

Editorial



Katowice - Poland - December 2018



Zaragoza - Spain - November 2018



Astana - Kazakhstan - October 2018



Seville - Spain - October 2018



Brasilia - Brazil - March 2018

www.inbo-news.org

Here is our new issue of “**INBO Newsletter**”. You will find a large overview of projects implemented by our network members or partners. This compilation of ongoing initiatives confirms the vitality of our network and the positive impacts of the river basin approach around the world.

Indeed, we believe - and many examples presented here demonstrate it - that this river basin scale is relevant to implement effective water resources management in our geographical, climatic, political and cultural contexts so diverse. It allows going beyond the internal administrative boundaries of each country, but also across borders between countries.

Basin management contributes to the achievement of the Sustainable Development Goals (which now explicitly take it into account), and above all provides answers to the real and daily needs of all users who share the same water resource.

2019 is an important year for INBO, with the holding of our new **World General Assembly**, from 30 September to 3 October in Marrakech. INBO presidency will be transmitted from Mexico to Morocco. **We hope that many of you will participate!**

You will find any useful information on our website:
www.inbo-news.org.

Good luck to all in your basins!

Dr. Eric TARDIEU
INBO General Secretary

News of the Network

International Network of Basin Organizations (INBO)

INBO has adopted a new work program for 2019 - 2021



The Permanent Technical Secretariat has drafted an ambitious work program in preparation for INBO World General Assembly that will take place in Marrakech (Morocco), from 30 September to 3 October 2019. It will be presented and submitted to the Network Members for adoption during the statutory session of the Assembly.

The overall objective of this work program is to strengthen basin management, which is developing and relying on structured organizations with the

necessary skills, knowledge and funding for integrated and sustainable management of water resources and associated aquatic ecosystems.

It is essential to reaffirm the relevance of the concept of Integrated Water Resources Management (IWRM) and its operationalization on the basin scale. This is INBO's main task. Indeed, all the major processes that punctuate the life of the development sector recognize the need to meet the challenges of our time with a holistic approach to the problems to be solved and to their solutions.

This is the case, of course, with the Sustainable Development Goals (SDGs), the Sendai Framework for Action for Disaster Risk Reduction or the international climate negotiations (Conference of the Parties to the United Nations Framework Convention on Climate Change, UNFCCC) and the conservation and sustainable use of living organisms (Conference of the Parties to the Convention on Biological Diversity, CBD).

INBO will be present at the major meetings of these different processes. It will highlight the exemplary achievements of its members, the multiple benefits of basin management and organize exchange of experiences to improve practices and optimize the use of natural resources.

It will increase its capacity building activities, project development, knowledge sharing (including publications), events and advocacy actions on seven thematic priorities:

- **Priority 1:** Improvement, development and strengthening of information systems and data at basin level;
- **Priority 2:** Adaptation to climate change in the basins of river, lakes and aquifers;
- **Priority 3:** Strengthening water governance;
- **Priority 4:** Intersectoral Coordination and Preservation of Biodiversity and Aquatic Ecosystems;
- **Priority 5:** Strengthening city-basin dialogue;
- **Priority 6:** Development of participatory and citizen management of basins and sub-basins;
- **Priority 7:** Reinforcing Institutional Partnerships and the Science-Policy Interface.



INBO Work Program 2019-2021

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

7 Priorities

- 1 Water Information Systems
- 2 Climate Change Adaptation
- 3 Better governance
- 4 Intersectoral coordination & environmental conservation
- 5 Strengthening city-basin dialogue
- 6 Participatory and citizen management
- 7 Increasing partnerships

www.inbo-news.org





Message from INBO World President

Ms. Blanca Jiménez Cisneros, who was appointed General Director of the Mexican Water Commission (CONAGUA) on 1st December 2018, as part of the new administration of President Andrés Manuel López Obrador, is currently INBO President.

In this issue of INBO Newsletter, Ms. Jiménez presents her message and vision of the future of the network, before transferring the presidency to Morocco at the next General Assembly, to be held from 30 September to 3 October 2019 in Marrakech.

About INBO importance

As an international platform, INBO enables stakeholders to exchange experiences and knowledge on Integrated Water Resources Management for improving the latter's implementation and on successful cases in variable contexts.

Likewise, it helps to create a space where basin issues can be discussed and analyzed, and solutions can be found to address the most pressing water challenges.

Regarding CONAGUA

Mexico is a country with vast experience in the field of water. Its geographical position has allowed it to develop knowledge and implement practices that, on the one hand, meet the increasing water challenges and the risks associated with extreme hydrometeorological phenomena, droughts and floods and, on the other, to address the challenges of meeting water needs with drinking water supply and sanitation services in rural and marginalized communities, but also in one of the world's largest megacities with more than 20 million inhabitants, located in an endorheic river basin.

Since receiving INBO Presidency in June 2016, Mexico, through CONAGUA, has committed to share its experience in the international events involving INBO, such as the meetings of the Conference of the Parties (COP) of the United Nations Framework Convention on Climate Change (UNFCCC) and the World Water Forum. Similarly, we are actively involved in preparing INBO's strategy for the 2019-2021 period.

Our commitment is to guarantee the right to water of our populations, both rural and urban, and, not forgetting anybody, taking into account the complexity of the relationship between cities and basins.



Ms. Blanca Jiménez Cisneros, General Director of CONAGUA

Message from the President

Several topics seem to me essential to face the challenges ahead, in the current context of climate change. We must prepare for more extreme and increasingly frequent events, as evidenced by the forecasts for the next rainy and hurricane season that is about to begin.

The first challenge is the knowledge of water resources, because "we cannot manage what we do not know and cannot measure".

It is therefore of utmost importance to have monitoring and measurement networks, for collecting and analyzing water data, and reliable Water Information Systems.

Today, most organizations produce data and have their own systems. The next step is to improve cooperation between the various stakeholders to exchange their information via a platform that allows them to be interconnected.

The second key challenge is the relationship between surface water and groundwater, in order to take into account the water cycle as a whole and to achieve a more efficient management of the resource.

International cooperation, the exchange of knowledge and successful cases, as well as the production of handbooks, intended for the stakeholders of the sector to guide them in the management of the resource, seem to me also very important, especially for the shared management of transboundary basins, to achieve sustainable development and prevent conflicts over water resources.

Last, but not least, is the question of how each user participates in the management of the resource. I think it is essential to adopt the concept of social co-responsibility, which defines not only the users' rights, but also their obligations, so that each stakeholder can assume his own responsibility for the sustainability of the resource.

Following steps

In order to include all the stakeholders involved in basin management, a major challenge is the introduction of other languages into the work of the network, as well as the translation of its publications, now available in French and in English (handbooks on water information systems, participatory management and adaptation to climate change in transboundary basins).

We shall actively participate in the next INBO events, especially in the preparation of the next assembly, as well as in the World Water Forum.

We shall gladly facilitate the transition with the next INBO President, who, I am sure, will do an excellent job in pursuing cooperative efforts for better and more efficient integrated management of the world's water resources.



Significant World Events

8th World Water Forum



18 - 23 March 2018 - Brasilia - Brazil

It is time to take stock of the situation... Feedback from the WWF

The International Network of Basin Organizations (INBO), the Global Alliances for Water and Climate (GAWaC), the International Network of Water Training Centers (INWTC) and their partners, were given the coordination of about ten thematic sessions in connection with the Forum's "Regional" and "Citizen" processes.

These sessions allowed addressing the issues of integrated management of transboundary river basins, the adaptation, which is now essential, to the effects of climate change on water resources and the information and training of all stakeholders concerned.

Two Special Sessions, among the most attended throughout the Forum, were devoted to "Strengthening Citizen Participation in Basin Management" and to "Water Information Systems: Data and Tools for Water Management and for Making the Right Decisions".

First, we will remember the slogan, which has prevailed in almost all the themes of the Forum: **"We cannot manage what we do not know how to measure!"**

In each country and each basin, the organization and improvement of the production, collection, conservation and exchange of data, as part of true Integrated Water Information Systems (WIS), whose long-term sustainability must be ensured, should allow for a precise view of the situations and of their evolution, especially in relation with the effects of climate change.

Early warning systems for floods and droughts must be developed wherever necessary.

A second major advance of the Brasilia Forum is the recognition of the importance of all stakeholders' participation in the definition and achievement of the common objectives for water resources management.

It is especially necessary to use recognized consultation frameworks such as Basin Committees or Councils, Local Water Commissions or River or Aquifer Contracts for this purpose. Access to information, training and environmental education needs to be improved, especially for the most disadvantaged populations.

With regard to the prevention of transboundary conflicts:

- Cooperation and dialogue between riparian countries on transboundary waters offer important perspectives for their sustainable development, regional integration and improved relations for mutual benefit in all economic, social and ecological fields;
- The establishment and strengthening of International Commissions, Authorities or Joint Organizations in transboundary basins improve dialogue, conflict resolution and the sharing of the cooperation benefits between riparian countries;
- These joint organizations should have clear mandates and human, technical and financial resources to carry out their missions;



- There is a broad consensus to promote joint management of surface and groundwater in the same area and to better protect transboundary aquifers.

Regarding adaptation to climate change:

Mobilization is essential at global level to urgently implement programs to prevent and adapt to the effects of global warming on freshwater resources.

The "Paris Pact on Adaptation to Climate Change in the Basins of Rivers, Lakes and Aquifers", launched at the COP21, proposes a set of actions that have proven effective and immediately applicable.

Freshwater must be truly recognized as a priority in the UNFCCC COPs' negotiations, especially by emphasizing the importance of adaptation measures alongside mitigation measures.

It is urgent to have a better integration of water policies with those of the other strategic sectors, such as a sustainable city, agriculture and food, health, waterways transport, fisheries, mines or hydropower, in particular.

Stakeholders are encouraged to include Nature-Based Solutions in an ambitious way in their policies and strategies for combating climate change, in land-use planning and water resources management.

It is necessary to significantly increase funding for climate action in the water sector in order to support not only infrastructure projects, but also serve to improve knowledge of water resources and climate change impacts, capacity building, governance, monitoring and evaluation of policies. They should also support river basin organizations for sustainable water resources management, especially when transboundary water resources are concerned.

Regarding education and capacity building:

Education and awareness of water issues and capacity building are essential at all levels to improve the management of resources and services.

Vocational training on water needs to be developed, supported by sustainable financial mechanisms and facilitated by the establishment or strengthening of specialized national or international training centers.

Significant World Events



There is a need to promote the experimentation, evaluation and exchange of know-how in vocational training and education, including support to networks for cooperation between existing or developing training centers.

The Ministerial Declaration encourages Governments to establish or strengthen national integrated water resources management policies and plans, including strategies for adaptation to climate change. It supports the

strengthening of institutional arrangements, with the participation of all stakeholders in the policy-making process, while fostering the exchange and sharing of information and experiences among public and private stakeholders and the civil society.

It recognizes that efforts and initiatives taken at all levels should promote the adequate and inclusive participation of all relevant stakeholders.

It recommends developing and sharing solutions, including integrated water resources management, adaptation to the impact of climate change, and nature-based solutions to address the most pressing water challenges, through research and innovation, upscaling cooperation, capacity building and technology transfer.

The Ministers encourage trans-boundary cooperation based on “win-win” solutions for all, in accordance with applicable international law, namely relevant bilateral, regional and international instruments.

In addition to the official sessions of the Forum, several side events allowed the presentation of a wide range of field experiences and direct exchanges between field leaders.

The strong mobilization of partners, especially South American partners, shows that ideas are progressing and that we are seeing a real convergence towards operational solutions that have proven themselves in the field and that can be implemented quickly.

But this requires changing words into action without delay!

All papers and photos of the events organized by INBO, GfWac, INWTC, EMWIS, IOWater and all their partners can be viewed and downloaded on the website:

www.inbo-news.org



Two new “INBO Handbooks”

At the Brasilia Forum, the International Network of Basin Organizations presented two new publications, to be added to the INBO Handbook collection, started in 2009.

The first handbook is entitled **“Water Information Systems. Administration, Processing and Exploitation of Water-Related Data”**.

Access to data and information on the status and evolution of the water resource and its uses is a crucial element for any water policy implementation. Unfortunately, the necessary data are often produced and managed by several organizations in different sectors, with little coordination among themselves and in many cases the information available for decision making and public information is not fully adapted to the needs.

Resulting from a collaboration between INBO and UNESCO, with the World Meteorological Organization (WMO), the Australian Bureau of Meteorology, coordinating the World Water Data Initiative (WWDI), and the International Office for Water (IOWater), with the support of the French Agency for Biodiversity (AFB), this document highlights why the management of water data is so important for the effective management of water resources and presents the main processes to be taken into account when implementing a Water Information System (WIS).

The second is entitled **“Participation of Stakeholders and the Civil Society in the Basins of Rivers, Lakes and Aquifers”**.

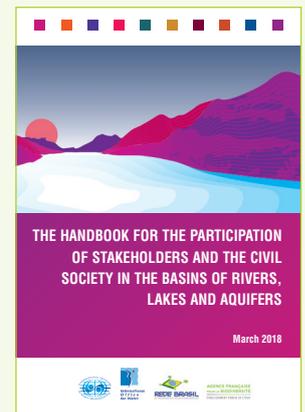
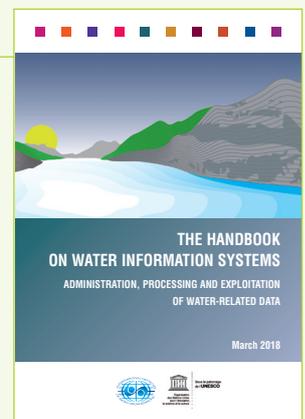
The implementation of many decisions needed for water resources management is only possible when there is

a strong commitment and if all public and private, collective or individual stakeholders concerned are mobilized.

This document, jointly written by INBO, the Brazilian Network of Basin Organizations (REBOB) and IOWater, with the support of the French Agency for Biodiversity (AFB), highlights why participation is so significant in water resources management. It describes the key elements of the participation in water management and it gives many practical examples from basins around the world which show what can be done to make the participation of stakeholders and the civil society a reality and an added-value in the decision-making process at basin level.

These handbooks are available in English on INBO website (“Network publications” section).

www.inbo-news.org



Significant World Events

High Level Political Forum (HLPF)



HIGH-LEVEL POLITICAL FORUM
ON SUSTAINABLE DEVELOPMENT

9 - 18 July 2018 - New-York - USA

Sustainable Development Goals: Water is not very popular!

The High-Level Political Forum (HLPF) on Sustainable Development, the UN's platform for review of the Sustainable Development Goals (SDGs), took place in New York City from 9 to 18 July 2018.

It gathered some 2,000 representatives from UN Member States, business leaders, mayors, the scientific community, foundations, UN agencies and civil society organizations.

The first day, the 2018 review of UN Water Sustainable Development Goal 6 "Ensure availability and sustainable management of water and sanitation for all" immediately set the scene by concluding: "Modest progress is being made, but most countries will not meet the target by 2030 at current rates of implementation"

A pessimistic observation, the UN Secretary General, HE Mr. E. António Guterres, recalled that the failure to achieve the objectives on water would also jeopardize the other SDGs.

Despite these depressed findings, the session dedicated to SDG 6's review was reduced to three hours of a long series of interventions agreed in advance leaving no room for a debate nor for solution proposals.

Only the Member-States expressed themselves, if one leaves apart three very short interventions of the representatives of the Major Groups.

Representatives of civil society, local authorities, companies, NGOs had only a limited access to a reserved area in the conference room without any opportunity to speak: we cannot really talk about a "Forum"!

As for the "High Level", it must be recognized that most of the seats of the Member-States were not occupied by ministerial level representatives, but often only by a representative of their national delegation to the UN.....

The water issue was not very popular at high-level!

While the different interventions of UN Water and Member States focused on the need for urgent and coordinated action, the format of the HLPF did not allow for more in-depth solutions.

The discussions therefore remained very general, as well as the final Ministerial Declaration, which was non-binding and without concrete conclusions, in contradiction with the urgency to act to achieve the objectives!



This format has been criticized by many Member States: and some speakers called for the establishment of regular intergovernmental political meetings to monitor the SDGs implementation for water.

Mr. Jean-François Donzier, former Secretary General of the International Network of Basin Organizations (INBO), who was accredited to participate in the Forum, could only support this idea, but provided that it is not once more to say nothing concrete!

At the end of the sessions, he underlined that the management of aquifers is only mentioned in a secondary way and the basin approach hardly appears and, even if the report and some speeches insist on the transboundary cooperation over shared water resources, they do not go so far as to recommend clearly and explicitly that it is organized on the scale of the entire transboundary basin...

To stay positive, let's say that, at least, the interventions and the UN-Water report reflect the messages conveyed, for decades now, by the Water Community, in general, and INBO, in particular, and presented during major international events on water: the importance of water, its governance, its integrated management, stakeholder participation, data sharing, adequate funding, transboundary cooperation, resource pollution, nature-based solutions and impact of climate change on floods and droughts.

Solutions do exist and have proven their effectiveness for decades for some of them But strong political will is needed to implement them!



www.un.org/sustainabledevelopment

Significant World Events

Global Climate Action Summit of Non-State Stakeholders

12 - 14 September 2018 - San Francisco - USA



Speech of Edouard Boinet from INBO

Nearly 4,500 participants, representatives of cities, regions, States, companies, public and private investors and associations participated in the Global Climate Action Summit in San Francisco from 12 to 14 September 2018.

This was the first climate summit of non-state stakeholders organized on US soil, held in a context of withdrawal of the United States from the Paris Agreement.

INBO participated as well as the Global Alliances for Water and Climate (GAFWaC), the Alliance of Megacities for Water and Climate (UNESCO-IHP)

and the Business Alliance for Water and Climate (BAFWAC), including Suez, the Pacific Institute, the Water Mandate CEO and the Carbon Disclosure Project.

INBO thus took part in the debate on knowledge, education and public involvement. It especially recalled the importance of producing reliable data and information as decision making support tools, the usefulness of involving all stakeholders in establishing a shared diagnosis and vision, and the need to properly train professionals in the water sector to optimize the use of the resource.

It also supported the interventions of the “Hoover Institution” and the Business Alliance for Water and Climate (BAFWAC), insisting on the “security” dimension of water management, perhaps the only one to be likely a priority topic in international climate negotiations. The States are indeed interested in water as a factor of national security (the “Hoover Institution” affirmed that the drying up of Lake Chad and drought in the Middle East were two determining factors in the emergence of Boko Haram and the Syrian Civil War) and as a factor of economic security (BAFWAC recalled that water has been every year in the top 5 of the biggest economic risks for seven years).

INBO was also present at the side event “Forests, Land and Food Day: Meeting the 30x30 Challenge” organized by WWF-US, to represent the water sector. The “30x30” challenge is based on the idea that improving the efficiency of our food systems while preserving our lands, habitats and natural soils, and that reducing waste and excessive consumption would provide 30% of the needed solutions by 2030 to deal

with the climate crisis and help implement the Paris climate agreement. The GAFWaCs are among the partners of this “30x30” challenge.

Representatives of Governments, public and private donors and companies intervened to present the solutions that can be implemented. The Global Environment Facility and its partners announced funding of \$ 500 million for soil protection and restoration.

The role of the social and environmental responsibility of agribusiness companies was stressed: the required changes of scale will only occur if they change their business model towards a fairer remuneration of farmers, practices and products that are more respectful of soil, climate and consumers’ health.

www.globalclimateactionsummit.org



Stockholm World Water Week

26 - 31 August 2018 - Stockholm - Sweden



INBO participated in this event in order to promote and develop international initiatives that it manages or co-manages, in particular the Global Alliances for Water and Climate (GAFWaC) and their incubation programs, including the “100 Water and Climate projects for Africa”, the INBO / UNECE platform of pilot river basins for adaptation to climate change, the World Water Data Initiative and the International Declaration on Nature-Based Solutions.

It also met many transboundary basin organizations (Lake Victoria, Senegal and Mekong Rivers) to discuss their work programs, INBO’s program and cooperation projects that could be jointly implemented.

INBO also took part in a side-event to present the National Center for Space Studies (CNES) work on the use of satellite data and imagery for the assessment of water quality.

www.worldwaterweek.org



Opening Ceremony - © Thomas Henriksson/SIWI

Significant World Events

“The management of a common asset: Universal access to drinking water for all”

8 November 2018 - Vatican City - Rome - Italy

The conference was organized by the Dicastery for the Promotion of Integral Human Development in collaboration with ambassadors accredited to the Holy See and with the patronage of the Pontifical Urban University.

In 2015, Pope Francis' encyclical letter “Laudato si”^{*} reviewed many water issues and reaffirmed that “access to drinking water is a fundamental and universal human right”. A few months later, the Sustainable Development Goals were adopted by the United Nations.

The first objective of SDG 6 reads “by 2030, achieve universal and equitable access to safe and affordable drinking water for all”.

Indeed, over the past two decades, there has been increasing focus on access to water in the declarations and activities of the international community, of many UN agencies, governments, as well as of the civil society and Catholic Church.

International summits and recent publications have wisely emphasized that drinking water should be addressed in an interdependent and interdisciplinary approach. Issues of culture, community, spirituality, accountability, justice, education, sustainability, local governance, data collection and data sharing are increasingly being taken into account when discussing water issues.

Indeed, too often in the past, the issue of water has been addressed only in terms of infrastructure, investment, state-level policies, quantity, peace and conflict.

However, despite the many proclamations and efforts that have resulted, even though water policies are now much more articulated and comprehensive, the issue of drinking water remains a top priority.

In fact, the lack of adequate access to drinking water is a daily and awful reality for millions of people.



The purpose of the conference was threefold:

- 1 Evaluating the progress made as well as the impasses and failures of this fundamental objective: to provide water to thirsty people;
- 2 Reiterating the vision of water as a common good, essential to life;
- 3 Making a useful and inspiring contribution to future international gatherings and commitments on water.

The conference drew on the Catholic Church's earlier contributions to international and interdisciplinary debate and efforts in the area of universal access to safe drinking water.

Particular attention has been paid to the factors that have a positive influence on universal access to water and to the causes of persistence of many problems in this area and the difficulty to tackle these causes.

^{*} “Praise Be to You”

Global Clean Water Desalination Alliance



The Global Clean Water Desalination Alliance (GCWDA) is one of four alliances composing the Global Alliances for Water and Climate (GAIWaC).

The Alliance, which currently has 176 Members from 38 countries, was launched at the COP21 in Paris in 2015.

It aims to reduce carbon emissions and improve water resources management in desalination plants.

The Alliance focuses on four key areas: clean energy supply for desalination plants, energy efficiency, integration of water-energy systems and demand response, R&D and demonstrators, training and dissemination of results.

On 16 January, during the Abu Dhabi Sustainability Week, IOWater signed partnership agreements with the Global Clean Water Desalination Alliance.

Under the terms of the signed agreements, a trust fund is to be set up to support innovative projects and finance the Alliance's activities and projects.

The fund will be overseen by both parties and managed by IOWater. It is intended to collect contributions from organizations wishing to support the alliance's aim to reduce carbon footprint.

Unconventional water resources are becoming increasingly important, including desalination.

Sound management of water resources therefore requires innovative and “clean” approaches, in order to sustainably integrate this solution and reconcile generalized access to water resources, economic and agricultural development on the one hand, and mitigation measures for water production on the other.

The partnership must thus allow a better integration of clean desalination in the water strategies of cities, basins or countries.

www.gcwda.org



Significant World Events

COP24



3 - 14 December 2018 - Katowice - Poland

INBO's events on water and climate

Measures to halt global warming are generally considered to be one of the most significant civilizational challenges and a prerequisite for implementing the principles and goals of sustainable development. The United Nations Framework Convention on Climate Change (UNFCCC) and its annual Conferences of the Parties (COPs), which are the main decision-making body of the Convention, are the most important instrument of international cooperation on the fight against the effects of climate change.

One of the most important tasks of COP24 was to develop and adopt a set of decisions ensuring the full implementation of the Paris Agreement, in accordance with the decisions adopted in Paris (COP21) and Marrakech (CMA1.1). In addition, COP24 included the Facilitation Dialogue to support the implementation of national commitments.

The International Network of Basin Organizations (INBO), on its own and as Secretariat of the Global Alliances for Water and Climate (GAWaC), organized and participated in 9 events and a dozen bilateral meetings during COP24 (Katowice, Poland) on the theme of water and climate.

These events dealt with challenges and solutions related to:

- Adaptation to climate change in transboundary basins, water security;
- Access to climate funds for adaptation projects in the water sector;
- Capacity building and dissemination of knowledge;
- Dialogue between stakeholders from different sectors;
- Research and innovation to fight against climate change in Africa (AfriAlliance);
- The need for better governance for successful development of the blue economy;
- The value of preserving ecosystems and nature-based solutions for adaptation.

Moreover, during a side event in the French Pavilion, Ms. Brune Poirson, Secretary of State to the French Minister for Ecological and Solidarity Transition, announced that the next "One Planet Summit" will be held in Nairobi (Kenya) on Thursday 14 March 2019. It will address the issue of adaptation and will focus on Africa.



Speech by Mr. Eric Tardieu, INBO General Secretary

Mr. Eric Tardieu, new General Secretary of the International Network of Basin Organizations (INBO), confirmed that he would contribute by presenting the progress made in the "100 water and climate projects for Africa" initiative.

On 8 December, on the occasion of the "Member State and Government" Day, the Global Alliances for Water and Climate (GAWaC), in collaboration with the Governments of Senegal, France and the Kingdom of Morocco, organized an event on "Adaptation in the water sector: ensuring water security in a context of climate change".

As 90% of the impacts associated with climate change affect our societies through the water cycle according

to the 5th Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), droughts, floods, desertification are a threat to water security and, beyond that, to the energy and food security of our societies.

This event aimed to promote the French Speaking World as an opportunity for exchanges between river basins around the world to identify and apply climate change adaptation solutions. It presented actions for adaptation to climate change implemented in the basins worldwide.

www.inbo-news.org/en/events/cop24

www.water-climate-alliances.org/news/cop24-katowice



Ms. Brune Poirson, Secretary of State to the French Minister for Ecological and Solidarity Transition © INBO



COP24 - KATOWICE 2018

UNITED NATIONS CLIMATE CHANGE CONFERENCE





11th Meeting of the OECD Water Governance Initiative (WGI)

12 - 13 November 2018 - Zaragoza - Spain

The OECD Water Governance Initiative is a multi-stakeholder network of 100+ delegates from public, private and non-profit sectors gathering twice a year in a Policy Forum to share on-going reforms, projects, lessons and good practices in support of better governance in the water sector.

It was launched on 27-28 March 2013 and is chaired by Peter Glas of the Dutch Water Authorities. The WGI is hosted by the OECD and coordinated by a multi-stakeholder steering committee.

On 12-13 November 2018, the OECD Water Governance Initiative held its 11th meeting at the Palacio de Congresos, Zaragoza, Spain.

The meeting gathered 80+ practitioners, policymakers and representatives from major stakeholder groups. The agenda, list of participants, presentations, and pictures from the event are accessible online.

Summary and key outcomes:

- Delegates discussed WGI contributions to major international water forums. OECD Secretariat reported on the 2018 High Level Political Forum (New York, 9-18 July 2018), where the OECD program on “A Territorial Approach to the SDGs” was launched. INBO updated delegates on the preparatory process of COP 24 (3-14 Dec, 2018, Katowice, Poland), the key themes of which include technology, solidarity and nature. The Spanish hosts invited delegates to the 24th SMAGUA fair to be held on 5-7 February 2019 in Zaragoza.
 - Delegates peer-reviewed the paper “An application of the OECD Principles on Water Governance to Flood Management”. This paper provides a checklist of 100+ questions that help policy-makers and practitioners to assess whether governance systems are fit to manage flood in an effective, efficient and inclusive way.
- WGI delegates stressed the importance of this tool and issued a call to expand the exercise to other subsectors such as droughts or groundwater governance.
- OECD Secretariat presented the draft WGI 2019-2021 Strategy and Program of Work for discussion. Breakout sessions were conducted to shape the objectives, outputs and timeline of the two Working Groups on Indicators and Capacity Development.
 - Delegates shared key messages from latest research and reforms related to water: water governance in Brazil (ANA); water governance in a humanitarian context (Action contre la Faim); the City Water Resilience Framework (Arup); coastal zone groundwater management (BMZ); the role of women in the governance of shared waters (Women for Water Partnership).
 - Delegates welcomed the program proposal “The Governance and Economics of Water Security

for Sustainable Development in Africa” which aims to leverage the King Hassan II World Water Prize.

- The session “Water Governance and Circular Economy” shed light on changes in governance frameworks needed to transition from traditional linear economic practices to innovative circular practices. The OECD program, “Economics and Governance of Circular Economy in Cities”, was presented.
- Delegates shared key messages on the water governance forums and conferences organized in 2018.
- A knowledge sharing session was devoted to water governance in Spain during which Manuel Menendez, General Water Director of the Ministry for the Ecological Transition, presented key challenges in the water sector and highlighted opportunities to improve Spain’s water governance system through the lens of the OECD Principles.



The OECD Water Governance Initiative (WGI) contributed to the development of the OECD Water Governance Indicator Framework, through a dedicated working group during the triennium 2016-2018. The next program of work of the WGI towards 2021 will keep working on governance indicators, to complement the framework through the development of impact indicators and by promoting the use of the existing indicator framework.

Oriana ROMANO
Organization for Economic Cooperation and Development (OECD)
Oriana.ROMANO@oecd.org

www.oecd.org

International Events

OECD Water Governance Indicators



The OECD Water Governance Indicator framework has been developed to support the implementation of the OECD Principles on Water Governance at all scales and levels of government. It is conceived as a self-assessment tool to evaluate what works, what does not work and what can be improved in an inclusive and participative manner.

This framework is composed of 36 indicators on the what (policy framework) the whom (institutions in charge) and the how (coordination and/or evaluation mechanisms), measured through a Traffic Light System.

It is complemented by a Checklist containing 100+ questions that allow a deeper evaluation of water governance dimensions linked to each principle and an Action Plan for future actions.

It is not intended to be a monitoring framework, nor a benchmarking tool to compare countries' performance.

In fact, on a voluntary basis, countries, basins, regions and cities, can carry out the assessment in order to:

- Foster dialogue at local, basin, regional and national levels;

- Promote inclusiveness across stakeholders and identify the role that each can play to contribute to positive spill-overs on water governance;
- Stimulate transparency in the performance of water-related institutions;
- Increase awareness on specific issues;
- Trigger actions to bridge water governance gaps.

More important than the results themselves is the process underlying the evaluation. Eleven pilot tests, six of which carried out at basin level (Selangor, Malaysia; Sebou, Morocco; Rio Nare in Antioquia, Colombia; Rimac, Peru; Segura and Jucar, Spain) helped frame a 10-step methodology for self-assessment. The methodology suggests concrete steps for the preparatory phase, the diagnosis and the action phase.

For more information:

water.governance@oecd.org

International Secretariat for Water (ISW)



World Youth Parliament for Water: Youth as a vector of transboundary cooperation and dialogue



The World Youth Parliament for Water is a youth network acting for water around the world which has been launched and supported by the International Secretariat for Water for over 15 years.

Members ensure that youth voices are heard by decision-makers, take local action in over 80 countries and in their communities, and team up for shared solutions.

At river basin level, the young parliamentarians petition for a direct role of young professionals in water management, participating in public consultations and driving future planning.

The World Youth Parliament for Water elected a new board at the World Water Forum in Brasilia in March 2018 where

it brought together over 50 young people from five continents during a week of discovery, debate and action.

The new President of the network is Lindsey Aldaco-Manner, from Texas A&M University. The Vice President is Roshani Bhattarai of Nepal, founder of the Nepal Youth Parliament for Water. Members also elected six regional representatives.

"I'm excited to stand up for the right of all to a sustainable access to water and sanitation," said Manner. "The World Youth Parliament for Water has a tremendous potential as a network to undertake projects that facilitate sharing while advancing the cause of water and peace."

During the World Water Forum, youth advanced the cause of the Parliament's theme, Water and Peace. They participated in high-level panels and discussions, ensuring youth voices were heard, prominent and relevant in all the Forum processes. Participants contributed directly to discussions pursued by policymakers on transboundary issues.

To date, more than 30 Youth Parliaments for Water are actively mobilizing and connecting young water leaders around the world and are drivers of actions at basin level.

They are advocating for youth participation to decision-making processes, with a strong focus on river basin organizations. In fact, members from Central Asia have secured a seat for a youth representative to be involved with the meetings of all 8 of Kazakhstan's Basin Councils.

The World Youth Parliament for Water and the International Secretariat for Water are now working to support Youth Parliaments at basin level and are in discussion with authorities for youth to be included in further basin committees. While the challenges of peaceful, sustainable and equitable water resources management have to be urgently moved to the forefront, it has never been more important than right now to recognize civil society - including youth - as key stakeholders.

Sarah DOUSSE

Executive Director
International Secretariat for Water
sdousse@sie-isw.org

Lindsey ALDACO-MANNER

President
World Youth Parliament for Water
lindsey@youthforwater.org

www.sie-see.org



International Events

International Water Association (IWA)



Action Agenda for Basin-Connected Cities

IWA launched the Action Agenda for Basin-Connected Cities at the IWA World Water Congress on September 19th, 2018 in Tokyo, Japan. Building on the Principles for Water Wise Cities, the agenda aims to influence and activate urban stakeholders to protect and invest in water resources with basin and catchment organizations, including securing the water resource, protecting water quality and preparing for extreme events.

Resilience through sustainability

Growing populations and continued economic development of cities within a catchment area requires water security which depends on healthy basin ecosystems coupled with effective water governance. Challenges of water quality, quantity and resilience to extreme events cannot be solved by individual entities alone such as water utilities and city governments, as the wider catchment is usually beyond their mandate.

It is critical to encourage urban leaders to champion water resources protection by connecting in collaboration with basin and catchment organizations, civil society and environmental groups as well as agricultural, energy and other business interests.

Target audience

The Action Agenda is targeting multiple stakeholders with different roles to play including water and wastewater utilities, City governments, industry (urban and peri-urban), policy makers and regulators, and basin organizations and water resources agencies.

Transitioning to Basin-Connected Cities

The Action Agenda for Basin-Connected Cities outlines the rationale for urban stakeholders to lead the way in realizing their role as water stewards and the different pathways and activities towards achieving more integrated water resources management.

This includes the drivers for action such as flooding, water scarcity and pollution; followed by the pathways for action through assessment, planning and implementation; and the foundations for action from developing a vision to building capacity for improving governance.

The Agenda into practice

To support the agenda, IWA is showcasing best practices and experience of transitioning to a basin-connected city through Basin Stories which demonstrate how stakeholders are taking part or contributing to sustainable management of water resources. INBO and IWA plan to compile these stories into a Handbook.

To play a part or learn more, visit:

<http://iwa-network.org/projects/basin-action-agenda>

Katharine CROSS

Program Manager - Basins of the Future
International Water Association (IWA)
katharine.cross@iwahq.org

www.iwa-network.org

Guide on the funding of water and climate projects

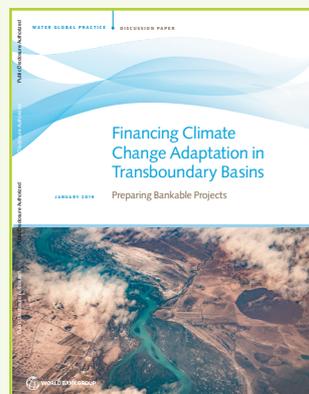
A publication of the World Bank, UNECE, AfDB and INBO

The World Bank, UNECE, African Development Bank and INBO are jointly publishing a methodological guide on "Financing adaptation to climate change in transboundary basins: Preparing projects that can be funded".

This publication builds on the preparatory work and conclusions of the training workshop "How to prepare bankable projects for financing climate change adaptation in transboundary basins", held in Dakar, Senegal, from 21 to 23 June 2017 as part of the activities of the Global Network of Basins Working on Climate Change Adaptation led by INBO and UNECE.

The guide provides practical answers to the questions asked by donors and climate change adaptation project leaders, for example on the various stages of a project proposal and the associated procedures (different

according to the donor), on the criteria for eligibility and how to designate a recipient of funds (the transboundary basin organization or one of its Member States), the additionality of funding or the sustainability of expected results beyond the life cycle of the project.



www.inbo-news.org/pub/Financing_CC_Basins

Principles for "Water-Wise Cities"



- 1 Regenerative Water Services
- 2 Water Sensitive Urban Design
- 3 Basin Connected Cities
- 4 Water-Wise Communities

International Events

Flood and Drought Management Tools (FDMT)

Making basin planning a reality: An online sharing tool



The heavy rains during the 2018 monsoon season resulted in landslides and floods forcing over 8 million people to evacuate their homes in parts of western Japan.

The increasing uncertainty of the climate makes it difficult to prepare for extreme events.

Where water resources span across national boundaries, building some semblance of resilience and adapting to future floods and even drought challenges demands effective trans-boundary collaboration and access to the required information to help water managers plan more effectively in the short to medium term.

The Flood and Drought Management Tools (FDMT) project responds to this growing sense of urgency to improve resilience within river basins.

Water managers can make use of a package of technical applications accessible through the Flood and Drought Portal www.flooddrought-monitor.com, enabling them to compile information from models, indicators and existing plans into planning scenarios that are robust, resilient and adhere to best practices.

This project is funded by the Global Environment Facility (GEF), International Waters (IW) and implemented by UNEP, with the International Water Association (IWA) and DHI as the executing agencies.

It was implemented, from 2014-2018, in 3 pilot basins (Volta, Lake Victoria and Chao Phraya).

As a web-based application, plans can be shared by multiple users, for example, policy makers, managers, engineers, researchers, within the same basin.

This helps build a shared vision and plan leading to more impactful investments and contribution towards the targets set in the UN Sustainable Development Goals.

For more information on the Flood and Drought Management Tools project, visit:

<http://fdmt.iwlearn.org>

SPACE-O

From Space to tap: A decision support platform combining satellite technology with local knowledge

Starting in 2016, an international team of experts joined together to harness space technology to tackle drinking water challenges.

The SPACE-O project, funded by the European Union's Horizon 2020 Program, has launched a decision support platform that streamlines available technologies to make them accessible to water operators.

SPACE-O combines satellite technology with hydrological and hydrodynamic modelling. The platform is open source and free of charge.

According to the FAO, global fertilizer use is likely to rise above 200.5 million tons this year, which contributes significantly to freshwater pollution and impacts the full water cycle.

SPACE-O provides tools for water quality forecasting that can be used to optimize water treatment operations and benefit many other water quality dependent activities (recreation, aquaculture and hydropower).

These tools include:

- **Water Information System:** combined analysis of data for short term water quality forecasts;
- **Early Warning System:** indicates incidences of water quality deterioration that potentially have impact on downstream water utilities;
- **Water Treatment Plant Optimization:** provides water treatment options based on forecasted raw water quality and algorithms for improving efficiency in both water

quality treatment and financial performance;

- **Catchment Risk Assessment:** provides a method for water managers to identify hazards within the upstream catchment area and assesses the level of risk to their water systems;
- **Improve my Water:** a citizen science platform to report, administer and analyze local water issues.

These tools can be used to take proactive action such as blending water from other connected reservoirs so as to mitigate or moderate evolving algae bloom events for example.



Access the Space-O platform:

<https://www.space-o.eu>



International Events

International Association of Hydrogeologists (IAH)



Strategic Overview Series

The International Association of Hydrogeologists (IAH), founded in 1956, is a scientific, educational and charitable professional membership association for scientists, engineers, water managers and other professionals working in the fields of groundwater resource planning, management and protection.

IAH aims to further the understanding, wise use and protection of groundwater resources throughout the world.

To do this we raise awareness of groundwater issues and work with national and international organizations such as INBO, to promote the use of groundwater to ensure ready access to safe drinking water.

As part of this we have established our Strategic Overview Series of papers, which look at key issues for the sustainable management of groundwater:

- **Energy Generation and Groundwater;**
- **Food Security and Groundwater;**
- **Global Change and Groundwater;**
- **Human Health and Groundwater;**
- **Resilient Cities and Groundwater;**
- **UN-SDGs for 2030: Essential Indicators for Groundwater;**
- **Ecosystem Conservation and Groundwater;**

These papers also highlight the interaction between groundwater, surface waters and the wider environment. This emphasizes the need for an integrated approach to water resources and wider environmental management.

The paper on the UN Sustainable Development Goals (SDGs) for 2030 explains the conceptual and practical challenges involved in monitoring groundwater in relation to SDG Targets.

It can be more difficult to monitor and assess the quantity and quality of groundwater than surface water. It also shows how groundwater storage represents a natural buffer against unpredictable water demands arising from accelerated global warming.

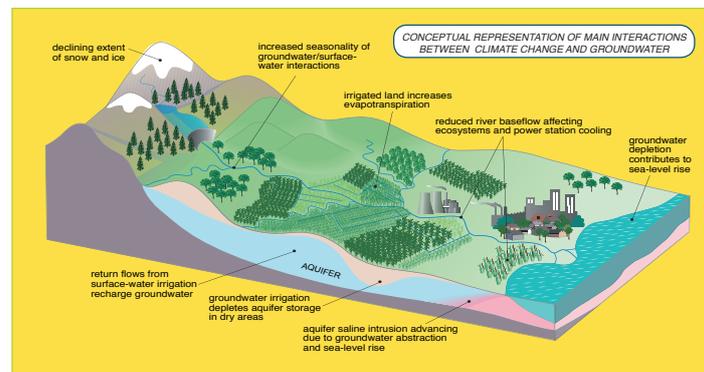
SDG 6 presents the commitment to ensuring that everyone has access to safe water by 2030 and includes targets on protecting the natural environment and reducing pollution. Groundwater is important for all of these.

It promotes conjunctive uses of groundwater and surface water, enhanced groundwater recharge through improved land management, urban green infrastructure and sustainable urban drainage systems, which are important as 'nature-based solutions'.

SDG 6.6 emphasizes the need for protecting and restoring water-related ecosystems, and highlights the role of aquifers. The 2018 edition of the UN World Water Development Report (WWDR 2018) recognizes that "Groundwater has an important environmental role of sustaining river flows and ecosystem services. Groundwater is also becoming an increasingly important resource for human development and economies. Groundwater is more accessible for poor communities than river flow...". It also recognizes the importance of groundwater in "alleviating adverse impacts of both floods and droughts... and impacts of progressive climate change overall."

IAH's Strategic Overview paper on "Ecosystem conservation and groundwater" explains the importance of groundwater dependent ecosystems (GDEs) and groundwater supported wetlands for the conservation of biodiversity - many being vital for survival of a wide variety of species and figuring prominently in sites covered by the RAMSAR Convention.

Moreover, GDEs can be of significance as a renewable source of human nutrition and as key features in the local landscape such as springs and lagoons.



The Report notes that managed aquifer recharge (MAR), as championed by the IAH's MAR Commission, has the potential to serve several purposes, including maximizing water storage, replenishing depleting aquifers, improving water quality, improving soil quality and providing ecological benefits such as groundwater-dependent plant communities or enhanced downstream river flows.

Groundwater - at the heart of Integrated Water Resource Management!

Our Strategic Overview papers are freely available for distribution as electronic versions at:

iah.org/education/professionals/strategic-overview-series

Antonio CHAMBEL
President
Ian DAVEY
International Association of Hydrogeologists
idae@iah.org
info@iah.org

<https://iah.org>



ANBO: Advocating for a new vision

The African Network of Basin Organizations (ANBO) was created in July 2002 to provide African Basin Organizations with institutional representation for strengthening the governance of transboundary waters in Africa.

The "Institutional Capacity Building for the African Network of Basin Organizations (ANBO) to Contribute to the Improvement of Transboundary Water Governance in Africa" (ANBO-UNDP/GEF) project was designed and implemented in such a context.

The ANBO-UNDP/GEF project is funded by the Global Environment Facility (GEF) supported by UNDP as implementing agency and OMVS and UNESCO as executing agencies for the project.

Its aim is to build the coordination and collaboration capacities of African lake and river basin organizations and commissions and to strengthen the frameworks for cooperation on transboundary groundwater management, as well as those of their Member States, with a view to improving transboundary water governance in Africa.

The project has two components:

- 1 One on building the institutional and technical capacities of ANBO as a technical body of AMCOW (African Ministers' Council on Water);
- 2 The other on support for capacity building of lake / river basin organizations, groundwater commissions and RECs (Regional Economic Commissions) to foster transboundary cooperation.

The specificity of this project is to propose a new vision that transforms ANBO into an "organization of services" for its members.

The idea of service is to show ANBO's added value to transboundary basin organizations by providing them with adequate answers to their needs.

To go further in this dynamic and revitalize the network, the ANBO-UNDP/GEF project has identified 5 major strategic pillars that may support this new vision of ANBO.

These are institutional governance, climate change, groundwater, knowledge sharing and sustainable funding.

All these above-mentioned points and the renewal of ANBO bodies will be on the agenda of the next ANBO General Assembly to be held in Tunis from 2 to 5 July 2019.

Topical sessions, mainly focused on climate change, groundwater and sustainable funding, will be led by partners and network members throughout the General Assembly and feedbacks will be given to allow ANBO members to appropriate Africa's new climate and environmental challenges.

These challenges are multiple because this GA follows a year and a half of total lack of activities after the ending of the SITWA project.

Other major topics will be dealt with during this ANBO General Assembly:

- Analysis and review of the statutes;
- Evaluation of the 10-year strategy;
- A proposal for a new roadmap;
- Assessment of the five-year action plan (2015-2019);
- Proposal for a new 2019-2024 action plan;
- Election of the new Coordination Committee and the new ANBO President.

All these above-mentioned points will be used for revitalizing ANBO, which is at a crossroads.

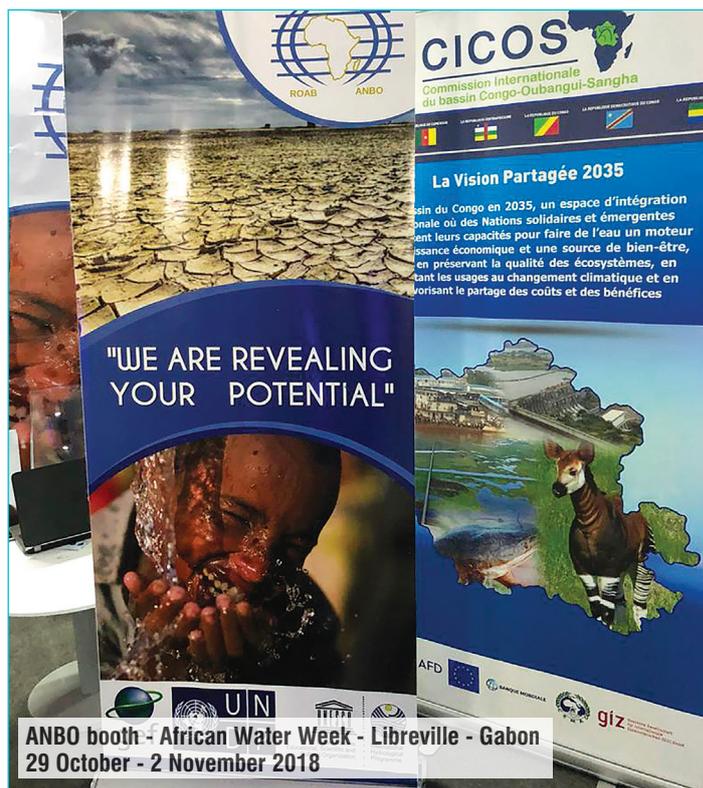
Pape Ndiouga NDIAYE

Expert in communication and knowledge management
ANBO-UNDP/GEF
papendiouga@gmail.com

www.omvs.org/content/projet-raob-pnudfem-un-nouveau-depart-pour-le-raob



Kick-off workshop for ANBO-UNDP/GEF project
1 - 2 October 2018 - Dakar - Senegal



ANBO booth - African Water Week - Libreville - Gabon
29 October - 2 November 2018

Innovative solutions for water and climate in Africa



Participants in the AfriAlliance project

The European project AfriAlliance (2016-2020) has reached the halfway point and finished its third year with very positive results on its activities.

The aim of the project is to boost Africa's capacities to respond to the challenges of climate change by working together and sharing innovative solutions between existing networks in Africa and Europe.

INBO is partner in the consortium, which includes 14 other networks on both continents.

New workshops in Mali and Kenya took place to exchange on needs and social innovation related to water and the impacts of climate change.

They wrapped up the first round of meetings between basin organizations, researchers, civil society organizations and water services.

The results of these workshops fed into reflections on the state of research and the availability of results and led to proposals for new strategic directions in terms of research funding.

The first step was to draw up a list of social innovation requirements. The partners then collected data on existing solutions in response to the needs identified.

The needs and research results are then entered into a database managed by the International Office for Water (IOWater), INBO Secretariat, which is also responsible for producing a report presenting the general state of play.

In terms of communication, a new series of themed fact sheets on social innovation is to be published soon.

A first series, available in English and French, is available on the project's website and covers the general theme of monitoring.

This second series focuses on water resource management in the face of climate change.

The project is starting a new phase of events, this time centered on the transferability of solutions.

Field stakeholders and suppliers are invited to meet at transfer workshops and travelling workshops demonstrating innovative solutions across Africa.

All of this information is available on the website.

Natacha AMORSI
IOWater/INBO
n.amorsi@oieau.org



www.afrialliance.org

The Handbook on **Data Collection**



Niger Basin Authority (NBA)

36th Ordinary Session of the Council of Ministers

A Successful Session for the New Executive Secretary

The 36th Ordinary Session of the Council of Ministers of the Niger Basin Authority was held on 6 April 2018 in Abuja, Nigeria.

This session was marked by the massive participation of the Members of the Council of Ministers, Ambassadors and Experts of the NBA Member States,

of the Regional and National Coordination of Users of the Niger Basin Natural Resources, and Technical and Financial Partners.

head office of the Niger Basin Authority and the adoption of the NBA Budget of the Objective-oriented Program for 2018 - 2020 (BPO 2018-2020).



During this Session, the Council of Ministers took important resolutions concerning the development of the institution, including, among others, the adoption of the Executive Secretary's activity report for the period ending on 31 December 2017; the completion of the complementary study on the NBA Institutional and Organizational Audit; the construction of the

The Council of Ministers also congratulated Mr. ABDERAHIM BIREME HAMID of the Republic of Chad on his appointment as NBA Executive Secretary.

It showed its full willingness to accompany him to achieve the objectives assigned to the Niger Basin Authority under his leadership.

Transfer of power at the Niger Basin Authority (NBA)

Mr Abderahim Birémé HAMID replaces Dr Toupta BOGUENA

On 12 April 2018 in Niamey, Niger, the handover ceremony between Dr Toupta BOGUENA (outgoing Executive Secretary) and Mr Abderahim Birémé HAMID (incoming Executive Secretary) took place in ABN conference room, under the chairmanship of Prof. Issoufou Katambé, Minister of Hydraulics and Sanitation of Niger and NBA supervising Minister.

Mr. AMID expressed his gratitude to the Nigerian Authorities and affirmed his commitment to implement the NBA projects and programs for the benefit of the basin people.

This ceremony gathered the Ambassadors of the Member Countries, the Technical and Financial Partners, the executives of the supervising Ministry, the staff of the Executive Secretariat and the members of the National Coordination of users of natural resources in the Niger Basin.

Dr Toupta BOGUENA thus handed over the power to her compatriot Abderahim Birémé HAMID as the new NBA Executive Secretary. To close the ceremony, the Minister called upon the executives of the Executive Secretariat to have more solidarity and commitment to

better accompany the new Executive Secretary to succeed in his mission.

Profile of the new Executive Secretary:



A graduate of the National School of Magistrates of Paris, France, Mr. Abderahim Birémé HAMID is an experienced administrator of the Chad civil service. After several years spent in the judicial administration (judge at headquarters, counselor at the Court of Appeal, President of the Court of First Instance of Ndjamena,

Public Prosecutor), he has been Minister several times (Minister of the Interior and Public Security, Minister of Trade and Industry, Minister of Land and Public Safety). On an honorary basis, he is an Officer of the Order of Civil Merit of Chad and Commander of the National Order of Chad.

Abdoulaye KAYA
Communication Expert
ABN
abdoulaye.kaya@abn.ne

www.abn.ne

Congo Basin / CICOS

Hydraulic monitoring and spatial application

The working group on spatial hydrology, which gathers eight French institutions (CNES, AFD, IRD, IRSTEA, IOWater, BRL, CNR and CLS) was created in 2014 to prepare the exploitation of the Franco-American satellite SWOT (Surface Water and Ocean Topography) in 2021. It is pursuing its activity on the Congo Basin with the International Commission of the Congo-Ubangi-Sangha Basin (CICOS).

Several activities have been finalized in this project.

In particular, the following actions were achieved in 2018:

- Operational development of the Hydrological Information System of the Congo Basin, with support from BRL and IRD;
- Development and testing of a method to calculate flows from altimetric satellite measure-

ments on the Congo and Ubangi (IRSTEA and IRD);

- Development of applications for hydroelectricity and navigation in the Congo Basin (CNR);
- Organization of a regional workshop on hydrological monitoring and spatial applications in the Congo Basin in Yaoundé.

Following on from the international declaration of intent between CICOS and the French government to set up water information systems to adapt to climate change in the Congo Basin, signed at the COP22, French cooperation is preparing new support measures for CICOS.



Designation of the new RAMSAR Local Committee

Progress towards sound management of wetlands



The DRC Government has set up a new RAMSAR Local Committee.

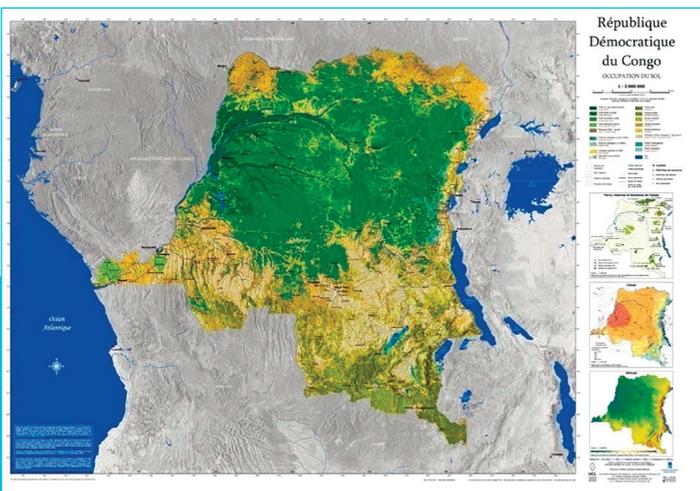
The committee is a decision-making support service for the management and preservation of wetlands, faced with the challenge of sustainable exploitation of the country's ores and hydrocarbons.

With the creation of this committee, the DRC complies with the obligations drawn from the RAMSAR Convention, which it has ratified. This decision is part of a broader Government strategy that focuses on the sustainable management of wetlands, including studies of RAMSAR sites spread over the national territory (Lake Eduard in Virunga National Park, Mangrove Park in Moanda, Ngiri-Tumba and Maindombe site) and updating the inventory of wetlands throughout the country. This work is carried out in collaboration with the civil society,

for example as part of the organization of the World Wetland Days for raising awareness and popularization of the convention. Regional cooperation figures prominently in this strategy, with the strengthening of existing relations with the transboundary basin organizations of Lake Tanganyika (ALT), Lake Kivu and Ruzizi River (ABAKIR).

The strategy has been developed to be in line with the Growth Strategy Paper for Poverty Reduction, achievement of Goal 6 of the SDGs, the National Environment, Forests, Water and Biodiversity Program (PNEFEB), the National Action Plan for Climate Change Adaptation and the new water law as well as the national policy for sustainable water resources management, currently under development. It therefore meets all the dimensions of the concept of sustainable environmental, social and economic development.

Map of the distribution of the main vegetation and water surfaces representing the DRC's wetlands according to the 2000 land use map (Source WWF: drafting of the strategic plan for integrated water resources management in the Congo Basin 2010)



The DRC's wetlands

Mapping of DRC's Wetlands

The DRC has huge reserves of fresh-water in the Congo River, streams, lakes and wetlands estimated at least 6.4% of the national territory (i.e. 150,922 km² out of 2,345,409 km²). It stands out with the largest areas of aquatic ecosystems representing 63% of those located in the Congo Basin. The DRC has many forms of wetlands, some of which are still poorly described: torrents, waterfalls, hot springs; saltwater, underground cave systems, flooded forests, tropical rivers with humic waters, rapids, vast swamps, tropical peat bogs and large lakes, etc.

To date, the DRC has no real detailed cartography of the various priority habitats in wetlands which allows a precise knowledge of these environments. It has at its best a delimitation carried out and based on the identification of major wetland habitats and aquatic ecosystems.

The most accurate cartography for a rough assessment of surface areas is that of the DRC's land use regrouping the DRC's wetlands into four main habitats. This land cover map represents the current use of the soil as well as the diversity of existing major plant formations. It results from the spectral and temporal analysis of 366 daily images with 1km² of spatial resolution, acquired throughout year 2000 by the vegetation sensor of the SPOT satellite.

Currently, a project of the Directorate of Water Resources of the Ministry of Environment and Sustainable Development aims to draw up a map of wetlands of local importance. This need stems from the fact that in the Center - South part of the DRC, several households depend on perennial pools for the production of drinking water and other ecosystem services and goods.

Site of the Mangroves National Park (Lower Congo)



According to the 1994 RAMSAR Descriptive Sheet, this site covering a set of two marsh-bordered plateaus along the Congo River including coastal and riverine waters, ponds and swamps, is a representative example of a wetland of the coastal system that plays an important role from an ecological point of view. Unique in the Congo Basin, it is home to a group of aquatic plant species (*Rhizophora* spp., *Avicenna* spp.) and to vulnerable or endangered animals. Nine species of rare or endangered mammals (giant

Pangolins, arboreal - Dwarf buffalo - Black antelope) breed there, including the manatee, as well as many birds (6 endangered species) and reptiles (8 endangered species), including marine turtles, all of which are threatened by habitat destruction.

Vegetation consists of moist meadows interspersed with forest savanna, grassland, swamps and mangroves.

The site is important for fish and shellfish stocks of the local fishery.



Site of the Virunga National Park (North Kivu)



This site is an exceptional wetland, at the confluence of several biogeographical regions. It includes recent and still active volcanoes, as well as 2 large lakes including Kivu which is part of the Congo Basin. The delineation of the RAMSAR site is not available but the boundaries would be those of the National Park (VNP). The VNP is a strict natural reserve, currently subject to the terms of the Law on Nature Conservation in the DRC. Classified as UNESCO World Heritage, straddling the Equator and located in the Albertine Rift Valley, the site contains most of the tropical biotopes, as well as 2,077 species of listed plants of which 230 are endemic to the Albertine Rift Mountains.

The area is important for the feeding and wintering of several migratory bird species and for one of the largest concentrations of wild mammals (210 species) in Africa, or even over the world, rare endemic (21 species) vulnerable and endangered species. It is one of the few places where mountain gorillas can be studied in their natural environment. The site is archaeologically important, the oldest of the stone tools in the world having been discovered on the shores of the lake. Human activities include tourism, fishing, hunting, subsistence agriculture and agroforestry (firewood). Currently this park is threatened by the exploitation of oil.

The Ngiri-Tumba-Maindombe site (Equator and Bandundu)

On 24 July 2008, the DRC managed to register, with the support of WWF International, the largest RAMSAR site in the world. This site, straddling the province of Equator and Bandundu, covers 6 million ha.

This site includes lakes of black, humic, acidic waters, chemically poor but rich in vegetable debris: Mai N'dombe (2,400 km²), Lake Tumba (765 km²), whose respective depths do not exceed 8 and 3 m (with seasonal variations of up to 4 m). The site is at the confluence of several major tributaries of the Congo including Lulonga, Ikelemba and Tshuapa-Ruki and also covers part (677 km) of the navigable Congo reach.

In its section between the Congo and the Ngiri is a wide band of swampy or floodable forests crossed by the Lubengo Channel which connects the Congo to the Ngiri during the high water season. These biophysical elements make this area a unique freshwater aquatic ecosystem that contains large aggregates of micro-habitats that can support quite impressive ichthyological, herpetological and mammalian diversity.

Josué ARUNA SEFU

Executive Director of Congo Basin Conservation Society CBCS-Network.

RAMSAR NGO National correspondent in charge of public participation

josuearuna@gmail.com

www.cbcscongo.org



Freshwater management in the transboundary Basins of Lake Kivu and Ruzizi River, and Lake Tanganyika

The Lake Kivu Basin is one of the 276 transboundary basins of international interest where wetland connectivity is defined as "the proportion of wetlands occupied by dense urban or agricultural areas, assuming that human occupation results in the disruption of natural physical and biological links between rivers and their floodplains". Rwanda, Burundi and the DRC initiated a project on the management and preservation of freshwater from the Basins of Lake Kivu and Ruzizi River, and Lake Tanganyika bordering their respective countries, after a workshop organized on 30 October 2014.

According to the UNDP report, this project would be based on three areas of action. In the first area, a coherent and relevant strategy has been adopted at regional, national and local level. Local development plans are established and accepted by the population and the stakeholders' capacities are built for good governance in the water sector.

With regard to the second area, the aim is to ensure long-term water quality and quantity, as well as the protection of the basin environment, through reforestation and land-use planning policy.

Cultural practices that are resilient to climate change have been adopted (soil fertility management, erosion control, etc.). Renewable energies are made accessible.

The management of solid and liquid waste, respectful of the environment, will be ensured in the urban areas of Lake Kivu.

Regarding the third area, priority "green" economic opportunities are identified and disseminated in the three countries, and the development of green economy sectors focused on job creation for women and youth will be supported.

An agro-pastoral sector that meets food and nutrition security needs is market-oriented.

Since 2011, Rwanda, Burundi and the DRC, aware of the threats to the waters of the Lake Kivu Basin and its environment (deforestation), are trying to manage the water resources of this basin in order to ensure sustainable water supply.

Organization for the Development of the Senegal River Basin (OMVS)

Evaluation of the Vulnerability of the Senegal River Basin to Climate Change and Elaboration of an Adaptation Plan

The Senegal River Basin, 300,000 km², covers four States: Guinea, Mali, Mauritania and Senegal. It constitutes a strategic zone in the West African sub-region given the context of water scarcity on the one hand and increases in demand for water for multiple uses on the other.

Despite its decisive role in the economies and stability of the four States, the Basin is currently facing serious difficulties linked to the combination of the very strong anthropogenic pressure on the environment and the impacts of climate change.

Within the framework of the PGIRE II, with funding from the World Bank, OMVS engaged in an in-depth diagnosis to better understand current and future climate changes on the basin

scale, their real and potential impacts on the environment, the availability and management of water resources and the socio-economic situation of the basin's populations. Then, adaptation and climate risk reduction measures were planned in a participatory manner with a view to sustainable development of the Basin.

To accompany it in carrying out this work OMVS has selected a Consultant, the ARTELIA - IDEV - SARAH - BETICO group, which has been tasked with assessing the potential impacts and vulnerability to climate change in the Basin, and formulating a plan for adapting and strengthening the resilience of the basin, through the following tasks:

- Identify current climate trends in the Senegal River Basin;
- Make a diagnostic analysis of the vulnerability of the Senegal River Basin to climate change;
- Assess the structural and operational vulnerability of existing dams on the Senegal River;
- Analyze the potential impacts of these climate changes on major economic sectors and ecosystems;
- Assess people's perception and knowledge of climate phenomena and their impacts;
- Identify and plan in a participatory manner sustainable adaptation and mitigation processes;
- Propose an operational plan for the implementation of pilot projects to adapt and mitigate the impacts of climate change.

This mission, started in November 2016, is scheduled to end in July 2018 with the training of OMVS engineers in the water modelling tool developed and operated for the study's needs.

Véronique FAYE

OMVS

faye042@gmail.com

Jean-Luc RAHUEL

ARTELIA Eau & Environnement

Jean-Luc.RAHUEL@arteliagroup.com

www.omvs.org



Cameroon



Diagnostic analysis of current Nyong River management in the Mbalmayo floodplain

The Nyong River is a vital resource for many millions of people in the South Cameroon Basin. However, it faces an unprecedented ecological disaster.

A study made a diagnostic analysis of the Nyong River and Cameroon's river basins. Specifically, the study aimed to identify and map the area, to analyze the effects of anthropization on the Nyong.

The methodological approach included a documentary search, mapping, processing and analysis of information obtained and finally the identification and prioritization of the Nyong River problems in Mbalmayo.

Anthropogenic phenomena degrade quantitatively and qualitatively the water resources of the river. The immediate consequence is the regression of fauna in the environment and consequently the loss of biodiversity and the degradation of habitats.

In order to reverse the trend, all users and decision-makers are challenged to act within an organizational and concerted management framework to ensure synergy in the restoration of this ecosystem. Hence the need to establish and implement a Water Resources Management Plan to protect natural resources and improve the

living conditions of riparian populations. It implies that community and local management is the only and best option to meet Sustainable Development Goal 6 and to ensure the sustainability of river management at the Mbalmayo sub-basin scale.

As solutions to save the Nyong River from a natural disaster, the State should play a very important role, including:

- train fishermen and encourage them to traditional or even modern fish farming to avoid intensive fishing in the river;
- make resources available for waste disposal and raise awareness of local populations on the management of this waste, develop treatment plants to avoid pollution of the river by parasitic water from households and others;
- set up additional programs such as Integrated and Participatory Urban Waste Management Program, initiated by the municipality of Mbalmayo, and river management committees;
- advocate biological farming, respectful of nature;
- initiate a participative or multisectoral management involving all water stakeholders and users, etc.

Norbert F. TCHOUAFFE TCHIADJE

Pan-African Institute for Development

ntchoua@gmail.com

www.ipd-afrique.org

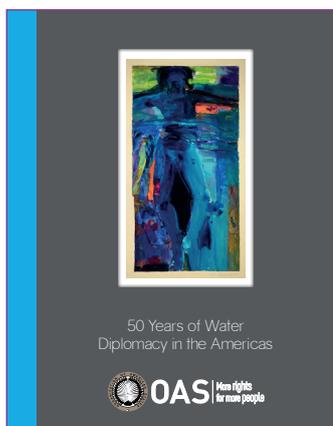


Macrophyte bloom





50 Years of Water Diplomacy in the Americas



The Organization of American States (OAS) is the oldest regional institution in the world. It was created in 1948 after the signing of the Charter of the OAS to ensure that its Member States “achieve an order of peace and justice, to promote their solidarity, to strengthen their collaboration, and to defend their sovereignty, their territorial integrity, and their independence.”

One of the central themes in the structuring process of the cooperation ties and in the construction of common interests amongst the Organization Member States is sustainable management of water resources.

Water constitutes an opportunity to propel Pan-American union and solidarity which leads to consider that the strengthening of democracy and cooperation is fundamental to guarantee the human right to water.

The geographical layout of water resources in the Americas is integrating, since it provides the conditions needed to promote solidarity and cooperation. As an example of this, twenty-four countries in the region share sixty-eight transboundary aquifer systems.

Taking into account that water is also a promoter of development, its availability in the American continent is favorable for its stimulation as about 45% of the fresh water worldwide is located in the region.

In spite of the development possibilities that water resources offer, in the Americas there are many challenges that persist related to access to water of optimal quality and sufficient quantity, conflicts concern water resources and use of transboundary waters. OAS assumed 50 years ago the water resources concerns of the Member States as an important item in its agenda.

This led the Organization to undergo a series of changes in its institutional structure and in its normative and conceptual frameworks to respond to water management challenges in the Americas.

OAS was able to promote a process through which water became an articulating element of peace, integration and sustainable development in the Americas. Integrated Water Resources Management has been the approach promoted from the OAS Department of Sustainable Development (DSD), debates, counseling services, exchanges of experience and good practices have been fostered, as well as cooperation projects with different governments and cooperation agencies to foster water governance and governability, a dialogue culture in the Americas, the sustainable use of water resources, the human dimension of water and its management as well as transboundary water resources system management, among other issues.

The lessons learning during over fifty years of water resources management at the OAS have been multiple. Direct work in different countries have modeled the experiences and the approaches of the Organization, allowing the formulation of proposals that are pertinent (in line with real needs), timely (actions planned at the right moment), professional (based on international and national standards for water and environmental management), respectful (based on respect for

national sovereignty), equitable (based on the fair distribution to satisfy all the water use demands) and people-centered (rights approach).

The accumulated experience of the OAS led to view that it was imperative that water resources management should be integral to guarantee the human right to water, social inclusion and sustainable development.

It is understood as “transboundary aquifer” or “transboundary aquifer system” the groundwater shared by two or more countries that are part of an ecosystem that includes the soil, the air and eventually the superficial waters (UN Water Convention, 1997): a particular type of transboundary water resources that are now being taken care in an ongoing work of the UN, within their Project of Articles about the Rights of Transboundary Aquifers.

The book is made up of four parts, through which lines of reflection and water resources actions, that are the result of concrete experiences, are developed and have accumulated over time:

- The first chapter presents the general outlook of water resources management within the DSD (main organizational, normative and conceptual changes in the OAS work in this field).
- In the second chapter four emblematic cases illustrate the sustainable development possibilities, generated through the cooperation of countries that share water resources.

- The third chapter presents water reflection lines that are central consequences of water resources management projects.
- Finally, the last part of the book provides general conclusions presented as challenges for Integrated Water Resources Management in the future.

Fifty years of work cannot be synthesized in so few pages. The analysis and the experiences presented give faith of general action lines and reflections on water, environment and development issues.

The aim of this book is to allow appreciating that the integrated water resources management approach driven by the DSD, has always sought to boosting strategies for the protection, conservation and sustainable use of water resources, promoting water resources diplomacy, care of the bordering shared ecosystems, and the ecosystem goods and services, based on diagnostic and scientific studies that create and strengthen environmental and water resources institutions of the Member States as well as citizenship participation.

To download the document:

[www.oas.org/en/sedi/dsd/iwrm/LibroDeLaAguaEnglishAbril24_2018%20Final%20\(3\).pdf](http://www.oas.org/en/sedi/dsd/iwrm/LibroDeLaAguaEnglishAbril24_2018%20Final%20(3).pdf)

Maximiliano CAMPOS ORTIZ
Organization of American States
MCampos@oas.org

www.oas.org/dsd



OAS | More rights
for more people



North and Central America

Canada - Mexico



Quebec-Mexico Collaboration on Water Management

Developing a better understanding of climate change impacts and supporting adaptation

Quebec and Mexico share expertise in a collaborative research project in water management. Both territories are facing present and future challenges in terms of water uses reconciliation and land use and have to cope with the added consequences of climate change on water availability and quality.

Therefore, academic and governmental organizations from Quebec and Mexico have joined efforts and put forward a project on scientifically investigating climate change impacts on floods and droughts, on helping stakeholders with vulnerability identification and decision making for adaptation.

One of the main strengths of this project is the combined support from key organizations, in Quebec and Mexico, namely: Quebec University's Ecole de technologie supérieure, Ouranos Consortium on Regional Climatology and Adaptation to Climate Change, Quebec's Ministry of Sustainable Development, Environment and Fight against Climate Change, Quebec's Network of Basin Organizations (ROBVQ), University of Veracruz, National Water Commission of Mexico (CONAGUA), and Mexican Institute of Water Technologies (IMTA).

The project is also coherent with the mission of the North American Network of Basin Organizations (NANBO), in which ROBVQ and CONAGUA are involved, to "further the science and the practice of integrated river basin management among basin organizations and other groups in North America".

A dynamic team of highly qualified personnel is currently working together with the partners on meeting the challenges of the project, which include identifying, and taking advantage of the similarities and differences between Quebec and Mexico in terms of hydro-climatology and water management.

This first stage of the collaboration was initiated in 2016 and will go on until 2019, with the aim of contributing to building a permanent international collaboration network.

Annie POULIN, ing., Ph.D.
Ecole de Technologie Supérieure
annie.poulin@etsmtl.ca

www.etsmtl.ca

USA - Mexico



The Rio Bravo in Mexico

The Rio Bravo / Rio Grande is a trans-boundary basin and the mainstream is the border between Mexico and the United States of America on 2,000 km. The river basin extends on a total area of 457,275 km² on both sides of the border. Mexico occupies 49.5% of this area, making this basin the largest of the country.

Water management is carried out by the Rio Bravo Basin Organization, a federal government agency with a Basin Council (Consejo de Cuenca del Rio Bravo -CCRB) collegially organized with the participation of water users, the civil society, academia and the three levels of government.

This Council was established in 1999 to promote and participate in water management and carry out actions to preserve water quantity and quality in the basin

The installation of the General Assembly of users of the basin took place in 2018 and Dr. Oscar Ibáñez Hernández was elected, as its President.

In order to strengthen the vision of the Members of the Basin Council, two important events took place: the election of new members of the Council in April, and the first "Water Governance Forum of the Rio Bravo Basin Council: Towards a Common Vision", was held on 15-16 November in Monterrey,

Nuevo Leon, Mexico, with the participation of training organizations, some NGOs such as WWF and Pronatura Noreste and the CONAGUA and IMTA, the users themselves and local governments. It gathered 170 participants, including water experts, presidents of other Mexico Basin Councils and their auxiliary bodies with the support of donors.

The complexity of water governance in the Rio Bravo, its challenges as a border basin and its water shortages were addressed during the Forum. Likewise, users and academics have discussed the needs and opportunities. The contribution of Mr. Jean-François DONZIER, with his overall vision of water management, as well as the presentation of a video on the OECD's governance policies by Aziza Akhmouch, should be highlighted, as well as the Mexican vision of Mario López Pérez of IMTA. Focus groups also discussed the experts' vision of the Rio Bravo governance.

This forum aimed to give a new vision of water policy for the country: water management and river basin governance.

Among other activities, the participants' dynamics of diagnosis and assessment should be underlined for establishing and strengthening strategic links and obtain guidelines for the development of the CCRB. The second ordinary session of the General Assembly of users took place, as well as a second meeting of the Presidents of the Basin Councils of the country and the 7th Ordinary Session of the Rio Bravo Basin Council, where was presented the progress made in the mathematical model of the distribution of Rio Bravo water, which is in the process of being calibrated by a specialized Working Group.

Julieta DÍAZ OIVAS
Rio Bravo Basin Council
GOCCRB@hotmail.com

www.cuencariobravo.org



Mr. Jean-François DONZIER at the Water Governance Forum of the Rio Bravo Basin Council - Mexico





Mississippi River Cities & Towns Initiative

Mayors Take-on Plastic Pollution in the Mississippi River



More than thirty Mayors from the length of the Mississippi River gathered for the seventh annual meeting of the Mississippi River Cities & Towns Initiative (MRCTI), an Association of United States Mayors, in the Quad Cities, September 18-20. Mayors announced a commitment with state legislators and companies on an effort to reduce plastic waste in the Mississippi River Valley by calling on levels of government and organizations to reduce their plastic waste 20% by 2020.

The Mississippi River provides billions of gallons of fresh water to industry each day and drinking water to 20 million people in 50 cities. But when up to 80% of the plastic in our oceans comes from land-based sources and the Mississippi River drains an expansive 31-state landscape, it becomes clear that possibly 40 percent of plastic pollution in the Gulf originates from the Mississippi River.

Plastics are what we refer to as a persistent pollutant. They don't break down, they simply become smaller and eventually turn into a dangerous confetti that spreads toxins and accumulates in the food chain eventually harming all of us through the food we eat and the water we drink.

State legislators gathered with Mayors to pledge action on plastic waste reduction commissions in each of the ten states that would work with cities to implement plans that work to reduce plastic waste in the Mississippi River Valley.

Plastic waste reduction needs to be addressed by leaders at every level of government. States can look at this comprehensively. There are a number of options for States to consider, but establishing these commissions is definitely a solid step. Plastic pollution is a big problem throughout our watershed and reducing it will be a complex effort

Mississippi River Cities & Towns Initiative



involving all of us including recycling, waste management, and greater consumer awareness to reduce their consumption of single-use plastics.

Mayors were also joined by two companies that have come forward making the commitment to reduce their plastic waste 20% by 2020.

“Until recently, we had been looking at reducing our carbon footprint and powering more of our facilities with renewable energy. Now, we are adding plastic waste to our obligations because our water resources are so important,” said Mike Whalen, President & CEO of Heart of America Group. ***“There needs to be an equal if not larger private sector response to this problem as plastics are just so pervasive throughout our economy. For instance, the amount of plastic produced from 2000 - 2010 exceeds the amount produced during the entire last century.”***, stated Mayor Frank Klipsch of Davenport, IA and Co-Chair of MRCTI.

Colin WELLENKAMP

Executive Director
Mississippi River Cities & Towns Initiative
cwellenkamp@mrcti.org

www.mrcti.org

Delaware River Basin Commission

Above Average Rain Results in Full Reservoirs

The Delaware River Basin Commission is a federal-interstate agency established in 1961 by President Kennedy and the four basin state governors to manage the water resources of the Delaware River Basin without regard to political boundaries.

A moisture-rich air mass settled over the Basin in July and persisted into August 2018.

Numerous local roads and highways, including a stretch of the Pennsylvania Turnpike between Valley Forge and Norristown and a portion of I-76 in King of Prussia, PA, were shut down due to severe flooding.

In the Upper Basin, the NYC Delaware reservoirs received an average of 7.3” of rain since August 1 and were full.

Normal storage for mid-August is approximately 80% of their usable capacity.

In the Lower Basin, Beltzville and Blue Marsh reservoirs were at 100% usable capacity.

San Antonio River Authority

The San Antonio River Authority was established in 1937 by the Texas Legislature with the intent to plan a barge canal from San Antonio to Gulf of Mexico. Shortly after its inception however, the River Authority shifted its focus to flood control due to the region's propensity for sporadic weather and its flood prone landscape. Over the years, our organization has morphed into resiliency focused agency that prides itself in sustaining a safe, clean and enjoyable river basin.

The San Antonio River Authority is very involved in the communities throughout our basin and would be happy to share our experience with the International Network of Basin Organizations.

Cole Ruiz, J.D.
Intergovernmental Relations Coordinator
San Antonio River Authority
cr Ruiz@sara-tx.org

www.sara-tx.org



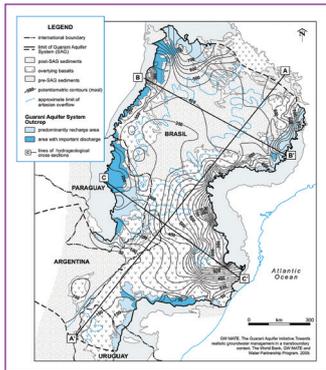
Peter A. ESCHBACH
Delaware River Basin Commission
peter.eschbach@drbc.gov

www.drbc.gov



South America

The Guarani Aquifer System (GAS)



The Guarani Aquifer System is a transboundary aquifer shared by Argentina, Brazil, Paraguay, and Uruguay. It stands as one of the largest reservoirs of freshwater worldwide and is one of the few transboundary aquifers whose management is regulated by an international treaty, **the Guarani Aquifer Agreement (GAA)**. The latter is also the first to refer in its preamble to the UN International Law Commission Draft Articles on the Law of Transboundary Aquifers.

A first period (2002–2010) of positive collaboration in which the four countries actively moved forward towards a better understanding of the aquifer, culminated with the adoption of the GAA in August 2010.

The GAA sets out indeed a general management framework. It contains the general rules of international law applicable to transboundary water resources (surface and groundwater). Countries, although sovereign, have an obligation to cooperate and not to cause significant harm to neighboring States. They must equitably and reasonably use the aquifer. There is no single way to define what equitable and reasonable means. It will always be a weighing and balancing exercise based on a number of factors. Other management practices are included in the treaty, such as the obligation to exchange information and to monitor the aquifer. Of particular importance is the obligation to notify other States if a planned activity may lead to cause significant harm. Notification is then followed by an environmental impact assessment.

A second period (2010–2017) was marked by a slowdown in transboundary cooperation, limited in this period to sporadic cross-border projects and initiatives linked to past and existing international projects. The truth has been very different and seven years after its adoption the GAA was still not in effect.

Argentina and Uruguay have ratified the GAA in 2012 and Brazil in 2017.

In April 2018, the Paraguayan Ministry of Foreign Affairs announced that the government had officially ratified the Guarani Aquifer System agreement. This means that all four countries that share the aquifer have now ratified the agreement, and that it enters into force. The merits of this entry into force can be summarized as follows:

- **Firstly**, the scientific understanding of the GAS as a whole that had been stalled will benefit from a continuous monitoring and data sharing system, which could be enhanced through increased funding that could stem from an enforced GAA;
- **Secondly**, the entry into force of the GAA will promote regular exchange of practices in the management of the aquifer (via the La Plata Basin Commission acting as a clearinghouse). The past experience (Guarani Project and others) is in a position to provide useful good practices that can feed into the implementation of the GAA, especially from an institutional perspective;

- **Thirdly**, potentially the agreement can put the GAS again on the agenda and promote cooperation in cities that were not reached by the Guarani project, such as Pedro Juan Caballero and Ponta Porá for example. Overall, considering the past and current practices in the transboundary management of the GAS, the entry into force and the implementation of the GAA “promises” to lead to more efficient cross-border cooperation.

Francesco SINDICO

Director
Strathclyde Centre for Environmental Law and Governance Reader in International Environmental Law
francesco.sindico@strath.ac.uk

www.strath.ac.uk/scelg



"EcoCuencas"

Massive Open Online Course (MOOC)



The “EcoCuencas” project, funded by the European Union’s WATERCLIMA program and coordinated by the International Office for Water (IOWater), INBO Secretariat, came to an end in December 2017 following three years of implementation in three pilot basins in Latin America:

- The Rio Chira-Catamayo transboundary basin, shared between Ecuador and Peru;
- The Rio Grande II dam basin in Colombia, which serves the town of Medellin.
- The Piracicaba, Capivari and Jundiá (PCJ) basins, which supply water to the city of Sao Paulo in Brazil.

Following preparation of methodological and summary works developed by the Ecologic Institute and the OECD

on economic and financial mechanisms for managing water in a climate change context, the Latin American partners (National Water Secretariat of Ecuador, Cuenca Verde Corporation in Colombia, PCJ Agency in Brazil, National Water Authority of Peru) developed innovative pilot measures.

These measures supported implementation of levies and/or payments for environmental services at various scales (including micro-river basin, basin, and national territory levels).



The results and methods were consolidated by the nine partners of the project and are presented in a massive online open course (MOOC), available in Spanish on the IOWater website:

www.oieau.org/mooc/eco_cuencas



Brazil



PCJ Basins: implementation of the first Capacitation Center in Sanitation and Water Resources

This initiative is the result of a Cooperation Agreement between the PCJ Consortium, ARES-PCJ and the PCJ Basin Agency, inspired by the French model of Limoges

The PCJ Consortium, the ARES-PCJ regulation agency and the PCJ Basin Agency signed last September a cooperation agreement that will enable the implementation of the 1st Capacitation Center in sanitation and water resources of the PCJ Basins, located in the State of São Paulo, Brazil. The purpose of the initiative is to train operators and technicians in the supply services, thus generating improvement of the services provided to the population.

On this occasion, it was also announced that the three first pilot courses of this Center would be held in 2018.

The initiative will also cover municipalities out of the PCJ Basins, since the operation area of ARES-PCJ covers 55 cities, 20 of which are located in other river basins, which will expand the project's scope.

The Capacitation Center is currently being called "Escola da Água" (School of Water) and was inspired by the French model implemented in the city of Limoges. The three PCJ entities held a prior meeting with the main directors of the supply services of the PCJ Basins to present the project to implement the center and find which areas

should be prioritized by the courses at first, among which the following were highlighted: sewage and water network maintenance, water quality monitoring and diagnosis and system maintenance and operation, metrology, and customer services. It was also defined that the courses shall have a minimum 40-hour duration.

The three entities also defined that the PCJ Consortium shall be in charge of managing the Capacitation Center and holding the courses, which will focus on practical exercises to take place on several locations of the PCJ Basins, to increase participation without prejudice to the operation of the supply services due to employee absences.

PCJ Basins already have unparalleled advantages as compared to the Brazilian reality in sanitation. While Brazil treats only 45% of the sewage that is collected, PCJ has reached 75%, and some municipalities have a treatment capacity of 100%. The region is also a reference in the access to treated water, supplying 99.9% of residences. The goal is to reach 2035 with all rivers in the basin meeting the regulations set forth in 1977, that is, with waters proper for human consumption after treatment.

Murilo F. DE SANT'ANNA

Director of Awareness and Commercialization
PCJ Consortium

murilo@agua.org.br

www.agua.org.br

20th ENCOB

The Basin Committees meet in Florianopolis

The 20th National Meeting of Basin Committees was held in the city of Florianopolis, State of Santa Catarina, Brazil, from 20 to 24 August 2018.

It dealt with the topic "The Future of Water: The Challenges of River Basin Committees".

It gathered 1,092 participants coming from all over Brazil, representatives of all sectors directly and indirectly related to water resources, especially representatives of water users, civil society, public authorities and private

companies, universities and traditional communities.

The National Meeting of Basin Committees (ENCOB) is an event that takes place every year in Brazil. It is articulated and coordinated by the National Forum of River Basin Committees in association with the Brazilian Network of Basin Organizations (REBOB). It is considered as the largest meeting of the sector and serving as a tool for integration of representations of the country's basin committees.

It gathers various stakeholders to share successful experiences, integrate actions and activities for water resources and strengthen participatory water management.

In this edition held in Florianopolis/SC, Brazil, ENCOB celebrated its 20th anniversary and planned various conferences and debates focusing on innovation, transparency and on the possibilities and results of water-resource-related actions, besides promoting the qualification courses that have trained more than 900 people.

At present, Brazil has created 256 basin organizations directly and indirectly involving more than 90,000 people representing all sectors concerned with water-related issues.



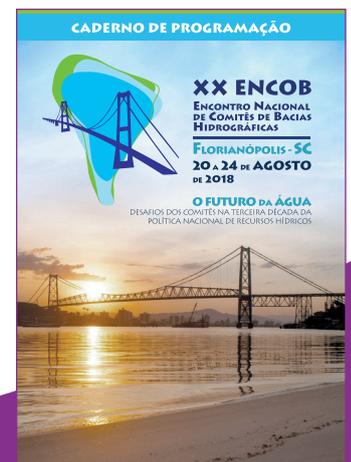
XX ENCOB
ENCONTRO NACIONAL
DE COMITÊS DE BACIAS
HIDROGRÁFICAS

The 21st ENCOB will take place in October 2019, in the city of Foz do Iguaçu, in the State of Paraná, Brazil.

Lupericio ZIROLDO ANTONIO

REBOB President
enlupericio@uol.com.br

www.encob.org



South America

Colombia



Integrated Water Resources Management: third stage of the Cooperation Program



An institutional project is supported by the French Adour-Garonne Water Agency and implemented by the Colombian Ministry for the Environment and Sustainable Development (MADS). It is pursued at central level in cooperation with the General Directorate for Integrated Water Resources Management (DGIRH) and at pilot basin level with the Regional Autonomous Corporation of Boyaca (CORBOYACA).

This project consists in providing methodological advice to evaluate the National Policy on Integrated Water Resources Management (PNGIRH) and in suggesting tools for the operational process of this evaluation, centered on measuring results with quantifiable indicators at national scale.

A study trip was organized in June 2018 in the Adour-Garonne Basin. It was an occasion to illustrate the themes that have punctuated the cooperation project.

Among these themes, the Colombian partners chose in particular to develop the mechanisms in force for managing water risks. The specific climatic conditions in the country (high precipitation levels concentrated during

the rainy season) mean that flood risk management faces challenges of social acceptance (question of river mobility areas to meet the needs of riparian people); institutional issues (organization of responsibilities in the risk management cycle); technical challenges (grey options and green/hydromorphological infrastructure), and cultural ones (development of a prevention culture).

The visit thus featured stakeholders in France who had solved this type of challenge in the Adour-Garonne Basin (state services in the region, hydrometeorological services, Water Agency, French Agency for Biodiversity, public local basin units).

The result was fruitful exchanges on the field and discussion of shared problems.

Following an official request to pursue the cooperation, phase 3 of the project started in late 2018.

The anticipated work areas are: connections between planning levels; proposals for the institutional organization of IWRM at sub-basin, basin and macro-basin level; and public political instruments for the concrete implementation of the principles set out in legislation.

Ecuador



IWRM planning at the heart of exchanges

This cooperation program jointly financed by the Adour-Garonne Water Agency (AEAG) for the project "support for developing IWRM through SENAGUA" pursued its second phase during 2018.

The work began in 2016 following a Memorandum of Understanding signed by the different parties, including the Ecuadorian Water Secretariat (SENAGUA), the French Embassy, AEAG and IOWater, INBO Technical Secretariat.

2018 was marked by significant institutional developments in the country in terms of water resource management, with a rapprochement between the Ministry for the Environment and SENAGUA.

Following a list of needs formulated by the Ecuadorian partners, exchanges focused on the instruments of public water policy, in particular support for the National Water Resources Plan (PNRH).

The new PNRH approach was thus at the heart of the exchanges: water information system; development of green infrastructure and nature-based solutions; monitoring of the quality of watercourses using bio-indicators; links between national planning and basin planning; protection of catchments; and management of flood risks and mobility areas.

These expectations from the Ecuadorian partners also motivated to organize a study trip to France, from 11 to 15 June 2018, in Paris and the Adour-Garonne basin. The visit was an opportunity to meet various IWRM stakeholders in France: the Regional Directorate of the Environment, Development and Lodging (DREAL) Occitania, the Water Agency, the Adour Institution, the Central Service for Hydrometeorology and Support for Forecasting Floods (SCHAPI), the Company for

the Development of the "Coteaux de Gascogne", and the French Agency for Biodiversity (AFB).

These stakeholders presented their work and the historical development of IWRM in France based on their respective expertise. The visit was punctuated by technical and institutional exchanges on concrete management mechanisms. It also highlighted numerous challenges common to the Ecuadorian situation (quantitative management issues, management of critical situations like low water levels and flooding, social perspectives for IWRM, etc.).

In addition, activities continued with the Manabi River Basin District, including the driving work of Santa Ana City Hall to develop a water fund, and the activities of the Rio Portoviejo Basin Committee (inter-university cooperation, institutional exchanges, diagnosis stages of the plan).



China



Franco-Chinese cooperation for integrated management of the Hai River Basin



Members of the steering committee

As part of an agreement signed between China and France in 2009, a pilot project for integrated management of the Hai River Basin was

launched in 2011 with support from the French Seine-Normandie Water Agency (AESN), and participation from the SIAAP and "Seine Grands Lacs".

Phase 3, which has been running since 2016 and will come to an end in spring 2019, aims to pursue activities carried out in the Zhou River Basin (implementation and monitoring of a program of measures) and to develop a management plan in the Luan River Basin.

All activities are carried out with an emphasis on adapting to climate change.

The phase 3 steering committee was held last September in Beijing and gathered local stakeholders to determine the progress and general directions for the continued work.

The meeting was attended by the managing director of AESN, Ms. Patricia Blanc, and covered key areas. These included a summary of work to date, an analysis of its impact, and a discussion of problems encountered, leading to responses and a new focus for action. High-level representatives from the French and Chinese sides also participated in the meeting.

An evaluation process of phase 3 of the cooperation project was also carried out late last year.



Cambodia



Ongoing Program of Measures for the Stung San Basin

The third phase of this project, backed by the Loire-Brittany and Rhine-Meuse Water Agencies, strengthened support for the Cambodian government (MoWRAM) and the Tonle Sap Authority (TSA) in setting up a management plan for the Stung Sen River pilot basin.



Water tower and water treatment plant in Ngorn

Sessions to build capacities and train trainers were held in France and Cambodia for the Cambodian partners of the project at TSA and MoWRAM:

- The teams were trained in February 2018 on analyzing the quality of water at Phnom Penh and on the field. The training involved learning good measurement practices, using analysis kits, and interpreting results. A one-day field trip was carried out to make a first analysis in real life conditions.
- A mission in June worked on developing several communication tools and more broadly on starting to put together a communication plan suitable for the TSA's activities. A typical warning flood report was developed for publication on the MoWRAM Facebook page.

The design and architecture of the TSA website were reworked, and a web mapping was produced to indicate in real time weather and hydrological conditions on the basin.

- In France, a training course on analyzing water quality took place in November. This followed a mission on the same theme that had been organized in February. The course centered on analyzing organic and non-organic pollution and on presenting different dosage methods of metals and heavy metals.

Action focused on coordinating and developing access to drinking water for inhabitants in the basin.

This involved developing decentralized coordination projects (supported by the Water Agencies and implemented by NGOs like AREED and Safe Water Cube), and setting up an inter-community management initiative for basins.





Fourth phase of the Nam Ngum pilot basin project

The fourth phase of a project to strengthen IWRM in Laos, funded by the Loire-Brittany and Rhine-Meuse Water Agencies, kicked off in early 2018.

Main activities to date:

- A mission of experts supported the provincial division of MoNRE (Ministry of Natural Resources and the Environment) in Vientiane (Nam Ngum Basin). The aim was to update and complete action sheets describing the pilot measures selected from the Action Plan in order to implement them.

These action sheets define each objective, the necessary tools to achieve it, and an estimated budget. They were suggested to the World Bank as part of a funding request.

- Finalization of a summary of the characterization report of the Nam Sa-Nam Kadan, which was prepared with a team from the DWR (Department of Water Resources). GIS maps were updated, and the report will be finalized in early 2019. This work carried out by the DWR team enabled direct handling of the tools and methods present in the project's previous phases. The next step comprises various phases to develop a River Basin Management Plan.
- Following hacking, the Lao Water Information System (LaoWIS) server was reset and the project financed the installation of new software (a Windows server license and an antivirus) by a specialist company to protect the server from new attacks. LaoWIS is now operational once again.



The delegation took part in the Loire-Brittany Committee

- A study visit by the Lao delegation to France took place from 2 to 6 July in Paris and Orleans. The delegation, led by the vice-minister of MoNRE, participated in the Assembly of the Loire-Brittany Water Agency Basin Committee and went on a trip to the Isle Arrault wastewater treatment plant. The sharing of experiences on technical aspects (management

and prevention of floods by CNR, SANDRE tool by AFB) and institutional tools (Basin Committee, Water Police) fed discussions throughout the week and could provide examples for developing new tools in Laos.



River rejuvenations through participatory catchment management

In the State of West Bengal in India "Ushar Mukti" program has been adopted to rejuvenate rivers of the rain fed region of the state through peoples' participation. In Bengali language "Ushar Mukti", means freedom from barrenness.

This program was initiated to ensure water security in the 6 western districts of the State that regularly suffer from drought. A number of rivers and their tributaries originated from this western undulating forest-covered Chotonagpur Plateau receives around 1100 mm

average annual rainfall. Over the years the land use, land cover of the catchment areas of this region has changed significantly.

Large scale deforestation and decaying of old water bodies has affected the groundwater recharge, which fails to maintain the base flow of the rivers in dry season.

The region is covered by the sub-basins of 7 main rivers but a major part of the region falls under the sub-basins of 3 rivers namely Dwarkeshwar, Shilabati and Kangsabati rivers.

These 3 rivers and their 33 tributaries drain off about 80% of water from this region. Intervention is taking place at 2,344 micro watersheds in the catchment of the rivers in the 55 blocks or sub-districts. These sub-districts have been divided into 2 groups; intensive (11) and non-intensive blocks (44).

The interventions are planned from ridge to valley, although there might be simultaneous activities at different levels.

The program is funded from Government rural development programs like Mahatma Gandhi National Rural Employment Guarantee Scheme and Bharat Rural Livelihoods Foundation, implemented through local Govt. at village level and technical support provided by group of Civil Society Organizations.

The program measures have been designed to ensure reduction of runoff in monsoon, conservation of water for agricultural and other demand and recharging groundwater in the catchment areas of these rivers and streams so that stream flow during dry season continues.

The GIS based online project monitoring system has brought transparency and efficiency in program management.

The region was covered with forest few decades ago therefore special thrust on plantation has been given in the project.

Sujit CHOUDHURY
Integrated River Basin Management Society
riverbasinsociety@gmail.com

<https://irbmskolkata.weebly.com>



The Kangsabati River

Central and Eastern Europe, Caucasus, Central Asia

UNECE



8th Session of the
**MEETING OF THE PARTIES
TO THE WATER CONVENTION**



Meeting of the Parties to the Water Convention

10 -12 October - Astana - Kazakhstan



More than 15 countries announced their interest to accede to the Water Convention at the historic eighth session of the Meeting of the Parties to the Water Convention in Astana.

From 10 to 12 October 2018, around 600 participants from 88 countries (including both Parties and non-Parties), River Basin Organizations (RBOs), international organizations and NGOs gathered in Astana, Kazakhstan for the eighth session of the Meeting of the Parties (MOP8) to the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention) to discuss progress in transboundary water cooperation worldwide.

Serviced by the **United Nations Economic Commission for Europe (UNECE)**, the Water Convention aims to ensure the sustainable use of transboundary water resources by facilitating cooperation. In 2018, the Water Convention welcomed its two first Parties from beyond the pan-European region namely Chad and Senegal.

MOP 8 was the first Meeting of the Parties held in Asia. More than 15 countries expressed their interest to become Parties to the Convention.

The MOP 8 took stock of progress made in the past 3 years within activities implemented under the Convention in various areas.

For example, the joint work with INBO on climate change adaptation was presented.

The meeting also saw the launch of the first report on implementation of the Convention.

Future activities were also discussed and the new Program of Work for 2019-2021 was adopted. While this new program of work will continue most of the work areas initiated in the past, it will also explore new areas of work such as the financing of transboundary water cooperation. This topic was discussed in depth in the margins of the MOP8 during a high-level workshop organized on 9 October where the urgent need to create enabling conditions for investments in shared basins was stressed, namely through appropriate and strong legal and institutional arrangements for cooperation.

The meeting also launched three new publications: an implementation guide on addressing water related disasters and transboundary cooperation pre-

pared with the United Nations Office for Disaster Risk Reduction, an updated methodology on assessing the water-food-energy ecosystem nexus and a brochure on identifying, assessing and communicating benefits of cooperation.

A number of other decisions and documents were also adopted including the new strategy for the global implementation of the Convention in which a crucial importance is given to the strengthening and development of partnerships, such as with INBO and river basin organizations.

Diane GUERRIER

Associate Environmental Affairs Officer

UNECE

guerrierd@un.org

www.unece.org

Uzbekistan



International Conference on "Water for Land Reclamation, Economic Sectors and Natural Environment in the context of Climate Change"

An International Conference on "Water for Land Reclamation, Economic Sectors and Natural Environment in the context of Climate Change", organized by the International Network of Basin Organizations of Eastern Europe, Caucasus and Central Asia (EECCA-NWO), took place on 6 and 7 November 2018 in Tashkent.

Throughout the workshop, key stakeholders and participants exchanged views on current issues regarding the management, use and protection of water resources in Central Asia in the context of climate change.

It was especially pointed out that the current challenges facing the countries in the region, including climate change, the potential increase in water demand of neighboring countries (Afghanistan, China, Iran), population growth and economic and social changes, require appropriate adaptation measures.

In this context, it is important to establish long-term water strategies (2030-2050) for each country and to develop a regional action plan for sustainable and peaceful development.

Other issues were also addressed and discussed in detail regarding the role and future development of water and environmental sciences, building the capacity of key stakeholders, and continuing and systematic training of water management structure staff. and not forgetting public awareness.

The next conference of the network will be held in 2019 on the theme "Science and innovations for water security" as part of the XV International Scientific Congress and Exhibition "Water of Russia 2019", to be held in Yekaterinburg.

www.eecca-water.net



Participants in the Conference



Central and Eastern Europe, Caucasus, Central Asia

Kyrgyzstan / Kazakhstan



Chu and Talas Transboundary Basins

Water accountability

The project on “Water Accountability in the Chu-Talas Transboundary Basins” funded by the SDC (Swiss Development and Cooperation Agency), aims to promote modern, sustainable, transparent management of water resources in the Chu and Talas Basins (Kazakhstan, Kyrgyzstan).

One of the specific targets of the project is the modernization of processes to manage demand and distribution of water for irrigation in the entire Chu and Talas Basins.

The existing system involves communicating data on water demands by fax or telephone between services.

The Water Information System (WIS) currently being installed will be used to securely communicate and interrogate data in almost-real time from work stations and tablets.

Data are available for operational use and for writing reports and are prepared to make them easy to access and understand by all stakeholders, from water user associations right up to national and transboundary level.

The activities, carried out in collaboration with local experts, consist in improving shared management and data processing, as well as the production and dissemination of information according to needs.

Thanks to this system, local bodies responsible for distributing water for irrigation can now use a tablet to follow online the everyday status of this distribution on the entire network.

In addition, new information services (reports, indicators, newsletters, maps) will be developed for national and basin authorities to make it easier to monitor distribution on each irrigation sector and canal.

At transboundary level, the system will also facilitate production and exchanges of information, thanks to the regular publication of transboundary newsletters on the situation of water resources and uses.



Lastly, the system should also serve as a model for effective management of transboundary waters at national and regional levels.

Water and Ecosystems in Central Asia and the Caucasus (CACENA)

To the present day, society perceives the preservation of ecosystems as a minor task concerning only the agencies responsible for nature protection. There is not yet a legal status for the “preservation of ecosystems” in normative documents of countries of the Caucasus and Central Asia, and agencies responsible for the preservation and maintaining of ecosystems within the framework of the state governance are not specified as well.

The Ministries of Nature Protection are responsible for many aspects related to nature protection (from the wastes disposal control to the recovery of penalties for non-observance of ecological laws), but functions directly related to

the preservation of ecosystems were not exactly specified.

Therefore, the agencies responsible for nature protection do not still solve the issues related to ecosystems and their water requirements. One of the basic causes of degrading aquatic ecosystems in the sub-regions is inefficient management and lack of public awareness concerning the major functions being implemented by these ecosystems.

On-going degradation of the Aral, Black, and Caspian seas, reducing biodiversity and biological resources, and adverse changes in transboundary river flows are universally known. “These processes result in deteriorating drinking water quality and health of the population, in decreasing land productivity and crop yields, and in the growth of poverty, unemployment, and migration”.

The CACENA States face the acute need in developing and implementing integrated actions aimed at settling the increasing problems of destruction of aquatic ecosystems. The UN Declaration on Environment and Development (Rio Declaration), UN Sustainable Development Program “Agenda 21”, UN Millennium Declaration and other international documents consider the protection and preservation of ecosystems as the integral part of the developing process. The UN SDG adopted by Heads of States and Governments, sets a list of the principles of sustainable development and declares the firm intention to adopt in all our environmental actions a new ethic of conservation and stewardship.

The Ecosystem Assessment Report confirms that on-going degradation of ecosystems is the major obstacle on the way of achieving the SDGs.

At the Pan-European Ministerial Conference held in Kiev, the preservation of aquatic ecosystems was declared as the priority sub-regional goal (Goal 1) in Central Asia. In accordance with these goals, the group of experts with support of CAREC has studied the status of aquatic ecosystems in Central Asia and the South Caucasus based on available information. It is expected that this report will promote public awareness with respect to the degradation of aquatic ecosystems in the sub-region, as well as formulating the topical tasks in this field and developing efficient strategies and mechanisms for regulating their vital functions.

Bulat K. YESSEKIN

Public Advisory Council

CAREC

bulat.yessekin@gmail.com

Central and Eastern Europe, Caucasus, Central Asia

RAINMAN CE 968

3rd transnational working group meeting - Pilot Actions

13 - 14 June 2018 - Zagreb - Croatia



Since June 2017, project RAINMAN - Integrated Heavy Rain Risk Management - has been realized within the Interreg Central Europe Program. Heavy rain events are a major environmental risk in Europe: they can hit any location with only very short warning time. In the RAINMAN project, partners from 6 countries have joined to develop and test innovative methods and tools for the integrated management of heavy rain risks.

During last meeting in Zagreb, as part of the 3 pilot actions package, the leader of which is IMGW-PIB (Poland) all partners presented the developed methods and their implementation in selected 7 pilot areas characterized by different geographical conditions: Saxony, South Bohemia, City of Graz, City Tiszakécske/Kunhegyes, Zagreb/Istria, Lower Silesia, Upper Austria.

Based on the review of the information for all pilot areas in the RAINMAN project, testing of risk mapping methods and risk reduction measures will take place in following functional areas: 4 urbanized areas, 4 agricultural areas, two semi-urban and two agricultural areas, and one coastal area. In seven pilot areas with different characteristics, the process of identifying data necessary for risk mapping and for implementing risk reduction measures to decrease damages of heavy rain was started. In addition, examples of good practices used in pilot areas have been inventoried. Good practices can be a contribution to the catalogue of measures for different risk situations, which is connected with risk reduction tool and delivers an input to further planned products in RAINMAN project.

Outputs of these activities will be used to formulate general priorities and approaches to the assessment and mapping and for the prevention of heavy rain events. These priorities and procedures will be implemented into different conceptions of the pilot regions e.g. Spatial Development Principles.

Mariusz ADYNKIEWICZ-PIRAGAS

Iwona ZDRALEWICZ

Institute of Meteorology and Water Management
National Research Institute (Poland)

mariusz.adynkiewicz@imgw.pl

www.interreg-central.eu/Content.Node/RAINMAN.html



Moldova

Improvement of the governance in the Nirnova sub-basin

Since 2017, Solidarity Water Europe (SWE) has been carrying out a project in the Nirnova sub-basin (Moldova) dedicated to the implementation of good water governance, based on two main principles: inter-municipality and river basin management. Covering about thirty villages, the project aims to federate the elected representatives of the sub-basin into an "Association of Mayors", responsible for the management of water supply and sanitation services (WSS) in the territory.

SWE started from the observation that in Moldova, municipalities are very often isolated when it comes to implementing national policies to provide citizens with decent access to water and sanitation services.

This weakness is mainly due to a lack of financial resources, political weight or technical expertise within the municipalities.

This is why it appeared necessary to encourage intermunicipal cooperation and the pooling of resources to meet these challenges and enable municipalities to provide adequate WSS services. Indeed, collective and shared water management would allow stakeholders to share tasks in the sector, make economies of scale and implement a real strategy for concerted multi-year action in the field of water and sanitation throughout the sub-basin.

In fact, SWE is working to set up an Association of Mayors, bringing together the elected representatives of the sub-basin municipalities.

This Association will have the political initiative in terms of WSS and should eventually be able to act as a water and sanitation project manager, capable of promoting real measures for the development of the territory and this, in accordance with the river basin management plans proposed by the basin committee.

The project is part of a decentralized cooperation approach and has brought together many Moldovan and French water stakeholders, thus making it possible to launch a real collective reflection on the intermunicipal management of water and sanitation services.

In accordance with the major national policies of the sector, however, the intermunicipal management of WSS services is still far from being generalized; the project led by SWE is therefore a pilot in this field and is intended to be replicable in other sub-basins of the country.

Sarah DOUSSE

Solidarity Water Europe
sdousse@sie-isw.org

www.sie-see.org

Visit of the Iurceni wastewater treatment plant equipped with reed bed filters (Raion of Nisporeni, Moldova)

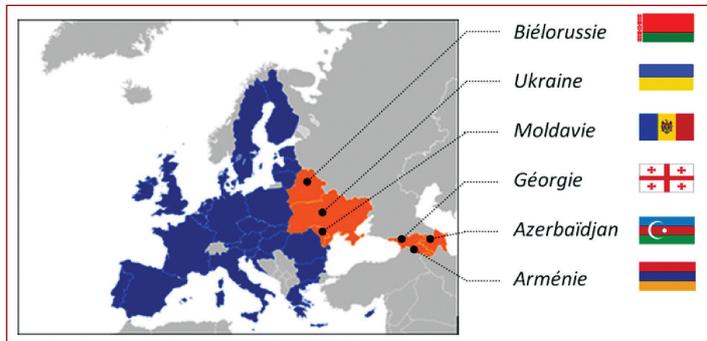


Central and Eastern Europe, Caucasus, Central Asia

EUWI+ for Eastern Partnership



Basin management in 6 countries in Eastern Europe and the Caucasus



This four-year project (2016-2020) is one of the European Commission's flagship measures in water resource management. It is part of the Eastern Partnership (EaP), which concerns six countries: Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine.

The project was initiated by the European Commission's Directorate-General for Neighborhood Policy and Enlargement Negotiations (DG NEAR), which provides the main funding, supplemented by co-funding from participating Member States (Austria and France). For France, the Artois-Picardy Water Agency, which is the country's reference agency in this region, provides the French financial contribution to this ambitious project.

One of the original features of the project is that it combines the efforts of four major cooperation partners in the field, i.e.:

- IOWater, INBO Secretariat, which represents the French Ministry for Ecological and Solidary Transition and the Artois-Picardy Water Agency. This involves: planning in 10 river basins in 6 countries, covering a total area of over 450,000 KM²; setting up basin organizations and stakeholder involvement; deploying/reinforcing Water Information Systems;

- The Austrian Environment Agency (Umweltbundesamt), which is responsible for delimiting water bodies, monitoring surface and groundwaters, and supporting accreditation and equipment of laboratories;
- OECD and the United Nations Economic Commission for Europe (UNECE), which are running a more institutional component aimed at reinforcing the convergence of each national regulation with the European Union Water Directives, and leading inter-ministerial processes of National Dialogue in each country.

The project's progress is followed at high level at the ministries responsible for water and the environment in each of the six beneficiary countries. To ensure its concrete and sustainable progress, the project works to build the capacities of the administrations and bodies in charge of water management, set up sub-contracting and local expertise, and supply laboratory equipment.

It takes an innovative approach that combines technical assistance with institutional twinning.

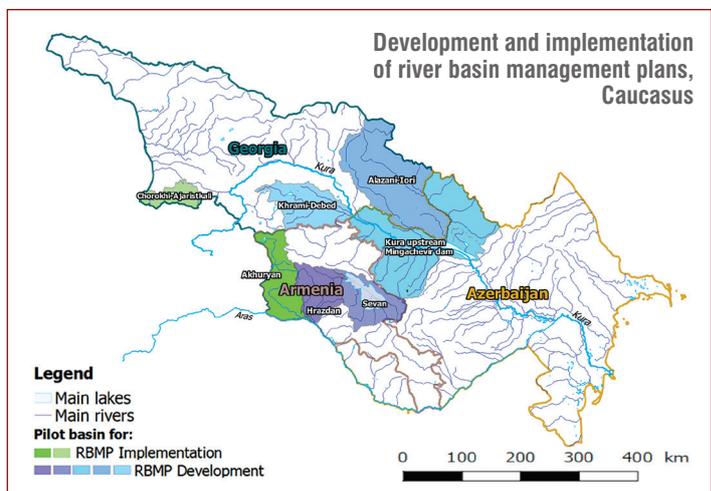
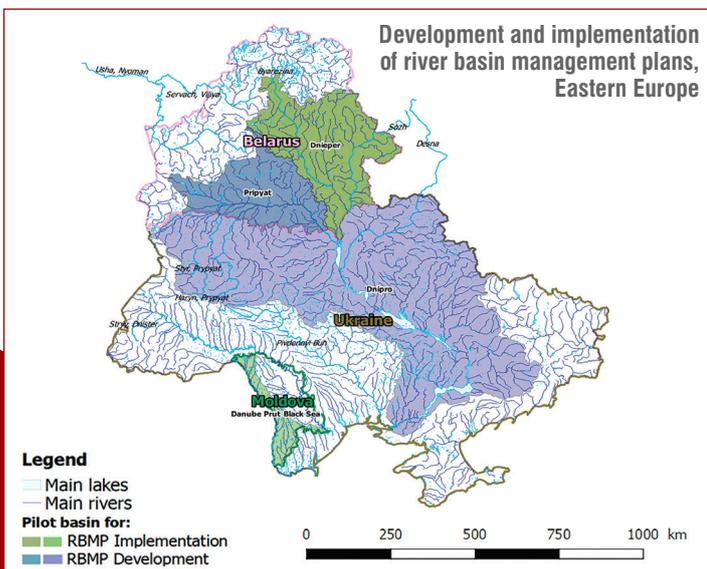
This has involved developing the following:

- Analysis per country followed by initial recommendations for basin planning, data management and stakeholder involvement;
- Mobilization and support for local experts to acquire knowledge on planning at basin level;
- Training seminars on the different planning stages to build the skills of specialist teams;
- Communication tools (including the project's website www.euwipluseast.eu), video clips to raise public awareness, and specific general public events (like Dnieper Day in Ukraine and Belarus).

www.euwipluseast.eu



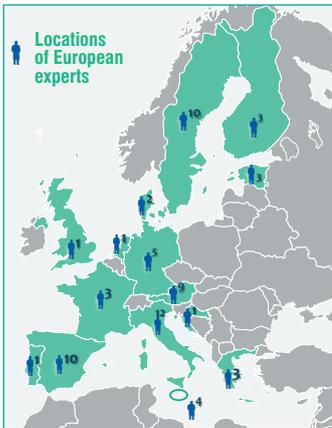
Action funded by the EUROPEAN UNION





Peer to Peer

New phase for the cooperation mechanism between European basins to implement the Floods and Water Framework Directives



In November 2017, the DG Environment of the European Commission once again selected the consortium formed by the International Office for Water, INBO Secretariat (France,

leader partner), the National Institute of Hydrology and Water Management (Romania), the Secretariat of the Mediterranean Network of Basin Organizations (Spain) and the Ecology Institute (Germany) as part of a new "Peer-to-Peer" project to exchange expertise between Member States.

This program continues the peer review process set up over the period 2015-2016. Its aim is to make available to basins a voluntary system for organizing missions to exchange between peers on implementation of the Water Framework Directive and the Floods Directive.

The first step involved a call for applications sent to European practitioners interested in carrying out support missions on the two directives. Over forty applications were made from thirteen European countries, in particular Nordic countries which are familiar with the benefits of crossed reviews.

In parallel, a dozen "competent basin authorities" applied to benefit from an expert mission.

Based on detailed terms of reference, the secretariat of the mechanism is responsible for selecting the most suitable experts for each mission and guiding their preparation.

Following a preparation meeting organized at long distance between stakeholders and with support from the project's secretariat, technical missions will last about a week and result in reports setting out recommendations by each expert aimed at the basin authorities.

All of the documents related to the Peer Review Mechanism from the previous phase and the new "Peer-to-Peer" project are available on the project's website.

Some missions are still available, why not apply to take part?

www.aquacoope.org/peertopeer

eurostat

Training of statisticians from 13 countries

Eurostat, the European Commission's statistics service, collects national and regional statistics on small and large water cycles from European Union Member States.

The data are collected by national statistics institutes in the Member States, which fill in a common questionnaire.

To help national statisticians understand the key concepts of the water domain and the rules for aggregating data to obtain accurate, representative statistics, Eurostat offers training courses taught by a panel of external specialists.

As part of this program, IOWater, INBO Secretariat, in partnership with Sogeti and the Austrian institute UBA, received 13 statisticians of 11 nationalities for a course at its Paris headquarters from 4 to 6 June 2018, along with the Eurostat representative for water statistics.

The course, which has taken place since 2012, combines theoretical information, practical exercises and maximum interactivity, leaving ample room for exchanges between participants.

To improve understanding of the key concepts of sanitation, a field trip was organized to a water treatment plant at "Seine Centre" following an invitation from SIAAP.

Thanks to the efforts of three staff from the presentation team at the "Cité de l'Eau" (Water City), attendees were shown the different stages of the treatment process applied to a real case.

To make the training even more concrete, it was supplemented by a presentation from an expert from the Seine-Normandie Water Agency to show how the Water Framework Directive is implemented in the basin.

Meuse and Scheldt Rivers

Participative workshops for the 20th anniversary of the two International Commissions

To celebrate twenty years of international agreements to protect the Meuse and Scheldt Rivers, Members of the two Commissions gathered on 13 September 2018 in Charleville-Mézières.

They looked back over the two decades of international cooperation and towards the future of both districts.

During the afternoon, two workshops addressed the key subjects of qualitative and quantitative management.

They were a chance for members of the commissions to express their opinion, using participative methods, on the future of the districts. The result was a list of recommendations for more efficient water management in the Meuse and Scheldt River Basins.



The Meuse



16th European “EUROPE-INBO 2018” Conference



The 16th Conference of the “EUROPE-INBO” group took place in Seville, Spain, from 17 to 20 October 2018.

It gathered 237 participants coming from 42 countries.

The work of this conference was organised around a workshop on Invasive Alien Species (see page 36) and 4 roundtables on current issues, such as the prevention of drought: the interest in Nature-Based Solutions, international cooperation and the review of the Water Framework Directive (WFD).

Prevention of drought is required especially due to climate change.

It involves the adaptation of water resources management at basin level, through short, medium- and long-term planning of measures, as part of the implementation of the WFD and Flood Directive.



The Paris Pact on “Water and Adaptation to the Effects of Climate Change in the Basins of Rivers, Lakes and Aquifers” and the INBO publication on “Water and Adaptation to Climate Change in Transboundary Basins” provide valuable recommendations for carrying out adaptation in basins.

Based on a shared knowledge of the basin’s vulnerability to drought and floods, preventive actions should be carried out: water storage, reduction of water flow, water retention, control of the waterproofing of soils, recovery of rainwater and runoff water, groundwater recharge, reuse of treated wastewater, conservation of floodplains.

The establishment of desalination units is necessary in some cases

Actions for rationalizing and reducing the use of water resources are to be developed, e.g. reasoned irrigation, water saving and recycling techniques or processes without water in industry.

Suitable and effective monitoring networks for surface and groundwater, the exchange of “best practices”, a “drought crisis” or “water scarcity” management plan should provide a proportionate, coherent and prioritized response.

The Basin Management Plans and Programs of Measures of the 3rd WFD cycle should integrate this set of actions in consistency with the other components of these management plans and with the implementation of the Directive on Flood Risk Management. The approach must be multisectoral involving all economic stakeholders and the civil society.

It is also of interest to combine conventional hydraulic structures, called “gray” infrastructure, with Nature-Based Solutions (NBS) to face the challenges of climate change in a context of scarcity. These NBS can improve their resilience, optimize performance and reduce costs.

The restoration of wetlands, ponds, marshes, preservation and management of floodplains, actions enabling the infiltration of rainwater, the reduction of runoff are all examples that have shown the relevance of NBS.

This approach should be fostered by the WFD, especially to achieve the objective of Good Ecological Status of Water Bodies. The European Commission’s Blueprint of 2012 indeed proposed the **Natural Water Retention Measures (NWRM)** for better WFD implementation. They have been defined and structured through a European web platform (nwrn.eu).

The participants in the conference recommended that the European Union (EU) provide support for disseminating guidelines on the use of NBS in sustainable water resources management, to enhance knowledge in this field and to improve their technical implementation and their financing mechanisms.

The importance of transboundary waters in Europe calls for the development of international cooperation for the implementation of the European Water Directives.

The European Union and the Member States should develop these coordination and cooperation structures to ensure more coherence and transboundary efficiency and better solidarity both within the EU and with the neighboring countries, like the International River Commissions already created by treaties between European riparian countries.

International cooperation for the development of IWRM and the improvement of water governance in the basins is a major factor of progress. The participants in “EUROPE-INBO” Conference recommend developing common databases and tools, mobilizing European funds for transboundary cooperation projects, promoting the participation and education of young people, developing agreements on transboundary aquifers.

“To facilitate the implementation of European Water Directives”

17 - 20 October 2018 - Seville - Spain



Closing ceremony © INBO

They also recommend supporting international river commissions, which have proven their effectiveness, and promoting the exchange of data and know-how.

“Twinning” programs between countries and basins have proven their worth in previous years and should be redeveloped.

Structuring partnership projects are also to be developed, such as the EUWI+ East project, as well as exchanges among practitioners of Member States (the “Peer-to-Peer” project).

In anticipation of the WFD review, the European Commission proceeded with the evaluation of the Basin Management Plans.

Before the end of 2018, the Commission will present to the European Parliament an assessment report on the second management cycles of the WFD and the first cycle of the Flood Directive. This report will underline the need to re-examine the WFD.

The first results show progress in stakeholders’ participation, knowledge of the status of water bodies and in the results’ level of trust.

The deterioration of the water status has stopped everywhere in Europe, but the link between pres-

sure and impact needs to be better understood and the monitoring of polluting substances remains a major challenge.

Progress is also expected in the definition and implementation of the ecological (environmental) flow, the economic analysis, the protection and management of protected areas as well as in drought management plans.

Challenges are still to be met in the implementation of the Flood Directive, e.g. the definition of more measurable objectives, a more complete cost estimate, ecological continuity or links to be created with Climate Change adaptation.

The participants in the conference stressed the need to involve the Member States and basin managers as closely as possible in reviewing the WFD.

Taking into account the first conclusions of the Commission, they questioned the operational and pragmatic implementation of the Directive. It seems essential to rely on the experts of basin organisations, keeping in mind that success also depends on the support of basin organisations, local authorities, economic stakeholders and all European citizens in the field.

Better involvement of field stakehol-

ders is thus necessary in the review of the Directive.

The Conference participants believe that there is also a need to highlight the progress made that should be widely publicised. The very penalizing “one out - all out” principle should be reviewed as it masks the very real progress that has been made.

The participants recalled the urgency of taking new pollutants into account.

They reminded the need for greater coordination and even compatibility between the European water policy and other EU economic and sectoral policies, such as the CAP, the transnational transport policy or the renewable energy policy.

An adaptation of quality or discharge standards in relation to the environments is to be sought for, especially for the specific situation of outermost regions of the EU.

It was also suggested that support to enterprises be increased for projects that aim at meeting the goals for discharges into the environment, whose payback rate is long.

Finally, adaptation to climate change needs to be prominent in future work and becomes a priority.

More generally, the participants in the “EUROPE-INBO” conference consider that **we should pass from the WFD “virtuous and theoretical concepts” to a practical approach based on real local situations.**

They considered that the efforts made to implement the WFD need to be increased and supported so that all EU Water Bodies get closer to “Good Status” within a reasonable and realistic time frame.

The next “EUROPE-INBO” Conferences will be organized in Lahti, Finland, from 17 to 20 June 2019 and in Malta in 2020.



The 16th Conference ended with a warm tribute to Mr. Jean-François Donzier, INBO General Secretary for 24 years, for his

constant and effective commitment to the network with dynamism and enthusiasm.

The members conferred him the title of Honorary General Secretary of the Network.

He has now passed on the torch to Mr. Eric Tardieu, new INBO General Secretary.

www.inbo-news.org

SAVE THIS DATE! 17th International "EUROPE-INBO" Conference

17-20 June 2019 - Sibelius Hall - Lahti - Finland

"Let's discuss the future of the European Water Directives and affirm our ambitions!"

Organizations, administrations and other stakeholders interested in basin management are invited to participate in the event and share their experiences on basin management.

Program:

- **1 workshop** (English only) on "Integrating Nature-Based Solutions (NBS) into WFD Programs of Measures for basin restoration with a focus on lakes: governance, implementation, evaluation".

- **4 roundtables** (French / English) on the following themes: "Water quality: ecological status and the challenge of microplastics", "Agriculture and climate change", "WFD review" and "Sea-basin interface".
- **1 special session** on "International and Transboundary Cooperation".

To register and for any information (program, hotel booking, transport), please visit the INBO website:

www.rioc.org/en/events/europe-inbo-2019

We're counting on your participation!



Spain



Workshop "Invasive exotic species"

Prevention and management solutions

Invasive exotic species present a serious threat to indigenous animals and plants, causing billions of euros of damage to the European economy every year.

The European regulation on invasive exotic species came into force on 1 January 2015.

It sets out a series of measures to be implemented in Europe to respond to this issue.

Among these invasive exotic species, some feed off aquatic environments and can impact the good ecological status goals required by the WFD for rivers, lakes, coastal and transition waters.

To debate the issue, a workshop was organized on the theme: "Invasive exotic species: prevention and management solutions", during "EUROPE-INBO" 2018 held in Seville, Spain in October 2018.

At the workshop, 62 participants attended a presentation of feedback on

strategies and case studies from different Member States and basins. The practical exchanges within the working groups underlined the importance of seeking synergies between implementing basin management plans and policies on invasive exotic species.

Concerning monitoring systems, WFD monitoring programs have already gathered interesting data that could be used to monitor invasive exotic species.

The key importance of invasive exotic species when setting up management measures was also underlined during the workshop, with the aim of developing integrated and versatile solutions.



The Seville workshop



Spain



LifeWatch ERIC

European Research Infrastructure Consortium for Biodiversity and Ecosystems: Its usefulness in management at basin level.

The European Commission has awarded the legal status of European Research Infrastructure Consortium (ERIC) to the European Virtual Infrastructure of Science and Technology for Research on Biodiversity and Ecosystems (LifeWatch), having its central headquarters in Seville.

LifeWatch ERIC was born to allow researchers, environmental managers and citizens in general, to confront the major current challenges, for instance those related to climate change and to the loss of biodiversity and ecosystems, by using virtual research environments equipped with cutting-edge ICT tools to share, manage and model data.

Specifically, it intends to obtain value from the exploitation of distributed resources (networks of sensors, bases and data stores, etc), by relying on a distributed e-Infrastructure of communications, supercomputing and “cloud” (comprising networks of sensors, tools of Big Data and Blockchain), duly federated with other major initiatives on the subject matter (for example, the newly created European Open Science Cloud-EOSC).

The main benefit offered by LifeWatch ERIC in relation to basin management, is to meet the challenge to analyze and study how climate change affects biodiversity and ecosystems, from the perspective of Integrated Water Resources Management (IWRM).

Yet, in addition:

- The data, information and knowledge obtained on a day to day basis about the management, will be incorporated into a Pan-European Research Infrastructure whereby the results acquire a scientific and legislative value;
- The information will be shared with other national and international networks, be they on climate change, biodiversity or research: ICP Waters, ICP-IM (UNECE), GEOBON, GBIF, ...;
- The information (both of biotic and abiotic origin) will be analyzed with global models which will embed quantitative information with biodiversity, through distribu-

tion models of species, taking into account different climate change scenarios, with increase in water temperature and variations of flows. This will help foresee and analyze the consequences of a change in the management or in the availability of the resource, or even study the causes and consequences of scarcity.

Marta COPADO GARCIA

Guadalquivir Hydrographic Confederation
mcopado@chguadalquivir.es

www.lifewatch.eu



“Augas de Galicia”

The reversion of hydropower concessions and its planning

As the granting of a concession for hydropower exploitation is expiring, the basin agency must decide on the future of this exploitation, for each case, after information of the public and hearing of the concessionaire.

Before the imminent expiration of some of these concessions, the alternatives to consider, depending on the economic interest for the Water Administration, are as follows:

- For those that are not economically viable, there will be two alternatives:
- ❶ The complete destruction of the facilities and the return of the land to its original status;
- ❷ The conservation of part of the facilities without hydropower production, either because they have

a heritage interest or because they have a positive impact on the environment.

- For those that are economically viable and that remain interesting for hydropower generation, the Water Administration, on the basis of technical studies, will validate the continuity of the exploitation for the production of electricity from a renewable energy source, without overexploitation of the water resource nor the installation of new obstacles in the river.

The concessions, which in principle, seem economically viable and could have economic benefits for the administration, are those with an estimated production of more than 3 GWh / year.

Proposed actions:

- Given the complexity of dealing with these concession rights, it is considered more appropriate, in all respects, to plan an indirect exploitation of their economically profitable uses;
- Keeping this in mind, a call for tenders should be launched for the operation of facilities whose concession is not renewed. The company that wins the call for tenders, will take over the operation of these facilities. following a special procedure governed by the water regulations, imposing



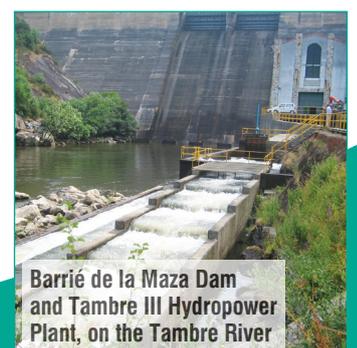
augasdegalicia

on the concessionaire-operator the obligation to pay a finalist fee for hydropower production, and generating revenue for the Water Administration with the objectives of improving and conserving the watercourses.

Isabel LÓPEZ ÁLVAREZ

Augas de Galicia (Water Directorate of Galicia)
isabel.lopez.alvarez@xunta.es

<https://augasdegalicia.xunta.gal>



Barrié de la Maza Dam and Tambre III Hydropower Plant, on the Tambre River





Water and Climate



The French Water Agencies are committing themselves

The French Water Agencies are committed to fight against the impacts of climate change in the water sector, in France and internationally.

In 2015, on the occasion of the COP21 held in Paris, these Basin Organizations had signed INBO's "Paris Pact" to promote and implement the principles and tools needed to adapt to climate change in the basins of rivers, lakes and aquifers.

With the 11th 2019-2024 Action Plan that the Basin Committees and Board of Directors of the Water Agencies adopted at the end of 2018, 3 billion Euros (500 million Euros per year) will be invested for the adaptation to the effects of climate change in France.

By 2070, climate experts estimate, among other things, that decreases in French groundwater level and large river flow could reach 30% and 50%, respectively, with a direct impact on water quality: higher concentration of pollutants in aquatic environments.

At international level, the French Water Agencies have also launched a collective dynamic for climate action with their "20 water and climate projects for Africa" program.

This plan meets priority adaptation needs, particularly in the Sahel (among the target countries: Benin, Burkina Faso, Cameroon, Madagascar, Mauritania, Morocco, Senegal, Togo) and the thematic and geographic priorities of the Water Agencies in Africa.

It will especially aim at:

- Building capacity and knowledge;
- Planning for adaptation;
- Improving governance;
- Establishing sustainable financing mechanisms;
- Implementing "no-regret" measures such as Nature-Based Solutions (NBS).

The plan is an ambitious contribution to the Paris Climate Agreement as well as to the "100 water and climate projects for Africa". This initiative was launched as part of the Incubation Platform of the Global Alliances for Water and Climate (GAFWaC), by the "One Planet Summits" (OPS) held in Paris (12 December 2017) and New York

(26 September 2018) at the invitation of the President of the French Republic, the President of the World Bank and the UN Secretary General.

It should mobilize financial support amounting to 20 million Euros over a period of 5 years for the incubation of adaptation projects.

The "One Planet Summits" (14 March 2019 in Nairobi, 25-27 August 2019 in Biarritz) take on a strategic character for the Water Agencies: they will allow for a better political value of this structuring program, especially for major international donors of climate funds.

www.lesagencesdeleau.fr

Bauges Mountain

Climate change: from research to local actions

At the heart of the French Alps, between the "Sillon Alpin" (alpine corridor) and the lakes of Annecy and Bourget, the Bauges Mountain is a preserved middle mountain area. The Regional Natural Park of the Bauges Mountain proposes and facilitates a local project - materialized by its Charter - dedicated to local development and integrated management of the mountain natural resources.

The effects of climate change question this balanced local development regarding Integrated Water Resources Management (IWRM) in the upper part of the Cheran River Basin: sharing of resources in the pastures (tourism,

livestock); decrease in snow cover; increased evapotranspiration, maintenance of the "Wild River" label; etc.

Aware of this issue - highlighted in 2014 in the White Paper of its Climate Plan - the Park took part in the ARTACLIM project (Adaptation and Resilience of the Alpine Territories to climate change). Funded by the European program ALCOTRA (Alpes Latines COopération TRAnsfrentalière), this Franco-Italian research-action project aims to improve the consideration of adaptation to the impacts of climate change in the public policies for mountain lands. It brings together scientists, local authorities and relay stakeholders.

Accompanied by the ARTELIA consulting company, the Park intends, in this given framework, to establish adaptation strategies for three areas representative of the diversity of landscapes and land dynamics of the Park:

- The Semnoz Mount in the north, a preserved area near Annecy combining recreational and sylvo-pastoral activities;
- The central Bauges, structured by the Cheran Valley (stake of sharing water resources);
- The "Combe de Savoie" in the south, marked by viticulture and facing significant land pressure.

The process takes place in three main phases:

- The appropriation by the stakeholders of scientific knowledge, by showing how IWRM and the

effects of climate change question local dynamics and issues;

- The accompaniment of the stakeholders, relying on different decision making support methods and intended to pool the stakeholders' "local expertise";
- The definition of local strategies integrated into existing dynamics, which will thus be better identified by the stakeholders in charge of implementing them.

The results of this process will feed the new Park Charter (2023-2038), the continuation of the activities and conclusions of the ARTACLIM project.

Jean LECROART

Catherine FREISSINET

ARTELIA

jean.lecroart@arteliagroup.com

www.parcdesbauges.com





Union of the Cailly, Aubette and Robec River Basins

The unique structure is now in place!

For several months, a merger process has been initiated between the Clères-Montville river basin body (prevention of floods and runoff on the upper Cailly), the joint body for the Cailly Valley (maintenance of the Cailly and its tributaries), and the joint body for the SAGE (Water Development and Management Plan) of the Cailly, Aubette and Robec river basins (facilitation, studies and coordination in the Cailly-Aubette-Robec river basins).

Why this merger?

- To improve the management of the Cailly River and its main tributary, the Clérette, which is being maintained by two teams (upper and lower Cailly);
- To facilitate the management of the Aubette-Robec river basin, the prevention of runoff flooding is now shared between the Metropolis and the community of Caux Vexin Inter-Municipalities;
- To allow a global management of the Cailly-Aubette-Robec hydro-system, as the same actions can contribute to the prevention of floods and the protection of rivers;
- To clarify the role of different communities and facilitate access to subsidies;
- Finally, to create a real basin solidarity, from upstream to downstream, since our River Basin is one of the last in Seine-Maritime where the downstream areas do not participate in financing the prevention of floods in the upstream area.

The new structure will be in charge of the Management of Aquatic Environments and Flood Prevention (GeMAPI): River Basin development, maintenance and development of the watercourses,

flood control, and protection and restoration of sites, aquatic ecosystems and wetlands.

On the other hand, it will not be in charge of urban stormwater management which falls within the responsibility of the sanitation and management of agricultural water drainage, nor of the control of overflows of the Seine River.

Previous exchanges took place between elected officials of EPCI (Inter-Municipality Cooperation Public Body) in charge of the GeMAPI (in particular Caux-Vexin Inter-municipalities and Metropolis) and the Presidents of the current bodies to define the financing and governance procedures for the structure resulting from the merger.

The joint body for the SAGE of Cailly, Aubette and Robec River Basins therefore deliberated on 4 July 2018 to initiate the merger procedure with the aim of making the new structure operational on 1st January 2019. By decree of 23 July 2018, the Prefect of Seine Maritime instituted a project for delimiting a perimeter prior to the merger of the three bodies.

The Departmental Commission for Intermunicipal Cooperation has given a favorable opinion on the merger project and on 4 December 2018, the Prefect created, by decree, the Cailly-Aubette-Robec River Basin Structure.

This new structure of intercommunal cooperation had still to be installed. The meeting for creating the committee of this new structure was held on 9 January in the city hall of Déville-lès-Rouen.

It elected its President, Dominique Gambier, Mayor of Déville.

Then the Vice-Presidents: Robert Charbonnier (Intercaux Vexin community), Guy Durieux (Deputy Mayor of Canteleu), Benoit Anquetin (Mayor of Saint Aubin Epinay) and Francois Dupuy (Mayor of Saint Germain sous Cailly).

Now it's up to the new team to build this organization, and draft an action plan.

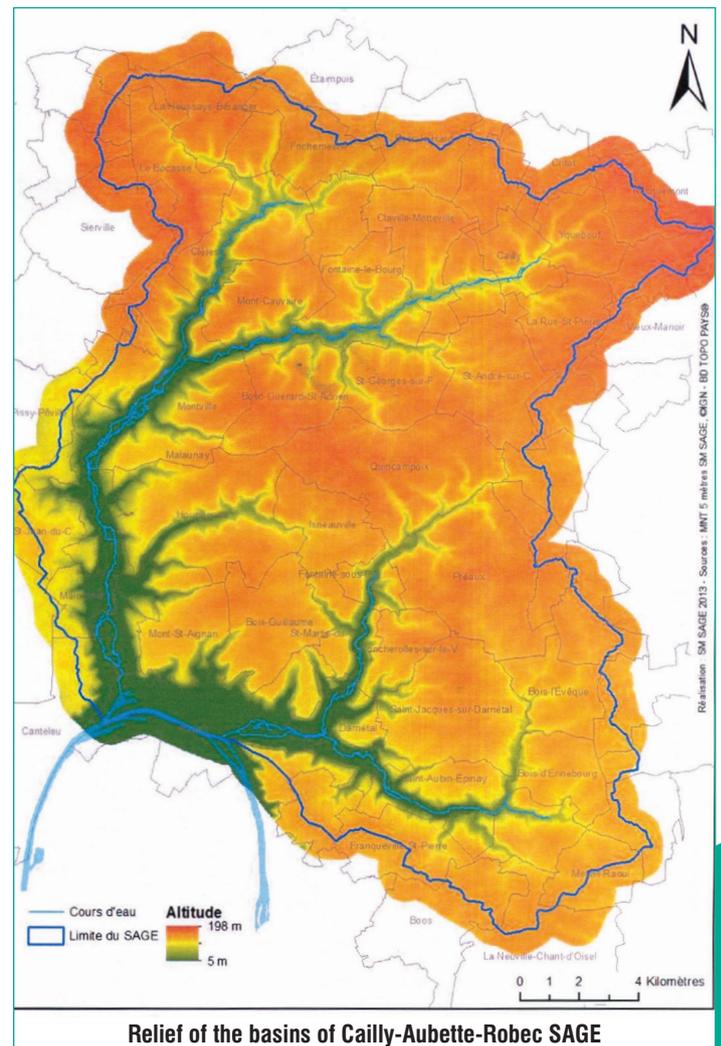
This unique new structure, which will intervene in the overall management of the great water cycle from the basin's ridgeline to the outlets in the Seine, involves transfers of personnel, assets and works from the former bodies and the Metropolis to this new structure resulting from the merger. It will

include 16 employees and it will move to Déville on the former site of Via Systems, now owned by the city of Rouen. The merger of the 3 existing budgets, financed by the inter-municipal structures involved, and aid from the water agency will allow this structure to have a budget of just over 2 million Euros.

The river basin covers 405 km², includes 71 municipalities and 250,000 inhabitants; it is crossed by 93 km of watercourses and is concerned with 56 water catchments and 23 wastewater treatment plants .

Dominique GAMBIER

President
Syndicat des Bassins versants
Cailly-Aubette-Robec
dominiquegambier@free.fr



Relief of the basins of Cailly-Aubette-Robec SAGE



2019 : A French action plan for a peaceful policy of restoring ecological continuity

Ecological continuity is part of sound water management at the river basin level. The improvement of its implementation should be based on planning tools (SDAGE, SAGE, basin contract and river contract) and existing local bodies (EPCI, syndicates, EPTB, EPAGE) while avoiding recreating what already exists.

The Environmental Code plans for a classification of rivers in which adequate sediments transport and the movement of migratory fish should be secured.

These rankings involve obligations of adapted actions on the structures that are found on these watercourses. Compliance with these obligations has given rise to lively reactions and oppositions, which have led to blockages, in some areas.

To resolve this situation, in May 2017 the National Water Committee (NWC) mandated a working group on the ecological continuity of rivers, open to representatives of riparian owners and defenders of mills.

One year after this mandate, the NWC gave a favorable opinion on 20 June 2018 on the principle of an action plan for a peaceful policy of restoring ecological continuity.

The next phase of consultation should allow the adoption of a tangible operational action plan, proposing methodological and organizational elements so that local and national discussions can take place peacefully to serve an effective implementation of public action, at technical, administrative, social and economic levels.

A technical note will be disseminated to all deconcentrated services, in charge of the local implementation of this action plan. Its purpose is:

- to provide national guidelines, adaptable to the local context, for the establishment of the program of prioritization of action on the structures;
- to propose governance methods allowing better coordination within State services, and with their public bodies for the operational implementation of this plan, by specifying the respective role of each one;
- to support a case-by-case analysis to find the best possible balance between the policy of restoring ecological continuity, heritage policies in all their territorial dimensions and the policy of hydropower production;

- to provide elements to guide the development of equipment projects for the hydropower production by structures that are found on rivers ranking in List 1 and on which special precautions are necessary and refusals may sometimes be preferred.

The prioritization criteria are at the core of the future action plan. They meet ecological objectives crossed with an opportunity analysis, summarized as follows:

- the levels of challenges on the watercourse;
- the levels of impact of the structures;
- the criteria of opportunity and technical and administrative simplicity, which may be used at the second level of “selection”, such as the presence of a public contracting authority, or even at the first level, e.g. at the renewal of a hydroelectric concession.

This prioritization will be based on the sectors and structures already targeted as priorities in the planning documents: SDAGE, PLAGEPOMI, SAGE.

It means acting as far as possible under a global reflection on the river scale.

The basin coordinator prefect will pilot the establishment of the prioritization plan with the basin technical secretariat.

Other ways can improve the field implementation of the plan:

- inter-thematic training (assets, continuity, human and social sciences, hydropower) to develop a common culture;
- mobilization seminars for deconcentrated State services;
- an AFB resource center gathering the available data, the various technical solutions available, as well as feedbacks.

Many solutions are possible to restore ecological continuity while taking into account the multiplicity of issues crossed by this action. There is no theoretical solution. Several scenarios will have to be analyzed in terms of advantages and disadvantages in order to identify the best compromise.

This consultation should be conducted as far upstream as possible, both on the diagnosis of all the issues involved, the expected objectives, and on the means to be used, between State services, their operators, project leaders, basin structures, the local authorities concerned, other stakeholders (local residents, civil society, associations).

Restoring the ecological continuity of rivers should now be at the crossroads of different public policies:

- Achievement of river good status;
- Development of renewable energies, hydropower in particular;
- Conservation / preservation of built assets;
- Development of sports and nautical recreational activities.

The pace of 600 structures “developed” per year is proposed, out of a total of more than 10,000 “to be developed” in 2018, even if they are not all to be developed or modified.

Claude MIQUEU

Chairman of the regulatory committee of the National Water Committee
Member of the Adour Garonne Basin Committee
claude-miqueu@wanadoo.fr



The Mediterranean and Middle East

SEMIDE

EMWIS

The Euro-Mediterranean Water Information System (EMWIS)

Better management of knowledge on water in the Mediterranean area

Focus on innovation

In March 2018, EMWIS acted as the voice of the Mediterranean at the World Water Forum in Brasilia (sessions on restoring ecosystems, reuse and data management) and participated in launching some innovative new projects to:

- Revolutionize value chains involving production, usage and recycling of water using **nature-based solutions for the Mediterranean islands**. This is the ambition of the **HYDROUSA** project for the next four years. EMWIS is responsible for exploiting the results for replication in the Mediterranean.

www.hydrousa.org

- Work towards a **Mediterranean cluster for innovation in greenhouse crops (MED Greenhouse)**: EMWIS gathers stakeholders from the Provence-Alps-Riviera region to pool and foster knowhow to give this sector impetus, with a Mediterranean approach based on water-energy efficiency, production with high added value, and short circuits.

medgreenhouses.interreg-med.eu

- Creation of a global network of excellence on **nature-based solutions for agriculture and urban regeneration** as part of the **EdiCitNet** project.

cordis.europa.eu/project/rcn/216082_de.html

Mediterranean Water Knowledge Platform

Following training and exchange activities in 2017 as part of the Mediterranean Water Knowledge Platform, guides on setting up National Water Information Systems (NWIS) and white papers on countries in the region were produced by the platform partners (IOWater - IME - EMWIS - MENBO) with support from the Prince Albert II Foundation of Monaco.

In parallel, support to define NWISs was put in place in two countries of the Union for the Mediterranean.

In Mauritania, as part of the Global Water Partnership program, "Water, Climate and Development (WACDEP) for Africa", a 10-year action plan with a €3.3 M budget dedicated to data management on water resources, was jointly defined with UNICEF and integrated into the national action plan for water and sanitation.

In Lebanon, with support from FAO, a plan to develop an NWIS was prepared as part of an initiative of the national center for water information and training (CNIFE).

Staggered over five years, and with a budget of €6.5M, it includes long-term monitoring of water, archiving, and data processing and dissemination. An amendment to the new Water Code was proposed to guarantee the cooperation of all stakeholders.

At the regional level, a training course was organized in Vienna, as part of the EU support mechanism for sustainable integrated water management (**SWIM-H2020-SM**), on data requirements for planning and integrated management of river basins.

www.semide.net/initiatives/MWKP

Support in Morocco, Algeria and Tunisia

As part of SWIM-H2020-SM, EMWIS carried out technical assistance missions. **In Algeria**, to define a strategy to implement protection perimeters for water catchment zones.

In Morocco, to prepare application decrees of the 2016 Water Act concerning the management of drought, delimitation of protection zones, and desalination.

In Tunisia, partly to define a strategy to implement rural sanitation, and partly to improve the management of groundwater.

Integrated, Sustainable Management of Water Resources in North Africa (GIZ program)

As part of its program "Regional Cooperation in the Water Sector in North Africa - CREM", GIZ asked IOWater to provide expertise on IWRM and in setting up information systems in the Mediterranean. The idea was to initiate reflection between decision-makers in Algeria, Morocco and Tunisia on the situation, and on directions for improving information to make IWRM decisions.

The Sahara and Sahel Observatory (OSS), partner in the CREM program, ensures exchanges between water managers in the three countries.

Faced with the growing gap between water resources and demand in the region, this exploratory action is aimed to help political and technical decision-makers become aware of the need to rely on reliable, exhaustive knowl-

edge that is regularly updated and shared in order to guarantee sustainable management of water resources.

Bilateral meetings in each country were organized in collaboration with EMWIS.

www.emwis.net



The Mediterranean and Middle East

A partnership for integrated management of water resources and wetlands in the Mediterranean



Mediterranean wetlands are natural ecosystems that provide important services for human activities, especially those related to water. Thanks to their hydrological functions, they can supply water to aquifers and rivers, which are important sources of the fresh water necessary for human consumption as well as for activities such as agriculture and industry.

Today, activities such as uncontrolled water withdrawals, unsustainable agriculture, hydroelectric power plants and non-perennial water storage facilities lead to the over-exploitation of this natural resource and diminish the quantities of water required by nature and its natural ecosystems.

To address the problem of unsustainable water use and management, a partnership has just been launched in the Mediterranean basin to ensure integrated management of water resources for natural ecosystems.

The partnership, funded by the MAVA Foundation, involves seven international organizations: Wetlands International, GWP-Med, the IUCN Mediterranean Cooperation Center (IUCN-Med) and the IUCN Regional Office for Western Asia (ROWA), MedWet, Tour du Valat, and WWF North Africa.

The partnership aims to significantly reduce the impact of water abstraction and related key sectors (including agriculture) on biodiversity and on the functioning of wetland ecosystems in the Mediterranean.

Through pilot projects in the south and east of the Mediterranean, this platform is intended to promote integrated water management and dialogue with the civil society by integrating the place of natural ecosystems into the approach of the Water - Energy - Food Nexus.

This approach highlights existing interdependencies to guarantee water, energy and food security for human well-being while ensuring the conservation and ecologically sustainable use of natural resources.

River basins and wetland ecosystems in the Mediterranean need integrated water management and approaches such as the Nexus to ensure better maintenance

of their ecological functioning, including the provision of ecosystem services useful for nature, for the economy, and for future generations.

Read more: Policy Brief on "Water, Wetlands and Nature-based Solutions in a Nexus Context in the Mediterranean".

<http://bit.ly/Water-Wetlands-Nexus>

Frank HOFFMANN

Wetlands International

Frank.Hoffmann@wetlands.org

www.wetlands.org

Mailis Renaudin

MedWet, the Mediterranean Wetlands Initiative

mailis@medwet.org

www.medwet.org

VISCA



Climate services to support medium to long term adaptation to climate change in agriculture

Climate change is threatening different varieties of agricultural species; the wine-grapes are extremely sensitive to weather, and subtle changes in temperature can affect their acidity, sugar levels, ripening period or their vulnerability to pests and diseases leading to implications on the economic competitiveness of Europe's wines.

Wine-growers need accurate information about weather forecasting including when extreme weather events are likely to hit them and when the best periods to irrigate, fertilize, prune and harvest their crops are.

VISCA project, a Horizon 2020 -funded project, a 3-year project which started in May 2017 with a total budget of

3.2 Million Euros, aims to meet this need by providing climate services with a decision support system (DSS) through a multi-platform web application tool integrating climate, agricultural and end-users specifications in order to design medium-and long-term adaptation strategies to ensure that wine-growers get the best quality and quantity of their wine-grapes.

VISCA services are validated by real demonstrations with end users, who are part of the consortium, on three demo sites in Spain (Codorniu), Italy (Mastroberardino) and Portugal (Symington). These services include: weather forecasting/extreme events at short time-scales from hours up to ten days, seasonal forecasting at time-scales up to 7 months ahead, climate

projections at decadal time-scales for the next 20-30 years. VISCA services are demonstrated while testing different management techniques such as crop forcing, shoot trimming and an irrigation scheduling tool. The project is also evaluating the replicability potential in other countries as well as the adaptation of the tool for other crops like olive, cereals, etc.

Beyond the applications for the agriculture sector, climate services can be applied to the management of water infrastructure at river basin scales at different time scales.

Eric MINO - Maha AL-SALEHI

EMWIS TU

e.mino@semide.org

m.alsalehi@semide.org

<http://visca.eu>



VISCA demonstration site in Portugal © SYMINGTON

The Mediterranean and Middle East

Morocco



Valorization of the Boudenib-Errachidia oasis: a good example to consider in the policy of advanced regionalization in Morocco

The Boudenib-Errachidia catchment area is located in southeastern Morocco.

It is limited to the east by the Bechar Basin, to the south by Hamada Guir and to the west by the Paleozoic outcrops of Anti-Atlas.

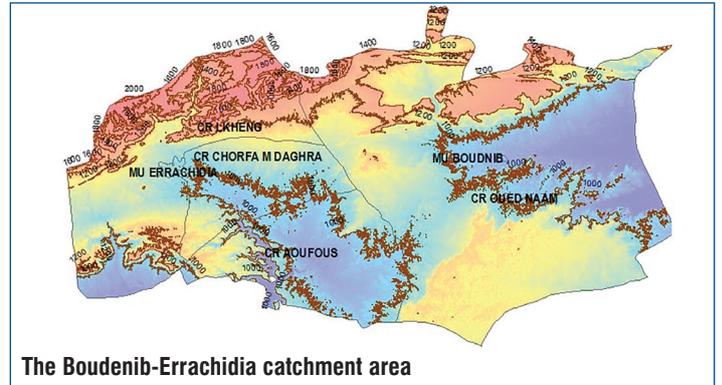
The Boudenib-Errachidia basin covers an area of approximately 43,819 Km², and experiences very irregular rainfall that is often occasional, seasonal, sporadic, unsatisfactory to meet the immediate needs of the people and plant ecosystems.

The current growing socio-economic demands of the region call for other well-reasoned investigations, coupled with the creation of modern farms such as those of date palms, due to their particular adaptation to this climate.

Their objectives are to ensure stable employment, limitation of rural exodus, the reclamation of marginalized lands, the fight against desertification and the economic reinforcement of the Draa-Tafilat region.

The water potential of the site in terms of quality and quantity with soils of clay-silty texture convenient for agriculture in arid areas, is sufficient enough to attract investors to plant in these lands, returning them to the ethnic community of ksar sehli caida and the rural settlement of the Nâam Wadi.

The floods coming from Ziz and Guir Wadis, are used by the oasis inhabitants to irrigate their fields or fatten them with alluvium. They also contain significant surface water resources from the pre-Saharan zone.



The Boudenib-Errachidia catchment area

These floods sometimes threaten the young Oasis, located at an altitude of 1000 m with a flat morphology. This danger is lessened by the construction of dams: e.g. Hassan Addakhil and kadoussa dams, in compliance with the Moroccan policy and its economic plan for the improvement of the agricultural sector.

Ridouane SADKI
S/C de Mohamed EL WARTITI
Mohammed V University
Faculty of Sciences Rabat-Agdal
r.sadki@hotmail.fr

www.fsr.ac.ma

Sultanate of Oman



“Oman Humanitarian Desalination Challenge”

MEDRC Water Research and The Research Council recently launched (March 7th, 2018) a major new initiative in water research, the “Oman Humanitarian Desalination Challenge”.

It is a project that looks to deliver a hand-held, stand-alone, low-cost, desalination device suitable for short-term use and rapid deployment in the event of a humanitarian crises. Such a device would revolutionize humanitarian emergency response efforts in the aftermath of natural disasters.

Access to clean fresh water during and after natural disasters such as earthquakes, tsunamis or floods is critical to health and survival.

There is no sole device to solving the problem of water scarcity following a humanitarian crisis.

Current solutions range from placing large scale water treatment units onsite or transporting massive quantities of bottled water up to distributing water purification devices or tablets.

None of these is ideal when a rapid humanitarian response is required.

Water purification devices for instance can be effective short-term solutions in an emergency situation but are only capable of filtering out waterborne bacteria and parasites, they do not rid contaminated water of chemicals, viruses and salt water.

This is the shortfall that the Oman Humanitarian Desalination Challenge seeks to address.

An effective humanitarian emergency response in this instance would be for first responders to rapidly deploy a device that would enable to easily and quickly, without need of electric power, turn the salty water into drinking water, until rescue could arrive. No such product exists on the market today.

Scaling down the desalination plant technologies into a hand held, commercially viable product that meets the design criteria of this challenge will be no easy feat.

The price of the project (\$700,000) reflects the importance of the challenge.

The Oman Humanitarian Desalination Challenge will run for a period of 5 years.

This timeline will allow anyone to develop a device to compete for the Challenge Prize. MEDRC has setup a globally representative international panel of experts to develop the Challenge Prize criteria and form the judging panel, made up of representatives from the funding entities and internationally renowned experts in their fields.

Elsa ANDREWS
MEDRC Water Research
elsa@medrc.org

www.medrc.org



The website of basin management over the world

www.inbo-news.org

Save these dates on your calendar!

■ **"EUROPE-INBO 2019"**
The future of the European Water Directives
17 - 20 June 2019 - Lahti - Finland

■ **11th INBO World General Assembly**
Marrakech International Summit on Water Security
30 September - 3 October 2019 - Marrakech - Morocco

■ **The International Network of Basin Organizations**

■ **The Regional Networks of Basin Organizations:**

- Africa - ANBO
- Latin America - LANBO
- North America - NANBO
- Asia - NARBO
- Brazil - REBOB
- Central Europe - CEENBO
- Eastern Europe, Caucasus, Central Asia - EECCA-NBO
- The Mediterranean - MENBO



INBO Secretariat: International Office for Water
21, rue de Madrid - 75008 PARIS - FRANCE
Tel.: +33 1 44 90 88 60 - Fax: +33 1 40 08 01 45
Mail: secretariat@inbo-news.org
N° ISSN : 2071-9418 - Online: ISSN 2310-5852
www.inbo-news.org



Flashcode

"INBO Newsletter" is published with the support of the French Water Agencies,
the French Agency for Biodiversity
and the Ministry of Ecological and Solidarity-based Transition

Publishing Director: Eric TARDIEU
Secretariat - Translation: Gisèle SINE
Production: Frédéric RANSONNETTE
Printing: Fabrègue - Limoges