

INBO'S 30TH ANNIVERSARY INBO 12TH WORLD GENERAL ASSEMBLY REPORT

WATER RESOURCES AND CLIMATE CHANGE: HOW CAN BASINS MANAGEMENT BE MORE RESILIENT?

October 6th - 10th 2024 Bordeaux, France

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SUMMARY

I. Introduction The Transfer of the INBO Presidency Workshops Action time! Projects	3 4 5 5
II. High-level session on water resource management	6
A. Financing water resource management at basin level	6
B. Agriculture and water resources management at basin level	7
III. Thematic sessions	8
1. International and transboundary cooperation for basin management	8
2. The dual challenge of restoring and maintaining water quality	9
A. Good ecological status of waters	9
B. Transboundary cooperation and water quality management	10
C. Agriculture and water quality	10
3. Water scarcity: planning and tools for quantitative management of water resource at basin level	11
 4. Tools and measures for adapting to climate change A. Reconciling the natural and urban water cycles: basin-scale strategy	12
for wastewater reuse and other non-conventional water resources	12
for water security B. Data and information for climate change adaptation in basins C. Integration of Nature-based Solutions for climate change adaptation	13
in river basins	13
5. Meeting the challenge of climate change adaptation: the interest of a sound basin governance	14

IV. INBO in brief







16

I. Introduction

The 12th General Assembly of the INBO (International Network of Basin Organizations) stood out as a very special edition: the celebration of INBO's 30th anniversary in Bordeaux, coinciding with the 60th anniversary of France's Water Law, which led to the creation of Water Agencies responsible for basin management.

This Assembly brought together representatives from national administrations, basin organizations (both national and transboundary), technical institutions, regional



Geographical Origins of Represented Organizations

commissions, funding agencies, United Nations agencies, and other key stakeholders interested in implementing Integrated Water Resources Management (IWRM) at the basin level.

INBO had the pleasure of organizing this edition in partnership with the French Water Agencies (particularly the Adour-Garonne Water Agency), the Nouvelle-Aquitaine Region, the French Biodiversity Agency, and the French Ministry of Ecological Transition, Energy, Climate, and Risk Prevention.





Basin management is highlighted as a political priority by the Senegal's Minister of Hydraulics and Sanitation, Dr. Cheikh Tidiane Dieye, representing the Senegalese copresidency of the 2026 United Nations Water Conference. The Presidency of the INBO transferred: From His was Excellency Nizar Baraka, Minister of Equipment and Water of Morocco, To Her Excellency Agnès Pannier-Runacher, Minister of Ecological Transition, Energy, Climate, and Risk Prevention of represented by Ms. France. Barbara Pompili, Special Envoy of the French Presidency for the One Water Summit and Special Advisor on International Affairs at the General Secretariat for Ecological Planning.



Transfer of the INBO World Presidency from Morocco (Mr. Nizar Baraka) to France (Ms. Barbara Pompili)

The Transfer of the INBO Presidency



Speech by H.E. Nizar Baraka

"This General Assembly represents a significant moment as it coincides with the 30th anniversary of the INBO. It marks three decades of tireless work during which the INBO has developed and implemented activities, projects, and initiatives to support basins and promote integrated water resources management at their scale."

Speech by H.E. Ms. Agnès Pannier-Runacher



"IWRM allows for better coordination of uses, improved optimization, resource and better preservation of ecosystems. Thanks to the INBO, we can connect basin management organizations and thus better share knowledge and expertise. All this serves a single goal: the sustainable management of our water resources. in the interest of our citizens."

Workshops

Improving the coherence of water and biodiversity policies, from cities to basin: This workshop aimed to strengthen the coherence of water and biodiversity policies by bringing together experts to exchange governance practices and implementation measures across various levels. Following an introduction on European and local challenges, the first session focused on the role of stakeholders (public, private, citizens) in water and biodiversity management. The second session explored the types of measures (methods, tools, financing) that can link the two themes. European and international case studies illustrated the discussions.

Water Governance GOVAQUA: The GOVAQUA workshop brought together over 80 experts to share insights on innovative water governance practices and the evaluation of governance systems. Key topics included the development of the GOVAQUA evaluation tool and participatory and digital solutions to enhance water resilience in Europe. Interactive discussions allowed participants to share feedback and practical applications for sustainable water resource management.

Action time!

The new INBO Action Plan, adopted during the statutory session of the General Assembly, includes three major thematic priorities and four action levers at the basin level:



Plan d'action 2024 - 2027

Projects

Peer-to-Peer ("Support for Basin Organizations"):

As part of this project, funded by the Directorate-General for International Partnerships (DG INTPA), the event facilitated the identification of the most relevant partner duos for experience sharing among national and transboundary basin organizations worldwide. SpongeWorks: This project, funded by the European Union and led by the Gottfried Wilhelm Leibniz University of Hanover and Deltares, launched its call for proposals during the Assembly. The call is aimed at associated regional authorities and basin organizations interested in developing sponge measures and strategies in their territories. Winners can receive up to €100,000 in support.



Partnership Agreement Signed: On October 7 in Bordeaux, a partnership agreement was signed between INBO and ANBO to implement the Peer-to-Peer project. Apply here: https://ow.ly/ZUOz50UgMHS





II. High-level session on water resource management

A. Financing water resource management at basin level

With: the Ministers in charge of water in Ivory Coast and Benin, the Special Envoy for Water from Finland, as well as the <u>Global</u> <u>Commission on the Economics of Water</u> (GCEW), the World Bank, UNESCO, and the European Commission (DG INTPA).





Mr. Henk Ovink, Executive Director, Global Commission on the Economics of Water



"Looking at the economy through the lens of water, and not water through the lens of the economy."

SOLUTIONS

Various proposed financing mechanisms:

- Combination of national and external financing: For instance, Ivory Coast's legislation establishing taxes and public subsidies, combined with international cooperation funding.

- Public and private funding synergies: The EU's <u>Global Gateway</u> initiative, leveraging public spending to attract private capital and bringing together actors from economic sectors and civil society. According to the <u>World Bank</u>, the water sector could emulate the energy sector's success in using public funds to draw private investments.

- Partnerships: Establishing collaborations between the European <u>Commission</u> and financial institutions like the World Bank.

Sustainable financing mechanisms: Water usage fees and adaptive pricing based on the "polluter-pays" or "userpavs" principles, ensuring organizations river basin have sufficient financial autonomy fulfill their mandates. to

• Cross-sectoral financial mobilization: Expanding beyond the water sector to engage other sectors reliant on water resources, as Finland advocates using the Vesijärvi Lake Foundation as an example.

• Integration into broader policies: Embedding water management financing into foreign policy, development policies, and peace and stability initiatives, as Finland demonstrates.







• Strengthening scientific knowledge: UNESCO's International Hydrological Programme emphasizes the need for financing not only large hydraulic infrastructures but also scientific research to improve water management at basin scales, especially transboundary basins.

B. Agriculture and water resources management at basin level

With: Vice-Ministers in charge of water from China and Armenia, Secretary of State of Spain, FAO, IW:LEARN.



Mr. Hugo Morán Fernández, Secretary of State for the Environment, Ministry of Ecological Transition and Demographic Challenge, Spain.

"To adapt to climate change, we must rethink the water concession rights."

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• Deploying technological and technical solutions (more efficient irrigation systems, agroecological practices, water recovery in aquaculture, wastewater reuse, and more broadly circular economy in agriculture), as seen in Spain and Armenia with the support of subsidies for local initiatives, and as recommended by the IW:LEARN project, is part of the solution, but only part.

• Planning and framing (through legal, institutional, governance frameworks, and standards) efforts to reduce water consumption in agriculture at the state and basin scale will also be necessary for a collective commitment from all water users. China, for example, has introduced water consumption caps at these levels and controls the amounts of water withdrawn to improve water use efficiency.

• Integrating regional tools and methodologies (such as those developed for the implementation of the Water Framework Directive - WFD, applicable well beyond EU countries, as exemplified by Armenia) into national policies and basin plans, as well as recommendations from competent UN agencies (such as the FAO, which has produced 18 guidelines for sustainable water resource management across agriculture, forestry, and fisheries sectors) to limit the negative impact of agriculture on water quality and ensure a balance between water supply and demand for agriculture.

• Strengthening water and soil databases and information systems: this knowledge is an essential element for establishing a common diagnosis of the territory and determining the evolution of agricultural management.

III. Thematic sessions

1. International and transboundary cooperation for basin management

With: Organization for the Development of the Senegal River, International Commission for the Protection of the Danube, Nile Basin Initiative, Secretariat of the Mekong River Commission, Binational Autonomous Authority of Lake Titicaca, International Commission for the Protection of the Rhine, Adour-Garonne Basin Committee, International Boundary and Water Commission between Mexico and the United States.



Dr. Florence Grace Adongo, Executive Director, Nile Basin Initiative (NBI)



"Rivers and lakes still offer untapped potential. Most African Basin Organizations remain institutionally weak, financially challenged, and are highly dependent on donor funding."

SOLUTIONS

• Create and strengthen the legal and institutional frameworks for cooperation in transboundary basins. These should be based on customary law, major international conventions (1992 and 1997 Water Conventions), and relevant models that actor networks like RIOB help identify and adapt to specific basin needs (sophisticated frameworks, like the Senegal River Development Organization's, are not transposable everywhere).

• These frameworks should ensure solidarity, equitable and reasonable sharing of water resources and benefits derived from hydraulic infrastructures, respect for the no-harm principle, and collaboration between riparian states of a basin.

 Share data via information and alert systems to build trust among riparian states (e.g., Mekong River Commission).

• Jointly plan long-term objectives, measures (even hydraulic infrastructures), and necessary means for implementation with tangible benefits for riparian populations (e.g., the US-Mexico IBWC/CILA, «Rhine 2040» program adopted in 2020 with measurable objectives by sector to reduce negative externalities from navigation and industries, with an intermediate review every six years).

• Strengthen sustainable financing mechanisms for transboundary basin organizations for their daily operations and investment in resilient hydraulic infrastructures.

Develop participatory management involving raise programs users, educate populations the importance preserving awareness. and on of transboundary Titicaca). aquatic ecosystems of these basins (e.g., Lake

2. The dual challenge of restoring and maintaining water quality A. Good ecological status of waters

With: Flemish Environment Agency, Itasy Region of Madagascar, Yellow River Hydraulic Research Institute of the Chinese Ministry of Water Resources, Ministry of Environment Protection and Agriculture of Georgia, Federal Ministry of Agriculture, Forestry, Regions and Water Management of Austria, Artois-Picardie Water Agency, Lake Atitlán Basin Authority of Guatemala.

Mme Voahangy Ravaonorolala, Head of Infrastructure and Development Division from the Itasy Region of Madagascar



"The quality of governance is the counterpart to performance because, in addition to ensuring coherence, it is the foundation of legitimacy necessary for all development initiatives. It was from this shared observation that we began working collectively on sustainable solutions related to the importance of biodiversity and the ecological status of the lake."

SOLUTIONS

• Strengthen water monitoring by increasing the number of in-situ control stations (e.g., in Georgia) and covering biological parameters (e.g., bioindicators) in addition to physicochemical parameters. Understanding the factors determining ecological status and mapping resource conditions help raise awareness of pollution and the need to restore water quality.

Plan and implement nature-based solutions (e.g., wetland restoration recommended by the European Commission). In Austria, these contribute simultaneously to ecological good status, phosphorus reduction, and flood risk reduction. In China, the Yellow River strategy includes measures to preserve downstream wetlands to improve water quality and maintain a sufficient flow for equitable resource sharing.

• Involve all stakeholders in planning (including private sector and research actors, e.g., Flemish Environment Agency's "living lab") to encourage experience exchange and innovation.

• Prioritize massive investment in wastewater collection and treatment (e.g., Austria) to improve the ecological status of water.

B. Transboundary cooperation and water quality management

With: Canada-USA International Joint Commission, International Boundary and Water Commission USA-Mexico, Tanganyika Lake Authority, India-Bangladesh River Joint Commission, Orange-Senqu River Commission, Save Basin International Commission, Fisheries Organization of Lake Victoria.



Dr. Maria-Elena Giner, Commissioner (USA Section), International Boundary and Water Commission, USA and Mexico.



"What is really unique in our organization is that we jointly manage dams, which are operated by Mexicans and Americans."

SOLUTIONS

 Include provisions for water quality preservation in cooperation agreements, such as the obligation to take all necessary measures to prevent, control, and reduce water pollution (1992 and 1997 Water Conventions, agreements in the Rhine and Congo basins).

• Improve water quality monitoring by harmonizing parameters among riparian states of the same transboundary basin (e.g., Orange-Senqu) and enhancing coordination on data collection, sharing, and analysis (e.g., Save River).

Develop and implement strategic action plans to combat pollution at the basin level (e.g., Lake Tanganyika with EU support), including on-the-ground measures like nature-based solutions (e.g., measures in the Congo basin to combat deforestation and soil erosion and their impacts on water quality).

C. Agriculture and water quality

With: Perum Jasa Tirta II for the Citarum River in Indonesia. Martinique Water Office, Organization for the Development of the Senegal River, Lake Victoria Basin Commission. Portoviejo Agricultural College Ecuador. Seine-Normandie in Basin Committee France, Food in Agriculture Organization (FAO). and

Mrs. Amani Alfarra, Land and Water Officer, FAO



"By 2050, 60% more food will be needed, so we need to improve food security and water quality. Food security has increased thanks to fertilizers and pesticides, but these advancements have come with a cost."

SOLUTIONS

 Analyze monitoring network data to better target areas for reducing agricultural inputs (Seine-Normandie).

 Support agricultural sector actors through farmer training and financial support for deploying more sustainable practices: crop diversification, organic farming, and agroecology (Martinique), especially in vulnerable areas to agricultural pollution, with stricter regulations.

• **Develop integrated action programs** that take into account population needs and agricultural sector constraints.

• Promote **nature-based solutions** such as hedgerows, cover crops, and no-till farming (Seine-Normandie), **wetland protection** (Martinique), and the use of aquatic plants to improve water quality (Citarum).

3. Water scarcity: planning and tools for quantitative management of water resource at basin level

With: Scientific Information Center of the Interstate Commission for Water in Central Asia, Sahara and Sahel Observatory, Bordeaux Metropolitan Water Authority, Adour-Garonne Water Agency, Murray-Darling Basin Authority, Hydrographic Confederation, Júcar Piracicaba, Capivari, and Jundiaí River Basins Consortium. Guanabara Committee Bay Basin in Brazil.

Mr. Andrew McConville, CEO, Murray-Darling Basin Authority, Australia.



"In the face of wicked problems,

if a group of people can find things they agree on and focus there, that's where collaboration begins. At the MDBA, we are taking our purpose forward and want to see the regulatory outcomes of the Basin Plan achieve rivers for generations."

SOLUTIONS

• Reduce water demand by imposing quotas and appropriate water pricing, monitoring extraction points, adopting water-efficient practices and technologies (e.g., sensors, telemanagement), renewing water supply networks, and conducting leak detection campaigns (e.g., Bordeaux Water Authority's «Water Ambassadors»).

• Develop non-conventional water resource supplies: reuse of treated wastewater, industrial water recycling (including closed-loop systems), rainwater collection and storage, and agricultural drainage water recycling (e.g., Sahara and Sahel Observatory), possibly desalination (with attention to limiting energy and environmental costs).

• Use Geographic Information Systems (GIS) and hydrological modeling to analyze and track water resources, water balance, and precipitation and extraction trends.

• Prevent scarcity through integrated water resource management (IWRM) planning for the long term (e.g., Murray-Darling Basin Plan), involving local stakeholders in basin committees (Piracicaba, Capivari, and Jundiaí in Brazil, Adour-Garonne in France), and preparing drought prevention plans and green and grey infrastructure, considering climate change impacts (e.g., on reservoir filling and support during low water levels).

 Manage exceptional shortages through alert systems, emergency plans, backup supplies, special extraction permits, and water truck deliveries (Adour-Garonne).

4. Tools and measures for adapting to climate change

A. Reconciling the natural and urban water cycles: basin-scale strategy for wastewater reuse and other non-conventional water resources for water security

With: Ministry of Ecological Transition and Demographic Challenge of Spain, Water and Energy Agency of Malta, Ministry of Territorial Administration and Infrastructure of the Republic of Armenia, Permanent Joint Technical Commission for Nile Waters of the Ministry of Water Resources and Irrigation of Egypt, Rhône-Méditerranée-Corse Water Agency, Bouregreg and Chaouia Hydraulic Basin Agency of Morocco, Intermunicipal Consortium of the Piracicaba, Capivari, Jundiaí River and Basins in Brazil.

Mrs. Dolores Pascual Vallés, Director General of Water, Ministry of Ecological Transition and Demographic Challenge, Spain.



"Desalination has been used in Spain for decades and it has been a fundamental element in the Canary Islands, for example, particularly to provide enough water for tourists."

SOLUTIONS

• Strengthen the role of the state in determining ambitious political goals for wastewater reuse (and more broadly, non-conventional water resources), in steering research and developmenttoimprovetechniquesandreducecosts, and infinancing their implementation.

• Establish adequate regulatory and governance frameworks to address health risks posed by wastewater reuse and better coordinate actions related to municipal water and sanitation service management with those related to water resource management at the basin scale.

Develop and implement a strategy for deploying non-conventional water resources at the basin scale, involving all stakeholders. Adopt a «water mix» approach, complementing surface water and groundwater resources with the range of non-conventional water resources: treated water reuse (agricultural irrigation, park and garden irrigation, industry; example of the Rhône-Méditerranée-Corse basin, with 250 ongoing projects worth 26 million euros), desalination (example of Spain and Morocco), and rainwater collection and storage (with examples from the Piracicaba, Capivari, and Jundiaí basins in Brazil).

B. Data and information for climate change adaptation in basins

With: NASA, Bangladesh Water Development Board, Ministry of Ecological Transition and Demographic Challenge of Spain, Water and Energy Agency of Malta, Ministry of Territorial Administration and Infrastructure of Armenia, Permanent Joint Technical Commission for Nile Waters of the Ministry of Water Resources and Irrigation of Egypt, Gambia River Basin Development Organization, Binational Autonomous Authority of the Titicaca Lake, Desaguadero River, Poopó Lake, and Copaisa Salt Flat System, Vesijärvi Lake Foundation in Finland, Bordeaux Port Authority, Deltares.

Mr. Perry Oddo, Associate Program Manager, Water Resources Program, National Aeronautics and Space Administration (NASA).



"Most people don't care for where the data comes from, they care mainly about what they can do with the data."

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• Combine the benefits of traditional monitoring networks consisting of in-situ stations with those of virtual monitoring stations made possible by satellite technologies (NASA and CNES satellite imagery and data).

• Decentralize data production and storage closer to the field while centralizing access to data through metadata portals (example of the STARS4Water project, listing 300 databases).

• Develop the analysis, exploitation, and enhancement of data (visualization tools, Geographic Information Systems, modeling) to improve water resource assessment, identify key issues (such as eutrophication in the Titicaca Lake basin), and select measures with the best cost/benefit ratio.

• Raise awareness among policymakers and financial authorities about the importance and profitability of investing in data and information for adaptation, which determine the relevance and effectiveness of actions taken (including the choice of large hydraulic infrastructure).

C. Integration of Nature-based Solutions for climate change adaptation in river basins

With: International Office for Water, French Office for Biodiversity, Adour-Garonne Water Agency, New Aquitaine Region, Twente University, Bangladesh Water Development Board, Inter-American Development Bank.

Mr. Andres Blanco, Senior Specialist in Economics, Water, and Sanitation, Inter-American Development Bank (IDB).



"Nature-based solutions can contribute to equitable and sustainable development

in Latin America and the Caribbean. To increase their relevance, we need better coordination between national and subnational governments, public services, civil society, and the private sector." • Plan and implement action programs coordinating the large-scale implementation of NbS (Nature-based Solutions) at the basin level, to ensure the achievement of a critical mass and benefits comparable (and ideally combined) to those of grey infrastructure in all types of environments and territories (European examples of the projects SpongeWorks, NATALIE, NBRACER, and Life ARTISAN, with the latter, led by the French Office for Biodiversity, having 10 pilot sites in France; example in Bangladesh of the mangrove planting program).

• Better quantify (with evaluation criteria and feedback) and raise awareness (among policymakers and citizens) of the multiple benefits derived from NbS.

• Test different economic models and highlight the financial interest in investing in NbS, whose estimated cost is 5 times lower than the cost of inaction and the aid required to compensate for losses and damages caused by the impacts of climate change.

• Develop an appropriate legal framework inspired by existing regulations (example of Peru cited by the Inter-American Development Bank - IDB).

5. Meeting the challenge of climate change adaptation: the interest of a sound basin governance

With: Seine-Normandie and Rhône-Méditerranée-Corse Water Agencies and Loire-Brittany Basin Committee the in France, Okavango Basin Permanent Water Commission - OKACOM, Amazon Cooperation Treaty Organization - ACTO, Po River Basin Authority, Italy, National Water Resources Institute of International Cuba. Center for Economic and Technical Cooperation and Exchange of the Chinese Ministry of Water Resources, U.S. State Department.

Mrs. Sandrine Rocard, Director General, Seine-Normandie Water Agency, France.

"Participatory governance is essential to exercise responsibility & solidarity



through the basin, to have a transversal vision, to share the same diagnosis across sectors within the basin, to reduce conflicts, and to build bridges between policies"



SOLUTIONS

• Promote the river basin as the most relevant scale for climate adaptation planning and governance: the mandate of basin organizations operates at this natural geographical scale. Administrative geography is also considered with the involvement of local authorities in the associated basin committees.

• Create and strengthen these basin committees to ensure participatory governance of climate change adaptation. These bodies bring together all stakeholders (in France: elected officials, government representatives, environmental NGOs, and water users: industry, agriculture) to reconcile divergent interests, hold actors accountable, and encourage solidarity.

• Adopt an intersectoral approach to climate adaptation at the basin scale, addressing the concerns of all sectors (example of the Amazon Cooperation Treaty Organization, covering Integrated Water Resources Management, biodiversity preservation, and sustainable economic development across several management sectors).

• Enrich data valuation tools with hydro-climatic projections to support climate adaptation governance.

• Governance and investments in adaptation actions come at a cost, which must be covered by establishing sustainable financing mechanisms (the principle of "water pays for water," whereby water users fund its management).



IV. INBO in brief

Year of creation: 1994

Status: Non-profit association under French law

Main Objective: Support all initiatives for the organization of Integrated Water Resources Management (IWRM) at the river basin level, whether national or transboundary, to reconcile economic growth, social justice, environmental protection, water resource conservation, and civil society participation.

Organization: This knowledge exchange platform is managed by its President and the Liaison Bureau, which organizes the permanent technical Secretariat provided by the International Office for Water (OiEau). Its General Assembly takes place every three years. Since the 2019 General Assembly, Morocco has held the RIOB Presidency, through 2024.

Actions: Experience exchange, partnerships, and events (with the OECD on water governance, with the UNECE on transboundary cooperation and climate adaptation). Providing the expertise of the permanent technical Secretariat (technical and institutional support, training, data, and information systems).

Network: 192 Member Organizations (river basin organizations, government agencies responsible for water, bi- or multilateral cooperation organizations) and Permanent Observers in 88 countries.

Implementation

8 regional networks to strengthen the ties between neighboring Member Organizations, develop collective activities in the region, and organize joint initiatives of general interest.



SAVE THE DATE

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