKUS Centre for Economic Development, Transport and the Environment, Chairman of the Finnish-Swedish Transboundary River Commission and the Finnish-Norwegian Transboundary Water Commission) was elected Chairman of the 2019-2021 Europe-INBO and participants adopted the Declaration of Lahti, which summarises the analysis and recommendations made by INBO members on all the themes discussed.

*All the presentations and photos of the event can be found on INBO's website at:*

**www.inbo-news.org/fr/agenda/euro-riob-2019**

# A look at network's activities

## Transboundary water cooperation a true endurance sport

The border river between Finland and Sweden where River Tornio and River Muonio meet.

As Europe-INBO President since June 2019, I have a unique opportunity to examine transboundary water cooperation from a broader perspective.

I live in Finnish Lapland, the northernmost part of Finland: a 100 000 km2 area sparsely populated (180 000 souls), with a lot of pristine nature and clean waters. We work on transboundary water issues with our three neighboring countries: Norway, Russia and Sweden. Cooperation with Sweden and Finland mainly addresses the challenges of water quality issues and above all, salmon fishing management. The transboundary basins of the Torne and Teno rivers (shared with Sweden and Norway respectively) are very important for spawning of the wild Baltic and Atlantic salmon. The Finnish-Russian water cooperation focuses on regulated waters.

Finland is known for its long and successful history in transboundary water cooperation. The oldest of our agreements was concluded in 1959 (the Lake Inari Regulatory Agreement between Finland, Norway and Russia). One of the first agreements to reconcile the overall use, management and protection of water resources is the Finnish-Russian Agreement on the utilization of transboundary watercourses (1964). Finnish-Swedish and Finnish-Norwegian agreements have been in force since 1971 and 1981 respectively.

I work as a President or Member in the four bodies created by these agreements. From the practical level, cooperation with all our neighboring countries is constructive. However, cooperation between countries is not always easy. When it comes to transboundary work, it is understandable that views often differ. Yet the challenges we face in the water cooperation here in the North seem rather minor compared to the challenges more populous areas that are suffering for example from water scarcity or pollution face.

As a President of Europe INBO, I have also been introduced to the transboundary water cooperation practices in other continents where the circumstances are very different from Finland in terms of natural conditions and population. However, despite many regional differences, I have also come to notice that the water cooperation worldwide has also a lot in common. This enables us and should encourage us to share information and learn from the good practices.

Transboundary waters are common resources and cannot be cherished alone. Working together requires trust and trust is an outcome of a long-term cooperation where all parties are genuinely valued. In this sense, transboundary water cooperation is a true endurance sport. In Finnish Lapland, the transboundary water cooperation is based on local participation. I strongly believe that making room for local participation in transboundary water cooperation bears fruit in the long run. It is a way to bring impact to acceptability of the measures as well as to turn agreements into concrete, environmentally friendly measures.

**Timo JOKELAINEN,**
*President of Europe-INBO (2019-2021)*

*"The agreement signed in 2010 between Finland and Sweden relating to the River Torne Basin established a permanent Commission with its own Secretariat. It promotes cooperation in water and fisheries management and provides equal opportunities in the use of the basin resources. I strongly believe that long-term and area-specific cooperation in transboundary water basins will lead to substantive improvements in the management of water resources".* Mr Timo Jokelainen, panellist for the UNECE workshop of 28 July 2020 on transboundary cooperation agreements.

Mr Jokelainen is Director of the Lapland ELY Centre for Economic Development, Transport and the Environment. He is also Chairman of the Finnish-Swedish Transboundary River Commission and the Finnish-Norwegian Transboundary Water Commission.

# GOVERNANCE

To achieve Sustainable Development Goals, preserve biodiversity (Aichi and post-2020 overarching framework) and adapt to climate change in terms of water, we must implement technical solutions – and there are solutions. Above all, it is essential to improve water resource governance. This means reinforcing the sustainable effectiveness of the dialogue between players and their cooperation.

Yet, management per basin is often at the heart of the solution needed to address governance issues.

How can operational Integrated Water Resources Management (IWRM) be implemented? How can we break down barriers and ensure greater consistency between very interdependent public policies on water, health, the environment, agriculture, energy, land-use planning and regional economic development?

How can we ensure joint management of surface water and groundwater?

How can we weigh up the benefits of the large hydraulic structures planned against their negative impacts?

What legal and institutional frameworks should we establish and what level of decentralisation can we grant local authorities?

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

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

There are the OECD's international processes that define principles and governance indicators, those of the UNECE that reinforce transboundary cooperation, from Mexico to Norway, including Uzbekistan, Cambodia and France – let's go on a journey of discovery to find initiatives that reinvent basin governance!

# Governance

## UN global water conventions: helping transboundary basins strengthen governance

The UN global Water conventions (the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes, also known as the Water Convention and the Convention on the Law of Non-Navigational Uses of International Watercourses, also known as the Watercourses Convention) are powerful tools to promote and advance transboundary water cooperation and governance and for accelerating progress towards the SDGs. The United Nations Secretary-General Antonio Guterres encourages countries to accede to and implement these conventions. They provide guiding principles for transboundary water management in the absence of basin level agreements and can support countries in the negotiation of new or revising existing cooperative arrangements. Through institutional frameworks such as the ones offered by the Water Convention, they also assist countries in the implementation of basin agreements to address growing water challenges, and thereby promote sustainable development and peace.

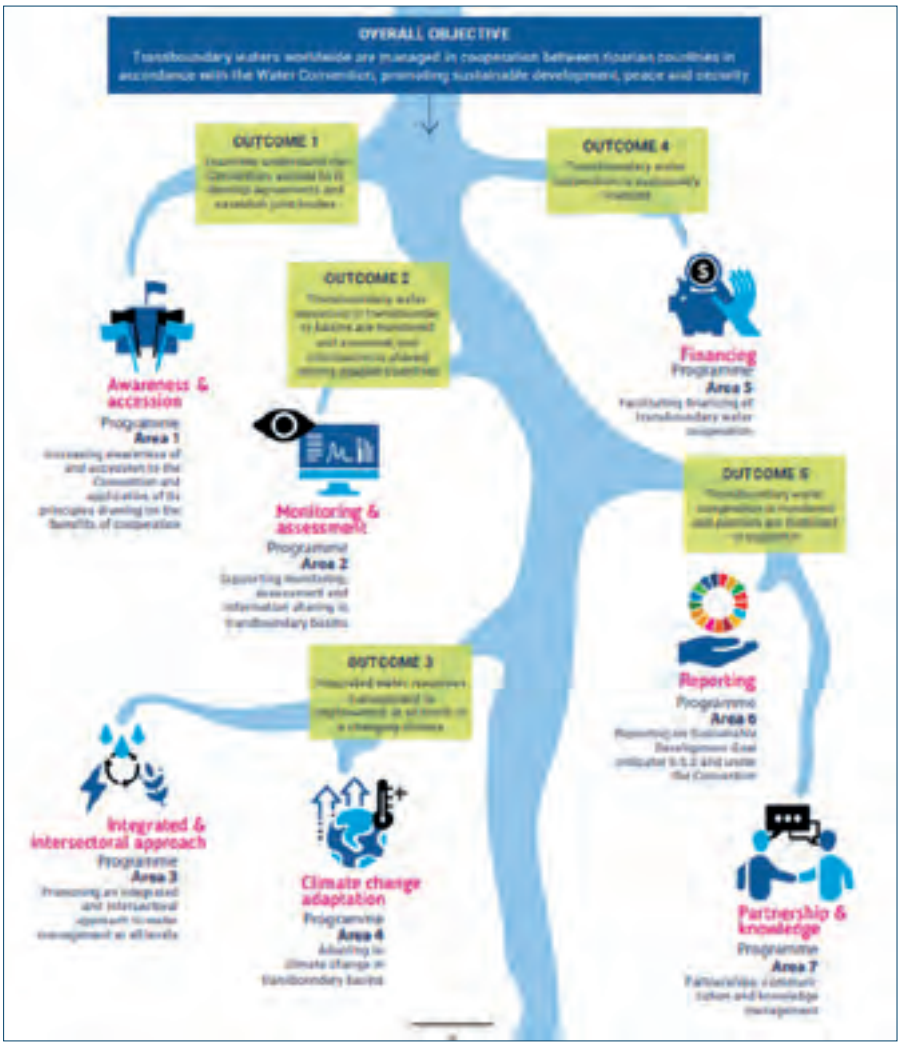
An increasing number of countries are seizing the institutional and legal frameworks of the global Water Conventions to facilitate concrete efforts for cooperation on shared water resources. Ghana's accession in June 2020 to the Water Convention follows that of Chad and Senegal in 2018, around 20 countries are in the process of acceding and more than 120 countries participate in meetings and activities.

One of the priorities of the Water Convention's programme of work (POW) 2019-2021 is to assist countries in the accession. One example is the Regional Training on How to Use the Two Global Water Conventions to Advance Transboundary Cooperation on the Ground (Dakar, Senegal, 18 - 19 June 2019) organized by UNECE together with partners, that targeted experts active in Francophone countries in Africa.

In addition to capacity-building, exchange of experience and projects on the ground, the Convention also helps countries in tackling complicated transboundary water aspects by developing guidance. For example, a handbook on water allocation is currently under development for adoption by the ninth Meeting of the Parties in (Tallinn, Estonia, 29 September-2 October 2021). A second major product under development is the checklist to develop legal agreements that was initiated during the first virtual workshop on legal frameworks for transboundary water cooperation held on 29-30 July 2020, where INBO was a partner.

The POW includes activities supporting countries in intersectoral cooperation. the water-food-energy-ecosystems prorgamme area resulted, for example, in 2020 in the "tool-kit" publication "Towards sustainable renewable energy investment and deployment: Trade-offs and opportunities with water resources and the environment", a joint effort of the UNECE Environment and Sustainable Energy Divisions, that proposes a pragmatic approach to support policy-makers in enhancing cooperation on renewable energy across sectors.

Finally, the Convention is supporting countries in financing of transboundary water cooperation. This includes preparation of a background study on the topic and a virtual global workshop on 16 to 18 December 2020. We look forward to seeing you at these events!

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*CH - 1211 Genève 10 (Switzerland)*
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# Governance

## Celebrating the fifth anniversary of OECD principles!

The OECD principles on water governance celebrated its fifth anniversary on 4 June 2020. The 12 recommendations are intended to help governments improve the way water policies are established and implemented. They are even more important now as we deal with the current health crisis (COVID-19) which draws attention to the vital and limited nature of water resources and the pressure already put on them (climate change, population growth, urbanisation).

The principles target shortcomings in governance in terms of the fragmentation, scale and coherence of policies and the regulation, evaluation and commitment of stakeholders and even corruption. Since they were adopted at the Meeting of the OECD Council at Ministerial level in 2015, the Principles have been adopted by about ten non-member countries in addition to the 37 countries in the OECD and by 170 stakeholders. They are now available online in 18 languages.

In 2018, as part of the inclusive multi-stakeholder process within the OECD's Water Governance Initiative (WGI), the OECD developed complementary tools. The OECD Water Governance Indicator Framework allows the self-assessment of water governance frameworks, instruments and structures. Fifty water governance stories have also been compiled and circulated to inspire decision-makers, practitioners and other stakeholders.

## International Conference "Groundwater, key to the Sustainable Development Goals"

**(26–28 May 2021, Paris, France)**

The event organised by UNESCO's International Hydrology Programme (UNESCO-IHP) and the French Committee for the International Association of Hydrogeologists (IAH-CFH) will present specific aspects of groundwater (governance, best practices, funding) and how these resources can help us achieve the SDGs. Registrations open in January 2021!

*For further information, go to the "conferences and visits" section of the*

**www.cfh-aih.fr**

## 13th session of the water governance initiative of the OECD (Paris, 9–10 January 2020)

During this session with at least 80 participants, the OECD has proposed a new strategy for 2019–2021 which focuses on the initiative's works to step up implementation of the governance principles. It encompasses the development of impact indicators and the implementation of actions that shore up the capacity for these principles to be applied in the field.

During the session working groups previously formed around impact indicators and capacity strengthening regathered, in order to move forward and fulfil the contributions and objectives agreed, before the 9th World Water Forum.

The meeting allowed for the opportunity to officially present the OECD report on Water Governance in Argentina, as well as the OECD Action Plan on the SDGs (Sustainable Development Goals) of the UN and also introduce and discuss the draft report on Water Governance in Peru which covers the recommendations for improving the system of governance in the country.

**www.oecd.org/water/water-governance-initiative.htm**

# Governance

## Martinique Water Office: Franco-Cuban Cooperation in water governance

In 2017, the Martinique Water Agency entered into a cooperation agreement with Cuba in partnership with the International Office for Water concerning integrated water resource management.

The Martinique Water Office and OiEau organised two technical missions in Havana in September 2017 and February 2019, and a Cuban delegation from the National Institute of Hydraulic Resources (INRH) together with OiEau carried out a mission in Martinique in February 2020. The partners discussed their experiences in water governance, watershed protection and operating methods for drinking water and sanitation services.

Elected representatives from Martinique introduced Cuban engineers from INRH to the French style of water governance and managers showed them the procedures implemented (catchment protection, basin management). They also visited aquatic ecosystems (mangroves) and the island's infrastructures (wastewater treatment plant, drinking water treatment facility), including the pilot wastewater treatment plant in the municipality of Diamant and its very efficient Plant-Based Filters (ATTENTIVE experimentation) – this technology is climate resilient, ecological, adapted to tropical climates, inexpensive and effective in meeting discharge standards.

Within the framework of the INTERREG Caraïbe cooperation project currently being developed with OiEau, INRA together with Martinique and Guadeloupe Water Offices aim to promote ATTENTIVE technology in the Caribbean, particularly in Cuba.

Through concrete initiatives, the Martinique-Cuba partnership managed by OiEau allows water stakeholders in the Caribbean to forge closer links, to share engineering techniques in water management and sanitation in the islands' tropical basins and to implement common solutions to adapt to climate change.

ODE OFFICE DE L'EAU MARTINIQUE

**www.eaumartinique.fr**

## Vienne basin (France): towards a territorial organisation of Public Bodies to Plan and Manage Water Resources (EPAGE)

Since the enactment of several laws on territorial reorganisation establishing the obligation of inter-communal bodies to take charge of the management of aquatic environments and flood prevention, elected representatives of the Vienne Basin Management Association have considered that this is also an opportunity to promote the creation of an EPAGE.

This development has led to in-depth discussions on the remits to be taken into account, including regulatory items related to the large water cycle that must be organised territorially in a concerted manner, with other subjects related to small water cycle managed by the same inter-communal bodies.

Over a two-year period, several technical and policy-based workshops were organised and the 11 members of the Association, including one large city, finally decided to:

- streamline the scope of the drainage basin intervention ensuring one single area and avoiding pockets,
- consolidate these remits in metrology and use contractual management tools, consider how to prevent run-off and combat pollution in rural environments for example,
- align technical and financial capacities in keeping with the actions to be performed under several territorial contracts funded by the water agency and the region to stay in touch with territorial issues and favour local governance,
- reform and better organise the general governance of the establishment, including the functioning of inter-communal bodies in charge of other policies on urban planning, sanitation and drinking water for example.

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# Governance

## Lake itasy management committee – Madagascar

Creation of COGELI – ITASY region, February 2019. © OiEau

The project to support IWRM in Itasy was implemented from 2018 to 2020 by the International Office for Water (OiEau) with financial support from the Rhone-Mediterranean and Corsica Water Agency. It was carried out in cooperation with the Ministry of Water, Energy and Hydrocarbons (MWEH) and the Region of Itasy in Madagascar. The Region of Nouvelle-Aquitaine, which was very much involved in the pilot basin, was also closely associated with the activities.

The project concerned the creation of the Lake Itasy Management Committee (COGELI) through the mobilisation of stakeholders – representatives from decentralised departments, Municipalities, the Region, communities and users – with a view to drawing up the first basin development and management plan, the "Lake Itasy Contract". A “bottom-up” approach was used to initiate activities based on a common objective – protecting the basin. To complement this, the MWEH took a “top-down” approach to follow up the initiative, ensure stakeholders appropriated the plan and ensure the plan complied with the country's public policies.

## The Rio Bravo Basin: 2020 Challenges and Actions

In Mexico, 26 Basin Committees have been created under the National Water Law, gathering different stakeholders for the purposes of coordination and dialogue, support, consultation and advisory services, including the National Water Committee, the federal government, state and municipal governments, water users and local organisations within the basin.

The Rio Grande/Bravo (RGB) basin is transboundary, draining a watershed of 457,275 km², 50.5% of which covers the United States of America and the remaining 49.5% in Mexico. The Rio Bravo Basin Committee (or CCRB as it is known in Mexico) is the largest in the country, and was set up in 1999 to partially cover the watershed in the five states: Chihuahua, Coahuila, Durango, Nuevo León and Tamaulipas.

The Basin Committee is divided into auxiliary bodies, acting on the geographical areas of sub-basins, micro-basins or aquifers, formed as Commissions or Committees where water users and local communities can come together to create action plans to develop activities aimed at recovering and conserving the watersheds and aquifers and making water management more sustainable.


The Basin Committee acts by using specialised and multi-disciplinary working groups to model scenarios, regulate water distribution and water culture, strategically plan, manage wetlands, and this year groups were also created to cover ground water and environmental services.

To strengthen water governance, the CCRB, supported by the Nuevo León State Government, created the digital platform SIG-Bravo (*https://www.cuencariobravo.org/*) aimed at disseminating geographical information generated in the basin and generate local reports to conserve the basin's water resources, which will be ready over the coming year.

The year 2020 has been a challenging year for the CCRB, due to the present global health emergency, driving the CCRB to adapt the use of technology to continue its activities remotely via video conferencing as a social distancing measure. The CCRB already contemplated the the possibility of remote meetings in its governance, and some working groups had already been using video conferencing as a work tool. On 26 June, the CCRB's Committee for Operations and Monitoring, the group responsible for monitoring and implementing the Basin Committee's agreements held its 7th Meeting using this technology. Crucial agreements were forged during this session, including the decision to elect members of the academy as CCRB stakeholders and to resume the specialist working groups, as well as the participation of the CCRB in the development of the Regional Water Programme in coordination with the National Water Committee.

Continuing with the actions proposed this year, we will see them through, with a 2030 basin perspective constantly in mind.

CCRB
Consejo de Cuenca del Río Bravo

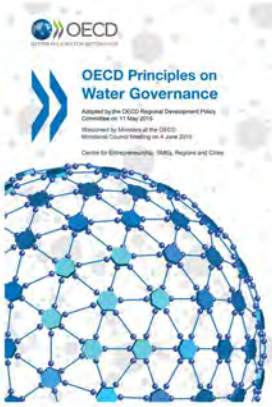
# Governance

## Improving Water Governance in Norway

An evaluation of Water Management in Norway in 2016 assessed the work with producing River Basin Management Plans (RBMPs) and Programmes of Measures (PoMs) from 2010 to 2015. Authorities and stakeholders at local, regional and national level contributed with 249 survey reposes and 1500 comments/suggestions. The OECD Principles of Water Governance served as a useful checklist.

- Proposals for improvements were developed by the Agencies and delivered to the Ministries who responded with the following actions in 2019:
- Revision of the Water Regulation clarified roles and responsibilities of authorities and municipalities involved in the update and implementation of RBMPs and PoMs.
- National Policy Guidelines agreed across ministries underlined the responsibility of authorities and municipalities to participate, and set national ambition levels in important policy areas: Wastewater, Agri- and Aquaculture, Invasive Species, Drinking and Bathing Water, Transport, and Land Use. (Previously only hydropower had received guidelines 2014).

These improvements aim for a more streamlined river basin planning process towards 2022, and fulfilling the OECD principles # 1 and # 3. The evaluation was delivering on OECD principle # 12: Promote regular monitoring and evaluation of water policy and governance.




## Closing the water cycle gap: Innovating Water Management Optimisation Practice: IN-WOP

This project aims to study the contribution of multi-objective optimisation approaches to integrated water resources management. The project adopts a comparative perspective in which the IWRM models in three existing case studies (Lake Como, Italy; River Seine, France; the Merguellil, basin Tunisia) are supplemented with multi-objective optimisation simulation formulations. The solutions found with these new multi-objective optimisation formulations are compared with previously identified solutions. This new approach does not prematurely aggregate the stakeholders' various objectives. Ethically speaking, this allows the specificity of stakeholders' interests and preferences to be conserved. In technical terms, this leads to the identification of innovative solutions specific to each case, a better consideration of the consequences of solutions proposed in relation to different stakeholders' interests and preferences and a move towards innovative and responsible water resources management.

This project is co-funded by the "Closing the water cycle gap – Water Resources Sustainable Management" JPI Water 2017 programme

*Consortium: Delft University of Technology (coordinator), ARTELIA, INRAE, National Institute of Agronomy Tunisia, Politecnico di Milano*
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# Governance

## Youth participation in river basin councils: the case of Central Asia

Poor civil society engagement (to varying degrees) in the countries of Central Asia is one of the limiting factors for the wholesome implementation of IWRM. The participation of young people under 35 (accounting for half of the region's population) in basin council meetings is usually limited to young professionals working for member organizations. This can be considered as a missed opportunity, as involving youth could build its capacities from education to practice, improve its representation and make different voices be heard.

Following a first youth workshop organized by the International Secretariat for Water in Astana in 2017, a group of young people in Kazakhstan advocated for participation in the meetings of the basin councils and were given a chance to participate in one of the meetings. Following this precedent, rights of youth to participate in the basin councils' meetings was acknowledged in Kyrgyzstan in 2018. This initiative was bolstered by the members of the regional CAY4W (Central Asian Youth for Water) network supported by the International Secretariat for Water, German-Kazakh University and the Swiss Agency for Development and Cooperation. In 2019 CAY4W members of the network participated in the council's meetings in Kazakhstan and Tajikistan.

Kazakhstan and Kyrgyzstan were the first Central Asian countries to acknowledge youth rights to participate in the basin councils. Of course, the mechanisms of youth engagement, their status, membership, voting rights and other settings could still be further improved. But the demonstration has already been made that youth participation in river basin councils is an effective tool for civil society engagement.

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## WIS - A comprehensive approach to drinking water and sanitation in the Ferghana Valley

For the past twenty years, the International Secretariat for Water (ISW-SIE) has been engaged in an effort to improve access to safe drinking water in villages of the three countries of the Ferghana Valley (Kirghizstan, Tajikistan, and Uzbekistan).

This represents quite a challenge: the water resources of the Naryn and the Kara Darya river basins (which are part of the greater Syr Darya basin) are under the pressure of the agricultural sector (irrigation accounts for 90% of water use). Water availability is already limited and is expected to be further reduced by the impacts of climate change.

ISW developed a model of Community Based Organisations accompanying modernization of the drinking water supply (from street tap stands to private connections) and sanitation systems.

The model secures the sustainability of local water infrastructures through the mobilisation of the users (both men and women) and an approach that is:

- Socially grounded: requiting the support of at least 85% of the future adult users, perceived as equitable and beneficial for all regardless of sex, ethnicity or age
- Legally organised: typically, as a non-profit public service providers,
- Financially transparent: with financial data of the service available to the members of the association,
- Economically viable: tariff covering operational expenses but also the required capital (investment, maintenance & replacement of infrastructures)
- Hygiene-centered: through best hygiene practices education programs in schools and local health institutions
- Holistic: sanitation is an integral part of the model proposed
- Technically supported: a part time technician is paid to follow and repair the infrastructure
- Institutionally embedded in a "public service" vision supported by an appropriate legal framework that clarifies the roles and responsibilities of the regulation authorities (Jamoat and Vodokanal).

ISW will soon implement a project applying this comprehensive approach to drinking water and safe sanitation in two districts of the northern part of Tajikistan.

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# Governance

## Water governance in Cambodia: the case of the Stung Sen Basin

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 Tonle Sap, the Stung Sen. This initiative developed in partnership with the Tonle Sap Authority (TSA) is funded by France's Loire-Brittany and Rhine-Meuse

Water Agencies and receives technical assistance from OiEau.

Water governance at different levels (basin, river basin region, national level) is one of the central aspects of the project. To support this initiative, the TSA has developed a strategy to build the capacities of members of the basin committee and human resources, via training courses in Cambodia and France, in the short and long term.

Since it was set up, the basin committee has been able to learn about the drainage basin by taking part in the identification and prioritisation of the key issues pertaining to water uses. The areas considered to be of top priority in relation to resource planning are as follows: access to drinking water, the risks linked to drought and flooding and environmental protection. A programme of measures was then formulated, leading to concrete actions that fulfil the needs of the basin.

For example, regarding drinking water, treatment plants were installed in five towns in the basin and two more are planned. The municipalities benefiting from the initiative have entered into joint discussions with a view to setting up an inter-municipal body (cooperative) to manage drinking water facilities.

This participative multi-tiered approach allows positive coordination between drainage basin planning and regional stakeholders. It is an great opportunity for governance to promote visible results. As the 2016-2020 programme of measures is coming to an end, it is time to initiate a new planning cycle, capitalising on achievements and enabling the basin committee to redefine requirements.

## Saiss groundwater contract (Morocco): harmonious and sustainable socio-economic development tools

The Saiss basin covers an area of 2200 sq. km and is home to a population of over 3 million inhabitants. It contains an aquifer system that in socio-economic terms is crucial, firstly because it supplies drinking water to the large cities of Fez and Meknes and secondly because it has a role to play in developing the agricultural sector.

Since the 1980s, successive years of drought have resulted in the over-exploitation of groundwater, which in turn has led to piezometric levels constantly falling, some rivers drying up and springs becoming depleted. This ongoing pressure combined with the foreseeable effects of climate change will, in the short and medium term, compromise the safety of drinking water and the development of agriculture, tourism, industry, the economy and the environment.

To address this issue, it was necessary to implement a new type of governance based on the commitment of various partners and on a participatory approach, through the creation of a participatory groundwater management contract governed by the Water Act 36-15. Under the auspices of Provincial Water Commissions, steering and monitoring committees were set up to ensure implementation and arbitration and propose improvement measures.

The first version (2015) was not completed and the Saiss groundwater framework agreement is now being updated and re-aligned with the new regulatory framework. The action plan is based on the following four main objectives:

- Expand the water supply by constructing a dam and transfer water to the plain for irrigation, and in addition consolidate the supply of drinking water to large towns via water supply pipes connected to existing dams. Reuse projects are also encouraged in order to reduce pressure on local water resources.
- Manage demand for water by rationalising uses and introducing water-efficient irrigation practices.
- Protect groundwater by marking out protected areas and reinforcing water policing controls.
- Improve understanding of groundwater monitoring, communicate via a geo-portal dedicated to Saiss groundwater, raise awareness of farmers and provide them with guidance.

This project, which has given new impetus to the development of the plain, receives funding from the EBCD and the EU, from the Sebou Water Basin Agency and from the Regional Agriculture Directorate.

**However, certain challenges remain:**

- Limitation in areas irrigated and monitoring of the existing situation;
- Checks on groundwater taken in a private capacity;
- Farmers' adherence to protective measures;
- Managing periods of drought

# FUNDING

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

One major difficulty is the need for funding.

On the one hand, we need funding for governance.

Implementing a public water policy involves certain expenses, to allow:

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

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

Therefore, it is crucial to plan and organise the funding of these two aspects.

Traditional public funding is more and more limited. So, it is often a good idea to seek alternative, more independent funding mechanisms, – both in relation to national finances and international aid – and more sustainable funding.

The projects conducted by the INBO members allow us to explore these alternatives, such as the application of the principles of polluter pays / user pays and also payment for environmental services.

***"The mobilisation of funding is now essential, not only for water infrastructures, but also to develop networks to monitor water resources, to make pressure measurements for different uses and to collect hydrological data."***

Niokhor NDOUR,
Director of Water Resources Management and Planning, Senegal

# Funding

## Financing of decentralised cooperation by the French water agencies

2020 marks the 15th anniversary of the law relating to international cooperation between local authorities and water agencies in the fields of water supply and sanitation, commonly known as the "Oudin-Santini law". At a time when the stakes in terms of access to water remain colossal throughout the world, this favourable legal framework allows the international intervention of the agencies via the mobilisation of 1% of their budget for the benefit of water and sanitation access projects in the South countries. They have thus supported more than 1,300 projects between 2013 and 2018, mainly on the African continent.

The financial commitment of the French water agencies abroad represents an average of 15 million euros per year. The local authorities' commitment to the Oudin-Santini law reached its peak in 2019, at €13 million. This reflects the growing interest of elected representatives in international water-related issues and their support for development projects from their territories. However, the potential that can still be mobilised from local authority water and sanitation budgets is estimated at €50m per year.

Decentralised cooperation is a partnership between a French and a foreign local authority to promote local development through the implementation of drinking water and sanitation access projects. External operators, such as an NGO, are often involved in the technical implementation of the project. The objective of the water agencies is to support this commitment to Integrated Water Resources Management (IWRM), sustainable projects that take into account all users, with a high level of technical expertise. It is important to adapt projects to the local policies of the country. They must also take into account the technical, administrative, organisational and financial competence in order to guarantee their effective, equitable and sustainable implementation.

The actions eligible for aid from the agencies range from studies, work, support (awareness raising and training), support for good governance,... to evaluation. In this framework, decentralised cooperation allows the involvement of local authority agents who can share their experiences and strengthen their common capacities.

The annual amounts, aid rates and eligibility conditions are defined by each water agency within the framework of their 2019-2024 intervention programme.

LES AGENCES DE L'EAU

# Funding

## "100 Water and Climate Projects for Africa"

At the end of the 1st edition of the "One Planet Summit", held on 12 December 2017 in Paris, the President of the French Republic made a commitment to ensure the development of "100 Water and Climate projects for Africa" within five years.

The management of the initiative was entrusted to INBO, Secretariat of the World Alliances for Water and Climate (GAfWaC), within the framework of the Incubation Platform that it has been leading since the United Nations Climate Conference of Marrakesh (COP22, November 2016).

In this respect, INBO seeks and selects the relevant project proposals, co-establishes and secures the budget required for the incubation. The latter must be modest compared to the implementation budget, with a leverage effect of at least 1 to 100; on average, 60,000 euros of incubation for an implementation of 1 to 10 million euros).

INBO provides technical support to the project leaders to meet the requirements and procedures of the climate finance donors.

This initiative is included in the priorities specified in the Paris Pact on water and adaptation to climate change in river basins, lakes and aquifers, signed by over 360 organisations worldwide within the framework of the COP21 in 2015 in Paris.

The six French water Agencies alone have committed to incubating or implementing 20 projects, specifically in the Sahel, a fragile, arid region where sustainable water management is crucial in a context of particularly unfavourable climate change. International institutions are also supporting the initiative. As co-organizers of the "One Planet Summits", alongside the Presidency of the French Republic, the World Bank and the United Nations General Secretariat contribute to its follow-up and provide support. In particular, the World Bank has integrated into the initiative its climate change resilience project in the transboundary Niger River basin. Like the commitments of the French Development Agency (AFD) and the French Global Environment Facility (FFEM), all development banks (bilateral and multilateral) and specialized climate finance funds (Green Climate Fund, Adaptation Fund, etc.) have a role to play in supporting the initiative. They can contribute to the identification of projects, finance their incubation or finance their implementation.

More than 50 projects have already been incubated!

Would you like to join the collective "100 Water and Climate Projects for Africa" initiative by financing all or part of a project? Contact us at the following address: riob@riob.org

We will give you details of the projects that can be financed and you can let us know what you are interested in doing – financing the emergence of a project through an incubation process, financing the implementation of a project that has already been incubated or financing the entire life cycle of a project, from incubation to implementation.

*For more information on the initiative, go to the web page devoted to this on our website:*

**www.riob.org/fr/incubation**

LES AGENCES DE L'EAU

# Funding

## Organisation for the Development of the Senegal River Basin (OMVS): Large-scale investment in the Senegal river basin

When the organisation was created on 11 March 1972, due to a cycle of droughts affecting the entire sub-region, the founding fathers of OMVS wanted to build an exemplary cooperation framework and a pertinent vector for regional integration.

Fifty years on, the progress made in this field has been spectacular. Funding an ambitious investment programme has allowed the construction of multi-purpose dams.

The hydro-electric power plants already in operation (Manantali and Felou with a respective annual production of 900 GWh and 300 GWh), those being completed (Gouina, with a capacity of 600 GWh) and those planned (Koukoutamba and Gourbassi and their scheduled capacities of 900 GWh and 100 GWh, respectively) considerably reinforce the energy security of the basin. The oil bill of Member States is expected drop by about 200 billion FCFA and in addition to these investments, rural villages are benefiting from an electrification programme.

The combined construction of the Diama and Manantali dams has also bolstered Member State's food security: these structures have respectively limited saltwater wedge intrusion (previously observed as far as 200 km upstream) and paved the way for large-scale agricultural development, resulting in irrigable potential increasing from 10,000 to more than 375,000 ha.

In terms of access to drinking water, the Diama dam covers the drinking water requirements of the towns of Nouakchott (100%) and Dakar (60%). All the other large towns along the river mainly get their supplies from the Senegal river.

Another major goal is to ensure the navigability of the river with the intention of opening up Mali, Eastern Senegal and the Gorgol and Guidimakha regions in Mauritania. The legal framework (International Code on River Navigation and Transport), regulatory framework (Sailing Instructions) and institutional framework (SOGENAV – a company in charge of Management, Operations and Navigation on the river Senegal) have been set up. In the near future, OMVS will launch work on the navigable channel (between Saint-Louis and Ambidédi), the construction of the Saint-Louis sea-river port, the Ambidédi terminus port and the seven river stops all along the route. When completed, more than one million tonnes of goods will be transported on the river every year thanks to these investments. This figure could reach 25 million tonnes per year by developing mining transport.

Since 2006, 240 Billion FCA have been invested to mitigate unavoidable negative externalities of these major installations and improve the populations' living conditions, particularly via the GEF/BFS (Senegal River Basin Water and Environmental Management Project) and PGIRE (Integrated Water Resources Management and Multiple Uses Development Programme for the Senegal River Basin). Moreover, the populations were closely involved in all stages of the Organisation's Programmes. This concerted and supportive management approach based on the involvement of all the basin's stakeholders has been at the heart of OMVS's actions since the adoption in 2002 of an innovative avant-garde treaty: the Charter of Waters of the Senegal river.

**Mohamed Fawzi BEDREDINE**
*High-Commissioner OMVS*

# Funding

## « User pays » and « Polluter pays » principles: experience of Brazil`s Federal District

Laws on Water Resources Policy in Brazil, at the national and the sub-national scales, define a key financing mechanism for Integrated Water Resources Management (IWRM): the charging fee for the use of water resources. Formally established basin organizations (River Basin Committees) decide when to implement such instrument, define the mechanisms for charging, and suggest the monetary values to be adopted. Those charges may take into consideration the socio-environmental characteristics of the river basin, the reality of each water use sector, and the financing needs to carry out IWRM actions and to implement studies, programs, projects and works.

According to Brazilian legislation, water bodies are owned either by the Union (transboundary rivers and lakes) or by the States/Federal District (non-transboundary surface water bodies and groundwater). In the Federal District, water uses in Union-owned water bodies have been subject to charging fees for three years now. Water uses in Federal District-owned water bodies will be charged beginning next year. All those charging mechanisms were approved by the respective river basin committees and are overseen by the National and the Federal District Water Councils.

The charging fees in both national and sub-national levels consider the user pays principle for water abstractions, and the polluter pays principle for effluent discharges. The fees are intended to enable the execution of the River Basin Plan, which is another relevant IWRM instrument, along with the quantitative and qualitative control over water uses. Official IWRM agencies are responsible for collecting the fees and investing them in the basin where they have been charged. Up to 7.5% of the total collected fees may be used for administrative expenditures of river basin agencies or equivalent entities. The rest of the fund shall be used according to the investment program defined by the respective River Basin Plan.

Currently, important works in the Federal District are being implemented with funds originated from the water use charging fees: piping of rudimentary irrigation canals; construction of small reservoirs to optimize the regime of water abstraction in rural watersheds; development of capacity-building programs; only to cite a few.


**Gustavo Antonio CARNEIRO**
*Superintendent of Water Resources at the Regulatory Agency for Water, Energy and Sanitation of the Federal District (ADASA)*

**Jorge Enoch FURQUIM WERNECK LIMA**
*Director of ADASA*


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

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

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

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

***"The availability of data is essential for public decision-making. It allows comparisons at the highest of levels, enabling the governance of shared drainage basins, particularly basins under severe environmental pressure."***

Mr Riad NURMOHAMED,
Minister of Public Works, Suriname.

# Knowledge

## At the 1st Global workshop on the exchange of data and information in transboundary basins, the experience of OiEau was largely taken into consideration

Transboundary basins are home to over 40% of the world's population, so it is essential to exchange data and information regularly to ensure efficient cooperation between countries that share common water resources.

On 4–5 December 2019, representatives from over 70 countries in Latin America, the Pan-European region, Africa and Asia, and as many other organisations and stakeholders, gathered at the United Nations headquarters in Geneva for a "Global workshop on the exchange of data and information in transboundary basins".

This workshop was organised under the auspices of the "Convention on the Protection and Use of Transboundary Watercourses and International Lakes" in collaboration with different partners, such as the International Network of Basin Organisations, the secretariat of which is provided by OiEau, alongside the World Meteorological Organization, the World Bank, UN Environment, etc.

Ms Olga Algayerova, Executive Secretary of the United Nations Economic Commission for Europe (UNECE), opened the workshop with strong messages stressing that the exchange of data and information "is a prerequisite for developing a mutual understanding of the state of transboundary waters and, later, for establishing measures jointly agreed upon", and the link between water management and adaptation to climate change. She emphasised the "need to work together to create greater resilience, and ensure our action is based on factual and objective scientific data".

During the exposés, participants especially appreciated the presentation of case studies and the recommendations given by the representative of OiEau/INBO (the two case studies chosen in the preparatory documents were initiatives managed by OiEau).

## GRDC Data provides River Discharge Data online

The Global Runoff Data Centre (GRDC) Download portal has been completed and now *in-situ* river discharge data collected since 1988 in the Global Runoff Database are available with a few clicks.

The Global Runoff Database is operated by the German Federal Institute of Hydrology (BfG) in Koblenz, Germany. The GRDC was established in November 1988, and operates under the auspices of the World Meteorological Organization (WMO).

The Global Runoff Database of quality controlled “historical” mean daily and monthly discharge data has developed into the most comprehensive global river discharge data archive supporting climate-related programs and projects of the United Nations and their special organizations and the scientific and research communities at large.

The GRDC Data Download portal is for web-based selection and download of river discharge data collected by GRDC on behalf of WMO. Map views support the usual zoom functions and selection tools. Hoover boxes, filters and search fields assist with the selection of suitable stations.

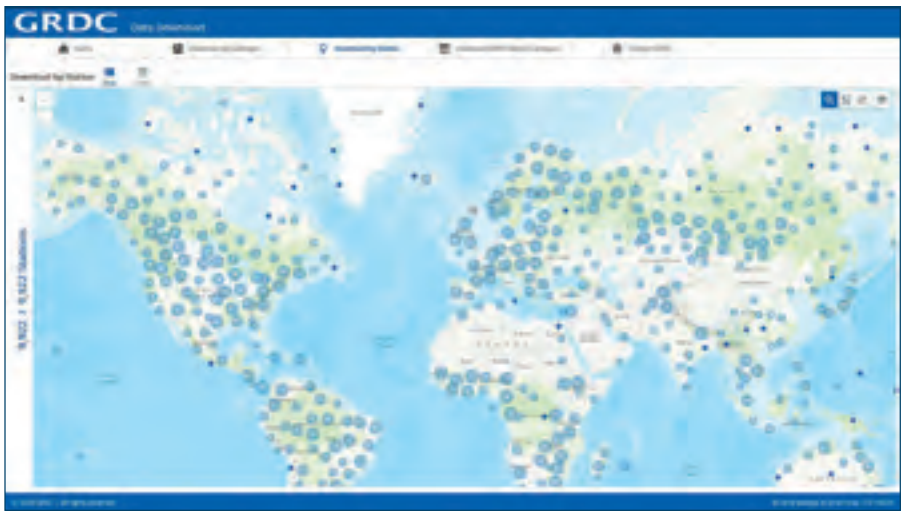



Table views with configurable columns allow a more detailed selection. Selection of several items is summarized into one download. Calibration of hydrological models, evaluating model results, or validating remote sensing data with in-situ data can now be done without cumbersome data ordering procedures.

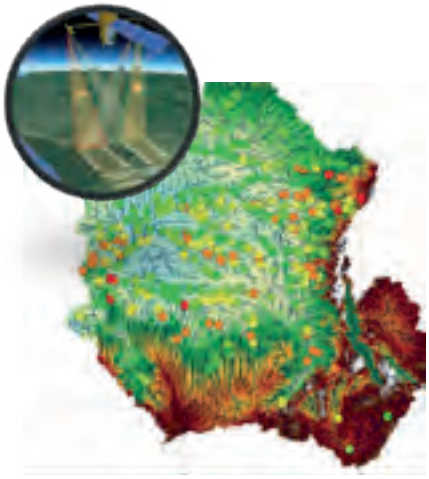
River discharge data are provided in different formats including WaterML2, which is an accepted WMO and OGC standard format for the exchange of hydrologic data.

*GRDC Data Portal:*

**https://portal.grdc.bafg.de**

# Knowledge

## Strengthening hydrological monitoring in the Congo Basin

From 2016 to 2019, INBO Secretariat provided Technical Assistance to the International Commission of the Congo-Oubangui-Sangha Basin (CICOS) project financed by the French Development Agency (AFD): Strengthening hydrological monitoring in the Congo Basin. This project falls within the framework of the Declaration of Intent signed between CICOS and the French State at COP22 for the development of Water Information Systems for Adaptation to Climate Change in the Congo Basin. The project implements innovative technologies around space altimetry, in preparation for the launch of the SWOT satellite at the end of 2021 by CNES and NASA.

Major progress has been made on the three axes of the project: provision of a historical database on space altimetry, creation of the CICOS Hydrological Information System, development of operational downstream services for river navigation and hydropower. These results were obtained in collaboration with the members of the Space Hydrology Group led by OiEau: CNES, IRD, INRAE, BRLi and CNR. A new CICOS support project financed by AFD and FGEF will start at the end of 2020 in direct continuity with the previous one: Pilot project on the development of water information systems for climate change adaptation in the Congo Basin.

## Latest results of the AfriAlliance project!

Since its kick-off meeting was held in Delft 4 years ago, the project has delivered valuable results to help African stakeholders address the challenges of water and climate change. The most recent ones include:

- **the launch of the AfriAlliance Needs & Solutions Hub** (https://afrialliance.org/needs-and-solutions-hub), which compiled water-related needs and matched them with potential solutions. Proposals can be made for additional needs (via email) or solutions (via the Hub).
- **the June 2020 MOOC,** where 700 participants discovered the concept of **Social Innovation in Water and Climate** and its interest for climate change adaptation in Africa through training modules, interactive discussions and writing of case studies as work assignment.
- **the 4th Innovation Bridge Event** (Kampala, February 2020) organized as a side-event of the 20th AfWA International Congress & Exhibition where African and European researchers and entrepreneurs made a demonstration of their social and technological innovations.
- **the 5th Policy Brief "Innovation Policy for the African Water Sector",** which presents in a 4-page synthesis key recommendations for innovation policies, along with 12 guiding principles for the development of these policies. All policy briefs can be found here: https://afrialliance.org/knowledge-hub/afrialliance-policy-briefs
- **the 3rd series of Social Innovation Factsheets** (SIFs) focused on how to reduce knowledge fragmentation by setting up Communities of Practice across Africa and EU and presented the social innovation experiences of the AfriAlliance Action Groups. All SIFs can be accessed here: https://afrialliance.org/knowledge-hub/afrialliance-social-innovation-factsheets.

# Knowledge

## Water Yearbook: Central Asia and around the Globe

Since 2018, SIC ICWC has been publishing the Water Yearbook: Central Asia and around the Globe with the support of the UN Regional Centre for Preventive Diplomacy for Central Asia (UNRCCA) and OSCE. The Water Yearbook is issued both in Russian and English. It contains information on key developments and events in Central Asia and all over the world, analyses and thematic reviews in the field of water and environment.

The Water Yearbook is structured in 16 sections.

One section presents analyses of the current water situation in the basins of Amu Darya and Syr Darya and the consequent changes in the water surface area and wetlands within the Aral Sea area, including the delta of Amu Darya, or the exposed bed of the Aral Sea (forthcoming edition).

The Yearbook also highlights activities of Central Asia regional bodies, UN bodies, international water organizations and initiatives, and development partners in the region. Particular attention is paid to five countries in Central Asia and their developments in water, agriculture, energy, environment, etc. Bilateral water cooperation between the countries of Central Asia is addressed separately. For example, the 2019 Yearbook discuses cooperation between Tajikistan and Uzbekistan along the Zerafshan River.

The 3rd edition of the Yearbook also discusses findings of a review - undertaken by SIC ICWC upon OECD's initiative - of water use and management in Central Asia from 1998 to 2019 in the Diagnostic Report on rational use of water resources in Central Asia as of 2019.

*All editions of the Yearbook are available on*

**cawater-info.net/yearbook/index_e.htm**

**Dinara ZIGANSHINA, PhD**
**Aurika GALUSTYAN, PhD**
*Scientific-Information Center of the Interstate Commission for Water Coordination of Central Asia (SIC ICWC)*

## Central Asian Expert Platform for Advanced Research in the Field of Water Security and Sustainable Development

Survival issues related to climate threats, as well as demographic, economic, geopolitical, and environmental challenges in Central Asia, like never before, require strengthening of strategic interstate cooperation based on an independent inter-sectoral research base on water and environment, as well as energy and economic security.

The idea of creating an independent Central Asian expert platform for advanced research in the field of water security and sustainable development in support of new cooperation processes was originally presented by Mr. Joop de Schutter and prof. Viktor Dukhovniy at the international conference on security and sustainable development in Samarkand in 2017.

While maintaining independence from authorized organizations and their areas of interest, the platform should unite experts in various fields to develop and analyze scenarios, strategies and policies for harmonizing the interests of Central Asian countries.

The most important and unique is that the platform will bring together experts from various institutions without creating a new organization and without the need for the experts to leave their institutes and companies. Participating specialists, partially on a contractual basis, will work independently as partners on issues defined in the general regional agenda. They will prepare evidence-based recommendations, expert reviews and analytical reports to demonstrate new opportunities for the mutually beneficial use of common (water) resources for food, energy, nature conservation, etc. for security and prosperity.

**Viktor DUKHOVNIY**
*Director, SIC ICWC of Central Asia*

**Saghit IBATULLIN**
*Director, International Training Center on Safety of Hydrotechnical Constructions (Kazakhstan)*

# Knowledge

## Basin syndicate, at the heart of the challenges of quantitative water resource management

To respond to the complexity of management by multi-stakeholder, multi-use and multi-stakeholder river basins, the French river basin unions are working to improve knowledge: data production, management, sharing, projections.

Modelling based on this data is a real decision-making tool: modelling of the quantitative state of the resource with C3PO (Durance), operational management of low water levels with the E-tiage platform (Charente), use of satellite imagery cross-referencing data on water and land use (Garonne-Ariège).

Prospective studies on the impact of climate change on water resources and the evolution of water needs according to the different uses make it possible to define adaptation strategies, with recommendations in terms of management, use and distribution (cf. Adour 2050, Charente 2050, Durance 2050).

Consultation is an integral part of these approaches. Territorial projects (Adour Charente) and the water resource management plan are thus determined by the actors of the territory consulted in meetings (Aude). The river management commissions bring together representatives of users and institutional players on the recharged axes of the Adour basin for tactical and strategic choices.

The basin syndicates are involved in a long-term cooperation approach, by federating the stakeholders of the territory around tools that enable the objective assessment of the water situation of the territory and constitute a decision-making tool in favour of an integrated approach to water.

At the crossroads of water-related issues, they act in coherence with their other missions and in synergy with other policies (flood risk prevention and management, ecological continuity of watercourses, preservation of wetlands, etc.).

*ANEB promotes the sharing of experiences on the quantitative management of water resources, representative of a diversity of territorial situations, through the animation of a Cycle of technical meetings initiated in 2020.*

**Caroline JOIGNEAU**
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**bassinversant.org**

ANEB
ASSOCIATION NATIONALE DES ÉLUS DES BASSINS

## The Rhine-Meuse Water Agency's portaits

The Rhine-Meuse Water Agency has developed a number of tools on the scale of elementary basins (surface area average 1000 km²) to communicate to local actors the successes, the difficulties encountered and the actions to be implemented to achieving the objective of restoring water quality set by the European Water Framework Directive (WFD).

Basin assessment thus represents a real historical survey cross-referencing data economic and environmental impact over several decades. Thanks to the raw data collected (including before the WFD cycles), the developments of water quality have been traced back since the 70s, 80s or 90s, depending on the case. Changes climate and evolution of descriptors and indicators, however, complicate communication on the evolution of water quality at long term.

The basin portraits, for their part, address the issues and current priorities through 37 portraits of elementary pools (maps, figures and key actions). Published in 2015 (https://www.eaurhin-meuse.fr/portraits_bassin), they will be revised by the end of 2020.

AGENCE DE L'EAU RHIN-MEUSE

# Knowledge

## Training courses in basin water management with OiEau

Vocational training is one of area of expertise of OiEau (INBO Technical Secretary), with nearly 6,000 learners trained every year, 45,000 m2 of unique educational platforms in Europe and a know-how refined for several decades, but always at the forefront of innovation.

OiEau strengthens the capacities of many stakeholders in the world in water resource management at the level of river basins, including through INBO. These may be national basins, or cross-border basins covering several countries. These training courses enable the stakeholders to take up the challenges relating to the various "pillars" of IWRM (Integrated Water Resources Management):

- Governance and identification of the main issues within the natural boundaries of the basin (river, lake or aquifer);
- Monitoring and information systems;
- Involvement of users and civil society in decision-making;
- The development of planning tools and the implementation of associated programmes;
- Setting up sustainable financing mechanisms.

## EMWIS: water governance & knowledge sharing in the Mediterranean region

Within the framework of its Water Agenda (2017), the Union for the Mediterranean (UfM) has granted its label to the Mediterranean Water Knowledge Platform, jointly launched by OiEau, INBO, the Euro-Mediterranean Information System on know-how in the Water Sector (EMWIS), the Mediterranean Water Institute, the Mediterranean Network of Basin Organizations and four pilot countries (Jordan, Lebanon, Morocco, Tunisia).

The platform responds to the central issue of the availability of reliable data and information, through National Water Information Systems (NWIS) which allow a concerted management of concrete Mediterranean problems such as access to water and sanitation, adaptation to climate change, energy, food, ecosystems or jobs.

In June 2019, the workshop on achieving the Sustainable Development Objective on Water (SDO6) in the Mediterranean concluded that there is a need to integrate the NIS in the official production of indicators.

© Abadi

***"Only evidence-based policy decisions can have a long-term impact in the Mediterranean region".***

Mr ABADI, DG Water & Environment Division - UfM

Read the article by Milman, A, et Gerlak, A. K.: "International River Basin Organizations, Science, and Hydrodiplomacy." - Environmental Science & Policy 107 (2020): **137-49. https://doi.org/10.1016/j.envsci.2020.02.023**

# Knowledge

## ACTO's regional action framework for water resources in the amazon region

© Strategic Action Programme - SAP. ACTO, 2018

The Amazon basin covers the entire central and eastern area of South America, extending over approximately 44% of its land surface from the Andes to the Atlantic. It is the largest hydrographical basin on the planet and responsible for 20% of all fresh water that flows into oceans each day.

The Amazon Cooperation Treaty - ACT was signed in 1978 by the eight Amazonian countries (Bolivia, Brazil, Ecuador, Colombia, Guyana, Peru, Suriname and Venezuela) to promote the harmonious development of the Amazon, recognising the importance that the Amazon rivers play in the social and economic development of the region. The Amazon Cooperation Treaty Organization (ACTO) was established in 1998.

The ACTO has made significant efforts in the Integrated Water Resources Management (WRM) of the Amazon basin, implementing to date significant projects outlined in a regional Amazon basin water resources action plan, such as:


The implementation of the Strategic Action Plan (SAP) to ensure integrated and sustainable management of the transboundary water resources of the Amazon river basin in line with variability and climate change, by the ACTO and UNEP with financing by the GEF. This is based on a shared vision regarding the WRM in the Amazon basin promoting the shoring up of coordinating water resource management processes, pilot actions in resilience and aquatic system protection and the environmental monitoring of the Amazon basin.

The Regional Action Amazon Project in the Water Resources Area implemented by ACTO and the National Waters Agency of Brazil, with the support of the Brazilian Co-operation Agency (ABC), allows the basin's monitoring instruments such as the Amazonian Water Network (RHA) and the Water Quality Monitoring Network (RMCA), as well as the institutional capacity for managing the basin.

Implementation of a Regional Water Platform and nexus model in the Amazon basin is under way, with the ACTO receiving technical support from the IADB, to build on knowledge regarding the multiple interactions that occur in the Amazon basin on varying scales, with emphasis on water resources.

# Knowledge

## Water knowledge management: university cooperation project for IWRM in Ecuador

Since the Water Law of 2014, the logic of "integrated water resource management by river basins" applies in Ecuador.

OiEau, thanks to the financial support of the Adour-Garonne Water Agency, has been assisting the Ministry of the Environment and Water (MAAE, ex-SENAGUA) since 2015 for the implementation of the provisions of the Law on participatory governance and water planning. The project allows, on a pilot scale, to strengthen the support to the members of the Portoviejo River Basin Council for the elaboration of the first IWRM Action Plan at the level of the Manabí Hydrographic Demarcation (DH).

Since 2020, a strategy for replicating the pilot experience has been implemented in all the sub-basins of the Manabí DH. Efforts were initially concentrated on drawing up the inventory of the Chone river sub-basin and updating the inventory of the Portoviejo river sub-basin.

In this context, a partnership between the Manabí Zonal Directorate (a decentralised service of the MAAE) and the Pontifica Universidad Catolica del Ecuador (PUCE Manabí) was created, with the support of OiEau.

PUCE Manabí is the representative of the university sector of the DH Manabí Basin and Portoviejo River Basin Councils since 2019. Thanks to this partnership, four hydraulic engineering students have completed their final year internship at the Manabí Zonal Directorate to contribute to the work of inventorying, processing and disseminating data on the drinking water and sanitation user associations of the Portoviejo and Chone river sub-basins.

In addition to the provision of updated information for drawing up the inventory of the sub-basins, the partnership has been an innovative factor in terms of the appropriation of the IWRM approach by the members of the basin councils.

This collaboration is also a first because the work of the university students contributes to the exploitation and updating of the data in the national water databases of the Public Water Register (RPA) managed by the MAAE.

In the end, the convincing results of the pilot experience have encouraged the mobilisation of stakeholders for the programming of a new cycle of internships planned for early 2021. The initiative was also presented to the MAAE at the national level and selected for the publication of an article on knowledge management mechanisms and interoperability of water information systems in an IWRM approach.

Dynamic map of RPA/PUCE data on association of water and sanitation users, collected and processed by the PUCE Manabí trainees in the framework of the partnership. Source: https://www.aquacoope.org/ecuador/

# PLANNING

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

IWRM is the appropriate response to these problems.

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

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

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

***"The current health and economic crises question the hierarchy of the different water resource management priorities. Strengthened planning, clarified governance, in association with populations and users, are today, even more than yesterday, essential."***

Marie-France TOUL,
Martinique Water and Biodiversity Committee

# Planning

## On the road to the 9th World Water Forum (WWF) in Dakar in 2022…

**The World Water Forum brings together stakeholders from the sector every 3 years under the leadership of the World Water Council. Its 9th edition will be held in Senegal in March 2022. Mr. Abdoulaye SENE, Co-President of the International Preparatory Committee, presents some of the issues at stake in this major event.**

### Water security for peace and development will be the central theme of the WWF, why this choice?

This world needs peace. Otherwise, the future of humanity is threatened. We therefore wanted to focus on water security, which is a key issue in many countries of the world. We wanted to emphasise the conflict-generating potential of sharing and protecting the resource, of multi-level governance or simply access to water. In connection with the challenges of climate change, this issue must help us to build peace and, above all, to ensure development. This is what motivated Senegal to propose this theme.

### The International Preparatory Committee for the next WWF calls for an innovative approach in its preparation. What is it?

This Forum will remain a planetary Forum, but with an African tone. We are going to create a platform for exchange on a certain number of themes, with a great diversity of actors who will thus be able to dialogue in working groups focused on specific issues. Until now, the political, citizen and thematic processes have been parallel. We believe that this was not necessarily the right way to build appropriate responses in a collaborative way.

### Why did you plan to hold a Summit of Heads of State and International Institutions on the occasion of the WWF?

Until then, the Forum did not benefit from a legitimacy that would allow the results to be taken up at the international level. This time, we want the WWF to be underpinned by a Summit of Heads of State. This will lead to a very strong Political Declaration, which will commit States and International Organisations to concrete measures. Senegal, for its part, will be able to bring these results to the level of the United Nations, and ensure that these results, built collectively, can enrich the global agenda.

### What is the Dakar 2021 Initiative, another innovation of the WWF?

We hope that between now and the Forum, development projects can be labelled in order to produce positive effects as close as possible to the people. In Africa, water needs are urgent and above all multiple. We want the dynamics of the preparation of the WWF to lead to concrete results on the ground.

*Interview carried out at INBO Morocco GA Oct 2019*

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### OiEau and the WWF

Senegal has requested the partnership of France and its President has identified OiEau as one of the French actors to be mobilized to organize and ensure the participation of France in the WEF.

In addition, the Organisation for the Development of the Senegal River (OMVS) has signed a strategic partnership with Senegal.

Together, we have adopted the principle that OiEau should support it scientifically and technically, in order to fully assume the responsibilities and missions expected of it. Through its expertise and commitment, OiEau is therefore a major player for us.

# Planning

## A plan for approaching exceptional low water levels for the international Meuse basin

The river Meuse and its tributaries flow in a cross-border basin shared by France, Luxembourg, Germany, Belgium (Walloon and Flemish regions) and the Netherlands.

As a consequence of the summer droughts experienced in the previous years since 2011, the International Commission for the Meuse (ICM) is in the process of finalising a plan for dealing with exceptional low water levels, which will be published on its website (www.meuse-maas.be ) at the end of its plenary assembly at the end of 2020.

Historical hydrological data have made it possible to analyse past low water levels since the middle of the 20th century on the basis of 5 threshold values corresponding to occurrences of 2, 5, 10, 20 and 50 years (frequent low water levels with extremely rare low water levels) and to estimate the flows that should flow into the river in the absence of any water withdrawal or discharge at 3 stations spread along the river: Chooz (FR), Liège (BE) and Lith-Megen (NL).

In a second phase, the work focused on the impacts of low water levels, on one hand on the state of the water bodies (biology, quality) and, on the other hand, on the uses (industry, agriculture, drinking water, navigation, leisure activities, etc.) with a section on the potential effects of climate change on the evolution of low water flows.

Finally, recommendations on the scale of the Meuse International River Basin District were issued: the extension and dissemination of the monitoring of low water levels coordinated within the ICM, the intensification of exchanges on projects having an impact on flows, the development of devices for continuous monitoring of the temperature of water bodies or exchanges of information on study projects concerning the potential impact of climate change.

## Including Sediment in European River Basin Management Plans


Sediment is an integral part of the river system, and the Water Framework Directive (WFD) provides the appropriate framework to manage sediment in an integrated way. However, this issue is not sufficiently addressed in river basins in many cases, as shown by the fitness check of the WFD published in 2019. The WFD Common Implementation Strategy (CIS), which is the informal cooperation supporting the implementation of the WFD, included the topic of sediment in its 2019-2021 work program, and gave to experts of its technical working group ECOSTAT the mandate to develop a CIS document on sediment management in the context of the WFD.

The current status of the CIS sediment document is that the experts involved in drafting have been nominated by European Member States and have started working with other experts, including experts from stakeholder organizations and NGOs such as the European Sediment Network SedNet. The drafting of the document began mid-2020 and completion of the document is planned by the end of 2021. Four sub-groups are working on the document, each of which includes relevant experts who will jointly produce the following chapters:

1) **Catchment Scale Analysis;**
2) **Sediment Quantity;**
3) **Sediment Contamination;**
4) **Integrated Sediment Management Planning.**

The focus will be on key messages, with references to other documents/reports for further information.

# Planning

## Cooperation between the Ebro River Basin Organization and the National Water Authority of Peru

In 2017 the National Water Authority (ANA) of Peru made a request to the Spanish Agency for International Development Cooperation (AECID) about the possibility of carrying out a Technical Assistance Mission of Experts from the Spanish Government in Planning and Risk Management of Flood Control. This task was specifically named: "Counseling to the Peruvian National Water Authority in Formulation of a Proposal for the Reconstruction of Areas Affected by the coastal El Niño".

The Peruvian Coast, especially the areas of Tumbes, Chira-Piura and Chancay-Lambayeque basins, was affected in 2017 by the presence of the hydroclimatic phenomenon "coastal El Niño", which caused serious damage to basic services and productive infrastructure on those areas. The Peruvian State needed to initiate and implement a short and medium term reconstruction process to restore, to its full capacity, basic and productive services, in an arranged, planned and coordinated manner, by all public and private institutions involved in this process. For all these reasons, they requested the aforementioned advice.

On the Spanish side, the Ebro River Basin Organization, under the Ministry of Ecological Transition from the Spanish Government, was commissioned to undertake the transfer of knowledge and the Spanish experience in flood control and prevention for the flood affected areas in Peru. A total of four highly qualified Ebro RBO specialists with extensive experience in their fields (planning, hydrology, flood control and emergency works, dam safety), were designated to carry out the Mission during September 2017 in collaboration with the Peruvian counterpart.

As a result, a complete report was subsequently prepared covering all the aspects required by the Peruvian National Water Authority to support the decision-making regarding the prioritization of actions in the restoration and improvement of flood safety after the damage caused by the phenomenon "coastal El Niño".

It has been a fruitful example of cooperation between water authorities in Peru and Spain, which has continued later on.

**María Dolores PASCUAL VALLÉS**
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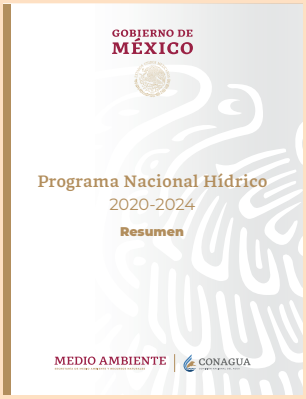
**www.chebro.es**

## Conagua's 2020-2024 National Water Programme

Mexico's National Water Commission (Conagua) seeks to re-establish itself as a technical, transparent and efficient institution at the service of the nation, responsible for administrating, regulating, controlling and protecting national waters through three main vertices: integrated water management, basin committees and technical support.

As such, for its 30th anniversary in January 2019, the Commission unveiled its plans for the 2020-2024 National Water Programme, as the central pivot underpinning water resource planning.

The National Water Programme is a special programme aimed at reducing inequality gaps, reaching sustainability and water security for the country, with a cross-cutting multi-sectoral focus, with the following vision: "A Mexico where water is the cornerstone of welfare and it is managed sustainably and in a coordinated manner with the participation of the public, institutions and government orders."



# Implementation of Integrated Water Resources Principles in China

In 2009, the Chinese Ministry of Water Resources and the French Ministry in charge of Environment signed a cooperation agreement in the field of water management.

In that context France and China launched a cooperation pilot project on the Hai River Basin in 2011. It aims at implementing Integrated Water Resources Management, water resources pollution management and ecosystems protection principles and mechanisms at the scale of river basins in China. This institutional and technical cooperation project gathers a wide range of actors from France: Seine Normandy Water Agency, Greater Paris Sanitation Authority (SIAAP), EPTB Seine Great Lakes and International Office for Water; and from China: Hai River Water Conservancy Commission, Tianjin Water Authority and Department of Water Resources of Hebei Province.

Through training sessions, on-field visits in France and China and frequent technical exchanges between French and Chinese experts, this cooperation project focused on elaborating planning documents for two pilot basins: the Zhou River Basin (2143km² - 2012/2016) and the Luan River Basin (55,500km² - 2016/now). Both basins face similar challenges:

- Quantitative issues due to hydrological context as well as overexploitation of water resources ;
- High levels of pollution of surface and underground water, from agricultural and rural domestic non-point sources and industrial and urban point sources.


Mission in China – January 2020

The main focus of this cooperation is the elaboration of structured management plans by following a precise pattern: diagnosis of the basin and collection of data, identification of the main issues, definition of objectives and elaboration of the program of measures.

In addition, the stress was put on participatory approach throughout the whole elaboration process. A coordination group for water management was set up in the Zhou River Basins and stakeholders' meetings were organized at each step of planning in the Luan River Basin.

The two River Basin Management Plans were respectively finalized in 2016 and 2019. In 2019, the HWCC produced a mid-term evaluation report of the implementation of the Zhou River Basin Plan that aimed at estimating the level of implementation of measures as well as their effect on the water resources from the action plan through bibliographical work and interviews with local stakeholders. It then identified the main achievements and weaknesses of the planning.

This practical work on the Luan and Zhou river basins on integrated water resources management provided both Chinese and French experts with valuable experience on methodologies and water management systems.

A methodological guidebook was elaborated to present the methodology and tools used in the planning process of both Zhou and Luan river basins. In addition, this experience will be enhanced through the work of the China Europe Water Platform, which aims at drawing out policy recommendations for better water management at the scale of the basin based on practical on-field experience.


HWCC's delegation visit in France - September 2019

# Planning

## Sweden's national plan for hydropower permit reviews, its biggest river governance overhaul in 100 years?

With an average yearly production of 65 TWh, Sweden is the biggest hydropower producer in the EU and hydropower satisfies roughly 40% of Sweden's total electricity demand. The negative effects on the water environment are however equally significant and hydromorphological alterations of water bodies constitute one of Sweden's most important environmental challenges.

As a response to this situation, on the 25th of June 2020, the Swedish government approved the national hydropower permit review plan. The plan sets out a clear timetable for the revision of all hydropower permits in Sweden in the coming 20 years. The review aims to ensure that hydropower operations fulfill the environmental requirements emanating from the Water Framework Directive (WFD) and Habitats Directives, while promoting a nationally effective supply of hydropower. It marks a significant departure from earlier legislation that provided permits with no time limit and strong protection against any modifications, thereby ensuring the status quo of hydropower production.

The plan is accompanied by new legislation, requiring the review of environmental provisions every 40 years, and the creation of a private fund to finance river restoration measures. The private fund is financed by the 8 largest hydropower companies and dimensioned to contribute with 50 million euro a year for 20 years. This sum is meant to cover approximately 90% of all costs - including administrative, construction and production losses - associated with the review process and required river restoration measures.

The plan furthermore intends to facilitate production capacity increases at existing large-scale hydropower stations, with studies projecting that potential measures could increase their effect of up to 3900 MW.

The installation of a fish passage, with monthly low flow, is the standard intended restoration measure at small hydropower installations and the removal of small and micro sized hydropower installations, as a restoration measure, is discouraged.

Even at this early stage, it is possible to identify several positive aspects of the plan, including the creation of a fond that finances 90% of all the costs associated with river restoration measures.

The plan also clearly specifies the government's ambition level for river restoration, opening it up to general scrutiny, and capitalizes on the possibility of combining river restoration with capacity upgrades that can add valuable flexibility to the electric system.

Some more questionable aspects of the plan are that it is set to overshoot the WFD timetable by 13 years and that the government mandates that all possibilities of exceptions provided by the WFD should be fully utilized.

The removal of smaller hydropower installations is, in addition, discouraged without any formal evaluation of the costs and benefits such measures would provide.

Finally, the plan does not treat the hydromorphological implications of increasing the production capacity at existing large-scale hydropower stations, including the risk of water quality deteriorations from increased hydropeaking.

**Peter M. RUDBERG**
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## Water management planning in Burkina Faso

Burkina Faso, located in the heart of West Africa, has been engaged in the implementation of IWRM since the late 1990s and has a National Programme for IWRM (PN-GIRE), which is part of the PNDES (National Plan for Economic and Social Development) of the Presidency. The IWRM-NP follows on from the various IWRM Action Plans implemented between 2003 and 2016. The implementation of the IWRM-NP is mainly carried out by the IWRM-PS (Permanent Secretariat for IWRM), the five Water Agencies (Cascades, Gourma, Liptako, Mouhoun and Nakanbé) and the Directorate General of Water Resources at the national level. At the regional level, the Regional Water and Sanitation Directorates and the decentralised technical services related to the water sector, in particular the rural development services, are the implementation partners.

The PNDES, which covers the period 2016 - 2020, is the country's development reference framework in which 14 planning sectors have been identified. Each of these sectors has a unique Sectoral Policy. A National Water Policy has been drawn up for this purpose, directly targeting United Nations Sustainable Development Goal No. 6: "Guarantee access to water supply and sanitation services for all and ensure sustainable management of water resources". The implementation of this policy is structured around 5 national programmes: Integrated Water Resources Management, Drinking Water Supply, Wastewater and Excreta Sanitation, Water Development, Water and Sanitation Governance.

The monitoring of this policy is organised through a steering framework, a sectoral framework for dialogue and a framework for consultation of the sector at national level. At the regional level, single regional steering committees for all five programmes ensure steering and dialogue. These monitoring frameworks involve 3 planning sub-sectors: water and sanitation, environment and urban planning. As far as water is concerned, each of the five agencies has a Water Development and Management Master Plan (Schéma Directeur d'Aménagement et de Gestion de l'Eau). Two priority Water Development and Management Plans are currently being drawn up: one for the "Samendéni-Sourou" territory in the Mouhoun basin, the other for the "Massili-Ziga" territory in the Nakanbé basin.

**Ghislain Anselme KABORE**
*Technical Advisor, Ministry of Water and Sanitation, Burkina Faso*

# Planning

## The European Water Framework Directive (WFD), a reference for non-EU Member States


The fundamentals of a management plan. © OiEau

With the "European Union Water Initiative +" (EUWI+) project, financed by the European Union, Armenia, Azerbaijan, Georgia, Moldova, Ukraine and Belarus are moving towards the main principles of the WFD. They have thus opted for integrated management to protect and share water resources with a view to sustainable development.

Austria and France are implementing this ambitious project with the Organisation for Economic Cooperation and Development (OECD) and the United Nations Economic Commission for Europe (UNECE). Thus, the Austrian Environment Agency, the International Office for Water and INBO, on behalf of the French Ministry for Ecological and Solidarity Transition, are jointly supporting the strengthening of governance and technical know-how of the various national public bodies of the water sector. By the end of 2020, 8 of the 11 pilot basins will have their first Management Plan. This cooperation allows the consolidation of expertise, institutions and consultation between stakeholders, while carrying out actions to raise public awareness.

*"The European Union's Water Framework Directive is used throughout Europe to implement water management at the level of river basins. It is a guidance document for Georgia."* Ms. Makarova - Ministry of Environmental Protection and Agriculture - Georgia.

**www.euwipluseast.eu/en**

## New model of river basin management is the key issue for any progress on SDGs in Kazakhstan and Central Asia


Kazakhstan consumes around 20 billion m3 of water, (14 billion for agriculture, 2 billion for industry and around 1 billion for municipal needs and small businesses). Water pipes losses amount to 3 billion m3. According to the country's development scenarios, demand will increase by 1% each year, i.e. 9 billion m3 by 2030. Combined with the decrease in sustainable water supply, aggravated by climate change, this could lead to a shortage of 14 billion m3 by 2030 and 20 billion m3 by 2050.

If urgent and preventive measures are not taken, such water scarcity can lead to:

- The degradation of lake and river ecosystems and related economic, security, employment and health objectives, particularly in the Balkhash basin, the Ili and Ural deltas, central Kazakhstan, the northern Aral and other aquatic and water-related ecosystems;
- strict rationing of water supply for agriculture, hydropower and industry. In addition, the population could face increasing disruptions in water supply;
- a significant increase in costs due to the need to launch new water supply sources (Reuse, desalination) and inter-basin water transfer.

In order to achieve SDG-6 and the other SDGs, it is recommended that the Government of Kazakhstan develop a State Programme for Water Resources Management for 2020-2030 with the following objectives

- reform of the national resource management system based on basin management;
- targeted recovery and preservation of water and water-related ecosystems; - sustainable access to safe water resources;
- sustainable access to safe water resources; - water saving in all sectors and at all stages of consumption;
- environmental and water security ;
- community and water user participation, education and training of specialists ;
- cross-border cooperation - with practical and mutually beneficial mechanisms.
- Development of a new water code, and new laws: on clean water, dam safety and conservation of Lake Balkhash.

It is also necessary to develop and test new, effective and practical management and cooperation mechanisms for all sectors of the state, the private sector, local bodies and the population, using the example of one river basin with transfer of experience to other basins. The Balkhash-Alakol basin has been proposed for this purpose.

**PhD Bulat YESSEKIN**
*International Expert on Sustainable Development, Climate Change and Water, Global Water Partnership for Central Asia, Caucasus and Mongolia*

# INBO as seen by...

*What I find interesting in INBO is to share our experiences and finally to try to find the right scale of decision, to exchange on our practices of democracy, on who makes the final decision and, where do the funds that will commit this final decision come from?*

*When we understand how everything works, we are more efficient, including in the internal policies of our countries. ...] It is often said that water flows, it runs, it goes everywhere, and this also applies to upstream and downstream solidarity, to those who send their waste back and those who receive it. To take a stronger image than solidarity, it is obvious that we must work with all European, and even global, partners.*

**M. TAUFFLIEB**

Loire-Brittany Water Agency
Director of Planning (France)*

*INBO has done what is essential for water management. It is to combine the various knowledge on water resources, in connection with the European Directives and their legal applications.*

*INBO members are putting into practice and promoting integrated resource management on a strategic scale, that of the basin. Hydrological, hydraulic, scientific and legal considerations, for example, are combined in a transverse way.*

*In addition, INBO promotes the organization, networking and cooperation of several stakeholders in the same country and on an international scale.*

**M. GANOULIS**

Former Special Secretary of State for Water (Greece)*

*INBO is a point of exchange between different stakeholders who have the same problems: to make decisions, which are more and more pressing in the face of climate change.*

*For that, we need qualified data, which we know how to use and share, in order to have answers really adapted to a territory and its stakes. This network therefore has the possibility of offering this sharing of knowledge and in this context, my presence here is to make space known. It's not necessarily that spatial data is not available, it's just that we don't necessarily know that it exists and how it's used.*

**Mme ANDRAL**

Expert in space hydrology
Centre National d'Etudes Spatiales (France)**

*INBO is important because it encourages the management of water resources at the level of river basins. It is an efficient and participative management because it takes into account many quantitative and qualitative aspects at this scale. This makes it possible to guarantee to each user his share of this resource, to perpetuate the use and the investments in infrastructures installed in the basin. [...] Development cannot take place without a sufficient and quality water resource. […]*

*Thanks to the network, each member, wherever they are, can therefore benefit from the experiences of other members.*

*Some countries are advanced on certain themes, others are less advanced, but this allows the exchange, knowledge and use of all the good practices of all the partners.*

**M. EL FASSKAOUI**

Director of the Souss Massa Basin Agency (Morocco)**

*The existence of INBO is very important because it enables us to share the experiences of different basin organizations, problems that we managers have and to deal with the legislation and problems we, the managers, have in our day-to-day work. We often find ourselves managing the basin with legislation that is not 100% adapted. So this kind of meeting is very important as we find colleagues who have the same or different problems. On this basis, we have the possibility to enforce European legislation or certain policies in a coordinated manner.*

**Sr ROGRIGUEZ-MARTINEZ**

Confederación Hidrográfica del Guadalquivir (Spain)*

# INBO as seen by...

*INBO is important because it is a pleasure to talk about water! We, the actors of the water world, consider that we don't talk enough about water. [...] No development problem will be solved without taking into account the problem of access to water. INBO is a network that enables people from different backgrounds, who are in different political, technical and socio-economic contexts, who all have a common concern to manage a shared resource, to talk to each other. They exchange experiences. Many have a vision of how transboundary water can or should solve problems. It is a good forum for fairly regular exchanges between water professionals whose job it is to solve the world's water problems. [...] Nothing is easy. Basin organisations exist but the difficulties are there. [...] The OSS brings the concerns of groundwater to the table. This makes it possible to raise the problems and sometimes to find solutions, and also to mobilise political and financial awareness of the need to solve these water problems.*

**M. KHERRAZ**
Executive Secretary, Sahara and Sahel Observatory (OSS)
Tunisia

*The actions carried out by INBO, with the advantages of networking, exchanging information and experiences and to collectively improve our practice of Integrated Resource Management in Water (IWRM) are very enriching.*

**Mr Puy LIM**
Autorité du Tonlé Sap - Cambodge

*For the ANA, the HRCCs (Consejos de Recursos Hídricos de Cuenca) and the CSCAs (Committees of Subcuenca), it is very important to be part of INBO, as it opens the possibility of interacting with basin organizations from all over the world, presenting their progress, their achievements and the difficulties encountered during their creation process and in their operation.*

**Adolfo TOLEDO PARREÑO**
Autoridad Nacional del Agua – Perú

*I know and have participated in some INBO meetings for almost ten years. What seems very interesting to me is that it is a network of actors. There are therefore no very strong political stakes. People come to share experience, learn and really develop knowledge. During the various round tables of the Conferences, I think that INBO should even more approach and enhance the social and economic dimensions of basin management. They should be made even more visible. Scientists should not be ashamed to talk about these aspects, because science is made with human beings and financial means are needed to develop research and projects.*

**Mme DJELLOULI**
Professor Emeritus of the University of Le Mans,
Researcher at the CNRS (France)*

*INBO is a network that brings together people who have had both positive and negative experiences. These experiences are mainly positive, and they can facilitate the accession of other countries at certain stages not yet reached.*

*Negative experiences allow lessons to be learnt and prevent people and countries from leaving in the sense that others have failed. This is important, especially for African countries... Most water resource management systems are systems that started in Europe, and on which African countries, particularly Burkina Faso, have built their own integrated water resource management (IWRM) structures.*

*Thus INBO is an organisation which, thanks to its configuration, allows "boosting" water resource management at the level of African countries, through the expertise it can provide, through the information that the network can have on the issues and the various developments in water resource management, including the search for financing. These elements are really positive for our country.*

**M. CONGO**
Permanent Secretary of the Action Plan for Integrated Water Resources Management - Ministry of Water and Sanitation (Burkina-Faso)**

*Comments gathered during EUROPE-INBO in Lahti (Finland) - 17 to 20/06/2020

**About the AGM in Marrakech (Morocco) 30 Sept-03 Oct/2020

# INBO Webinars

## A new monthly appointment

INBO Technical Secretariat launched a series of webinars in order to mobilize its members to discuss the issues raised by the current crises (health, economics and climate) as regards Integrated Water Resources Management at basin level.

This format is an appropriate response to the current health crisis, and it has met with a favourable response, with a strong growth in the number of registered participants for each session.

These monthly meetings are trilingual (French, English and Spanish) to allow a maximum number of Internet users to participate during question and answer periods.


On 15 September, the strategically important theme **"Water information systems, governance and the contribution of remote sensing: for informed water resource management at national and basin level".** There were more than 200 participants from 73 countries! The speakers shared the rich experiences of their diverse and complementary territories, addressing the needs and difficulties of access to data, the importance of having efficient Information Systems, the good practices of structuring and managing these systems in national (in Senegal) and transboundary (in the Amazon and Congo basins) contexts and the new perspectives offered by advanced remote sensing technologies, such as the use of satellite data and images for both qualitative and quantitative monitoring of water resources.

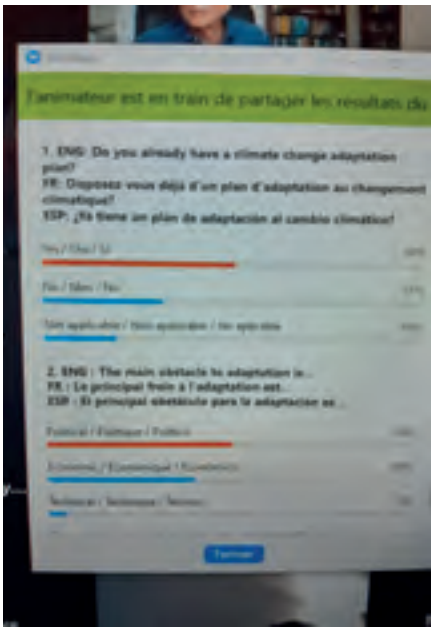
On 13 October, the **"Adaptation to climate change at the level of river basins: The cost of measures vs. the cost of inaction"** was on the agenda, and brought together 150 participants. The speakers came from the Agence Nationale des Elus de Bassin (ANEB – France), the Piracicaba, Capivari e Jundiaí Basins Agency (PCJ – Brazil), the Water Convention of the United Nations Economic Commission for Europe (UNECE) and the Organisation for the Development of the Senegal River (OMVS).

In the forthcoming months, biodiversity, groundwater, water police, basin-connected cities, water information systems (WIS), training and water professions are expected to be the next subjects of these webinars.

The precise programme and date of each webinar will be communicated a few weeks before the event. Shortly, the recordings will be available on INBO website.

*If you would like to see a particular theme addressed at these events, please send a message to* secretariat@riob.org

# INBO Webinars

The 1st webinar, on 7 July, focused on **"IWRM at basin level: a resilience factor to the global health and economic crises?"** and brought together 113 participants from 22 countries, who were able to share their respective points of view, drawn from complementary professional experiences in very different territories (from Latin America to South-East Asia, and from Africa to the Caribbean), with the main invited witnesses.

**A few key sentences from the speakers:**

- **Mr. Alain Bernard** (OiEau) thus recalled the pillars of IWRM. This inter-sectoral approach to the management of the large water cycle at the scale of river, lake and aquifer basins is still very insufficiently implemented in the world. Yet it is a factor of resilience to multiple crises: it has already shown its effectiveness and this is what led to its recognition by the Sustainable Development Objectives (indicator 6.5.1).
- **Ms. Marie-France Toul** (President of the Water and Biodiversity Committee of Martinique) stressed the importance of the governance aspect of IWRM in terms of resilience. It must allow a clear distribution of roles between administrations and a steering of priority investments. It is also essential to communicate to the population on the functioning of the large water cycle, its link with the small water cycle, the difficulties encountered and the solutions implemented: the understanding and adherence of the population to the water policy in place is also an element of (social) resilience that should not be neglected.
- **Mr. Khatim Kherraz** (Executive Director, Sahara and Sahel Observatory) insisted: it should be obvious to all policy makers that integrated water management (surface and groundwater) is a prerequisite for access to this resource, which is essential for basic hygiene measures in the fight against the spread of the pandemic. A political commitment is urgently needed to ensure access to the resource, which is still very inadequate in many African countries. So far and by some miracle, the continent has been relatively untouched by the COVID 19 pandemic, but we can no longer be content to hope for miracles in the future.

The upcoming webinars programme is available in the "INBO webinars" section of the "Activities" menu on the website **www.riob.org**

# INBO Handbooks

## To guide the stakeholders in resource management


The collection of INBO Handbooks was initiated in 2009. Written with the Network members, these documents are addressed to decision-makers of the water sector and to 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.

*The INBO Handbooks can be downloaded, in different languages, at the address*

**www.riob.org/fr/documents**

## Two new titles in preparation

### Two other titles are currently being edited:

### Cities - basins dialogue: INBO-IWA methodological guide on cities connected to their basin

The majority of the world's population lives in cities and there will be nearly 6 billion of us in 2050 in urban areas. This growth creates many challenges to make the city sustainable and implies putting collective intelligence and action at the service of water security and the environment.

This reflection on sustainable cities is already ongoing but is still treated sector by sector and not as a whole and focused on urban specificities, without achieving the required optimisation in terms of costs, water resource resilience, biodiversity conservation, etc....

It is therefore urgent to encourage collaborative actions to reconciliate the technical and natural cycles of urban water. All stakeholders must commit themselves to identify and implement adapted and sustainable solutions in line with the city-basin governance.

The International Water Association (IWA) and INBO have decided to design this guide, a decision support tool to strengthen the connection and integration of the city with its river basin.

Through practical cases, testimonies and recommendations, this guide will illustrate how the "urban stakeholder" can and must play an active role in the protection of the resource, and thus reconnect it to its basin through its city.

The aim of this guide is to promote the concept of "Basin-Connected Cities" through the improvement of the dialogue between cities and basin organisations, based on good practices of collaboration used between cities (urban water services in particular, among others) and basin organisations.

### The Water Police

This handbook will deal with the issue of Water Law Enforcement (regulation of authorizations for abstractions / discharges, controls, procedures, administrative and legal organization, etc.).

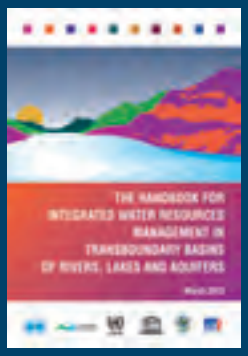
This handbook is intended to present the main administrative and legal processes of the water police, its organisation at the country and basin level, the required competences, commissioning and swearing-in, controls, sanctions and appeals.

Like the other titles of the INBO Handbooks series, it will be based on actual experiences and know-how acquired in countries and basins around the world and each topic will be accompanied by concrete examples of implementation and achievement.

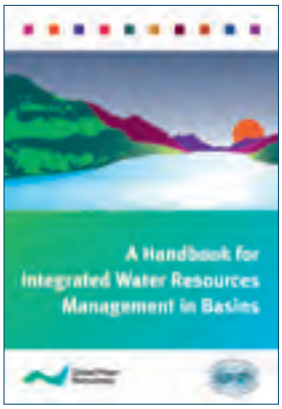
Initially edited and published in English and French, these handbooks will be presented during the 9th World Water Forum of Dakar in March 2022.

# INBO Handbooks

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



Handbook for Integrated Water Resources Management in Basins



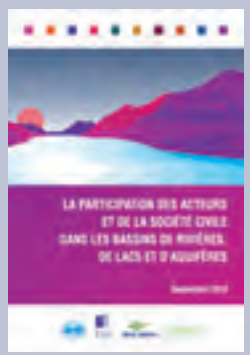

The Handbook on Water Information Systems. Administration, Processing and Exploitation of Water-Related Data

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

Financing Climate Change Adaptation in Transboundary Basins. Preparing Bankable projects

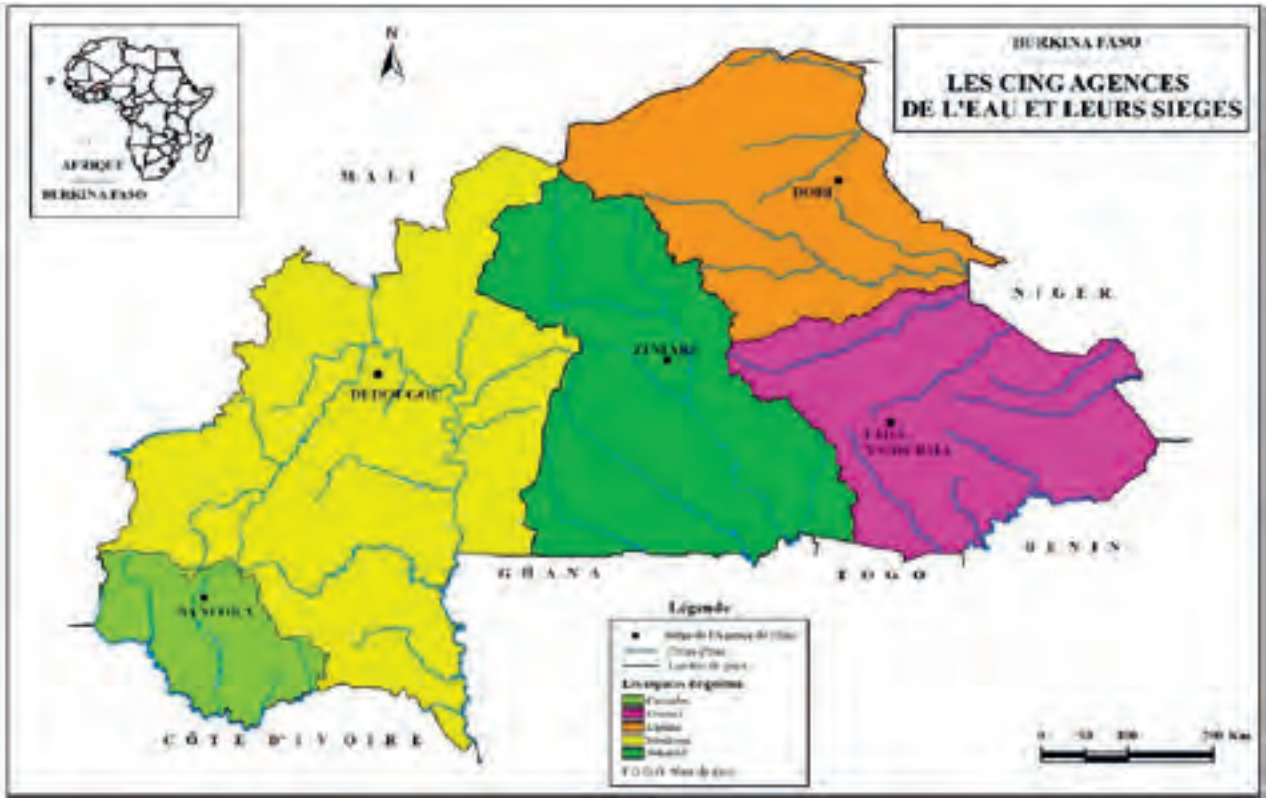
Water and climate change adaptation in transboundary basins: Lessons learned and good practices

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



Toward a Joint Management of Transboundary Aquifer Systems

# In their own words




**INBO's vocation is to support the implementation of Integrated Water Resources Management (IWRM) at the level of river basins, lakes or aquifers, both national and transboundary. The implementation of IWRM requires the establishment of governance bodies, detailed knowledge of the areas concerned through the collection of data and information, the establishment of action plans, and finally the provision of sustainable funding to enable all these steps to be carried out successfully and to ensure the success of the approach.**

**Throughout the pages of this issue of INBO's newsletter, INBO members have shared with us their experience feedbacks, varied in their approaches, a diversity which depends on the situations they have to face on their territories.**

**In conclusion, we give the floor to Mr. Niouga Ambroise OUÉDRAOGO, Minister for Water and Sanitation of Burkina Faso, to present to us the IWRM approach implemented in his country and some significant results.**

## What is the situation for water in Burkina Faso in the context of the health crisis?

The health crisis is evolving in a generally uneven manner, but the situation seems to be under control, with a low number of daily contaminations, no doubt thanks to the restrictive measures taken from the outset, such as the closure of markets and places of worship or the banning of festive gatherings.

Social measures were also quickly taken, for example through a subsidy from the National Office for Water and Sanitation (ONEA) to the most destitute populations to provide them with a drinking water supply of at least 8 $m^3$. Attempts to subsidise rural areas have been more complicated to implement, given the diversity of actors and the as yet unfinished organisation. The population has also been made aware of the uses of water for hygiene and sanitation purposes; a wide dissemination and technical improvement of hand-washing facilities has been promoted, with positive and appreciated effects.

## Beyond the health crisis, what are the major challenges you face for the future?

One of our first concerns is a better knowledge of our resources, both groundwater and surface water. It is indeed essential to know the withdrawals and the medium and long-term constraints. To this end, with the support of the World Bank, we have initiated a major project, with the main component being the mapping of the country's water resources, from which we expect a lot to facilitate planning tasks.

Secondly, it is a question of better explaining to users that water has a cost, particularly a social cost, with impacts on health and quality of life. All hygiene measures require the availability of water: this is not always understood. To this end, the government has issued a decree on the delegation of the public water service. Today Burkina Faso has more than 60,000 human-powered water pumps, currently being upgraded through delegated management, on the basis of a contract and specifications with the State. The measure, which is gradually being implemented, is intended primarily for the rural environment, with a preference for an inter-municipal (associated municipalities) approach, as the management only operated by town halls has shown its limitations. The regulatory instruments exist, the cost is assumed with the help of several partners, for this relatively innovative approach for our country.

Finally, the different nexuses. Water is used and secured with other partners, so that all national commitments (sustainable development, constitutionalized right to water, etc...) are met. Water must be linked to health, education and social services. It is also necessary to deconcentrate water services as much as possible in a logic of subsidiarity. To do this, the State trains communal technical agents to make them available to the rural environment so that they can better manage the facilities.

## What is the current status of IWRM, an important and advanced subject in Burkina Faso, a country regularly considered as one of the melting pots of the subject, with both national and transboundary basins?

Today, we have a definite lead over other countries, but we must not be satisfied with this and keep our ambitions.

IWRM at national level is beginning to take hold, we are beginning to make all users better understand their responsibility for water. An international colloquium was planned on these issues, the organisation of which has been complicated by the pandemic. For example, industrial taxpayers, such as the mining industry, which have to pay according to their water consumption, now accept these payments, which opens up the possibility of moving on to other components of water payment: polluter pays, modifier pays. Above all, we would like to see a better understanding of the issue of river basins and water agencies. In a water-stressed country, it must be made clear that everyone draws from the same resource. A good understanding of both the hydraulic works (surface water storage, groundwater abstraction) and the resource is essential to provide a scientific basis for management, and to avoid that an abstraction in one place generates a deficit or loss of value elsewhere. Many of the basin agencies have not yet finished setting up all the SDAGE-type instruments (master plans for water development and management). OiEau is helping us a lot and the subjects are progressing at our own pace.

At the international level, much remains to be done. Management spaces exist, with cross-border basin authorities (Volta with 6 countries, Niger with 9 countries). All these instruments still need to improve their level of influence, particularly for users, with investment programmes and projects capable of safeguarding and protecting the basins (floods, water stress, management of delicate uses such as gold panning or even agriculture, etc.). More Community policies are still to be implemented. Work is being strengthened, particularly in conjunction with ECOWAS (Economic Community of West African States), with a view to greater integration.

It must be acknowledged that Burkina Faso, because of its hydrographic situation, does not have a strong influence in these bodies, with relatively small rivers, obviously outside the Niger catchment area.

The search for partnerships, training, technical support and capacity development remains essential for Burkina Faso. The work started 5 years ago is continuing, with a view to building an organised, structured and visible water sector, at the service of the socio-economic development of our country.

Interviewed on 23 October 2020

See also the article on water management plans in Burkina Faso on page 46.

# Agenda

**IWA World Water Congress & Exhibition**
9-14 May 2021
Copenhague, Denmark

**17th IWRA World Water Congress**
12-16 September 2021
Daegu, South Korea

**26th Conference of the Parties (COP26) to the Climate Convention (UNFCCC)**
1-12 November 2021
Glasgow, Scotland, United Kingdom

**9th session of the Parties to the UNECE water Convention**
29 September - 1 October 2021
Tallinn, Estonia

**2nd International Conference "Water, Megacities and Global Change"**
December 2021
(exact dates to be determined)
Paris, France

**9th World Water Forum**
21-26 march 2022
Dakar, Senegal

**IUCN World Conservation Congress**
dates to be determined
Marseille, France

**15th Conference of the Parties (COP15) to the Convention on Biological Diversity (CBD)**
dates to be determined
Kunming, China

# The themes of our next webinars

See the dates on the website
ww.riob.org

**Enforcing regulations in the water sector: the interest of a water police**

**Capacity building: training to improve water management**

**Quenching thirst: investing in non-conventional water resources**

**Preserving biodiversity: no ecological security without water security**

**Cooperative water resources management in transboundary basins**

**Groundwater: sound management of a precious and invisible resource**

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