INTERNATIONAL NEWS

Capacity building for better water management

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International Office for Water

EDITORIAL

At a time when IOWater is celebrating its 25th anniversary, water management issues are still relevant all over the world. In France, the reorganization of water and sanitation services is underway to adapt our management methods and tools. At the international level, the mobilization must remain total to achieve, in particular, the ambitions of Sustainable Development Goal 6 regarding access to water and sanitation.

The effects of climate change are now clearly visible, not only in the regions of the world affected by a classic water deficit, but also in France and Europe. The extreme climate phenomena follow one another, the modification of the average levels of rivers, of rainfall, is accelerating; uncertainties increase.

Reactions, either local or global, are essential, from the optimization of the operation of water systems up to better dialogue practices for water resources management in river basins.

This action involves strengthening skills, developing information systems, sharing practices, mobilizing communities of stakeholders, adapting water governance, international solidarity, basin-wide solidarity, preservation and reclamation of aquatic biodiversity.

Water is a vital challenge today that will increase tomorrow!

Eric TARDIEU
Director General

N° 28 - English version - February 2018

The African Great Lakes Conference:

2-5 May 2017 - Entebbe, Uganda

More than 200 participants

This African Great Lakes Conference, organized by The Nature Conservancy with the support of many partners and sponsors, including INBO, provided a regional framework for jointly discussing the challenges to be faced and ensuring conservation and sustainable development.

More than 200 representatives from local and national governments, African Great Lakes Basin Organizations (Lake Albert, Lake Edward, Lake Kivu, Lake Malawi / Nyasa / Niassa, Lake Tanganyika, Lake Turkana and Lake Victoria), donors, academic institutions, the private sector and non-governmental organizations, discussed ways to improve the management of river/lake basins and associated resources in this vast region spanning 850,000 km², where 12 countries share the benefits of rich biodiversity.

In addition to the speeches of its representatives and partners, of the Lake Victoria Basin Commission (LVBC), the Lake Chad Basin Commission (LCBC), the Congo-Ubangui-Sangha International Commission (CICOS) and the Volta Basin Authority (VBA), in three thematic sessions (Governance and Financing at Basin Level - Climate Change Impacts, Mitigation, Adaptation, - Balancing Conservation and Development), INBO coordinated two events :

- **The AfriAlliance workshop,** organized in partnership with the **International Office for Water, (IOWater),** which brought together around 40 participants to identify the challenges and solutions related to water and climate in the region.
- **A side event on "The Legacy of COP22 and the Global Alliances for Water and Climate",** that gathered more than 80 people to discuss case studies on climate change adaptation in basins.

In his speech at the closing session of the Conference, Mr. Jean-François Donzier, Secretary General of INBO, reminded that basins of national or transboundary rivers, lakes and aquifers are the places where appropriate and «no regret» measures must be taken without delay to adapt water resources to the effects of climate change.

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AFRICAN GREAT LAKES CONFERENCE 2017

XVI World Water Congress

29 May - 2 June 2017 - Cancun - Mexico

Mr. Jean-François Donzier, INBO Secretary General, participated in the High Level Panel on Water and Climate © INBO - C.Runel

The XVI World Water Congress focused on "Bridging Science and Policy" and was held in Cancun, Mexico.

It was organized jointly by the International Water Resources Association (IWRA), the National Water Commission of Mexico (CONAGUA) and the National Association of Water and Sanitation Services (ANEAS).

The purpose of the Congress was to facilitate cooperation and coordination among professionals in order to achieve the Sustainable Development Goals, particularly those related to water, as well as the climate agreements established under the auspices of the UN Framework Convention on Climate Change (UNFCCC).

The International Network of Basin Organizations (INBO) actively participated in this Congress.

It facilitated a Special Session "Implementing the Global Action Agenda for Climate and Water (GCAA-Water)".

A meeting of the **Global Alliances for Water and Climate** that were created at the COP22 in Marrakech and of which INBO is the Secretariat also took place on this occasion.

For the first time, a special session was also devoted to vocational training for water professionals, including leaders and partners of Basin Organizations.

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IWRA

UNECE Training

Preparing bankable projects for climate change adaptation in transboundary basins

Dakar - Senegal - 23 June 2017

Workshop on project preparation in Dakar

A training workshop for preparing bankable projects for climate change adaptation was organized by UNECE, in partnership with INBO, the African Water Facility, the World Bank, the European Investment Bank, the Dutch Ministry of Infrastructure and the Environment and the Swiss Development Cooperation Agency.

This workshop was hosted by the Organization for the Development of the Senegal River (OMVS), which is in charge of the Secretariat of the African Network of Basin Organizations (ANBO).

It gathered more than 30 participants, including representatives of the World Bank, African Development Bank, European Investment Bank, French Development Agency and European Water Facility as well as of Transboundary Basin Organizations (TBOs) from Africa, Europe and Asia.

The participants received practical training on how to prepare their request for financing climate change adaptation projects in transboundary basins. They were also trained to make the distinction between adaptation and resilience, as well as between adaptation and development projects.

They were introduced to donors' procedures and project financing cycles and trained on how to develop project proposals for adaptation to climate change, including, in particular, the identification of the impacts of climate change, the vulnerabilities and the needs for adaptation, while fitting their project proposal with the national or transboundary context and climate change adaptation priorities defined in other related sectors.

TBOs should include in their project proposals actions that would deliver positive results for both mitigation and adaptation, as such "co-benefits" are highly valued by donors.

Donors informed of the difficulties they encounter to finance TBOs as these often lack of proper financial resources to qualify as direct borrowers. The donors intervene more frequently with the riparian countries rather than with the international structures they created between them. This is why the Ministries of Finances of the riparian countries, which are the contact point of the donors, should be involved in projects from the start.

However, the TBOs provide a consistent framework at the regional level and allow for a real technical and economic integration enabling a sounder use of water resources throughout their basin, where unilateral actions of each riparian State taken separately might not be coordinated with those of other upstream and downstream countries of the basin.

INBO presented the Incubation Platform of the Global Alliances for Water and Climate (GAfWaC-IP) that aims to bridge the gap between donors, looking for quality adaptation projects, and project holders, ignoring how to access climate funds and comply with their procedural requirements.

GAfWaC-IP provides technical assistance to project holders, to help them build their proposals and reach access to funding.

The training made it clear that there is a strong demand for GAfWaC-IP services.

The workshop was highly interactive, with the presentation of projects for the Basins of the Lake Victoria and Niger River, of OSS (Sahara and Sahel Observatory) accreditation to the Adaptation Fund, of the European Investment Bank procedures.

Exercises with individual or group work on drafting a project proposal to donors were much appreciated by the participants, who wished the continuation of this first training event.

INBO and ANBO presented the AfriAlliance project for innovation in the water and climate sector, aiming at boosting research for the preparedness of Africa to climate change.

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UNECE

www.water-climate-alliances.org

Opening of the website of the "Global Alliances for Water and Climate" to support the implementation of the Paris Agreement in the water sector

On the occasion of the COP23 in Bonn, **the Global Alliances for Water and Climate - GAfWaC -** opened their website to inform all stakeholders involved in the actions taken to combat the effects of climate change in the water sector.

The "Alliances" website will be a showcase for Water and Climate, including the positive progresses made with the Flagship Adaptation Projects launched at the COP21, such as the Hydrological Information System of the transboundary Congo River, the integrated management of the Hai River in China, the strengthening of the new Mexico Metropolitan Organization for Urban Stormwater Drainage or the "Eco-cuencas" Climate Adapt Cooperation project between European and Andean countries.

The site also presents the projects launched at the COP 22, such as the Sebou River management in Morocco, the creation of the "Hydrus" Water Adapt Training Center in Brasilia, cooperation between the Agglomerations of Paris and Manila, the launching of a Euro-Mediterranean water information platform or the future use of the SWOT satellite for hydrological observations of the earth, among others.

It will report on the activity of the four GAfWaC Constitutive Alliances, international water and climate events and their conclusions, incentive projects for new approaches and interesting publications on the subject.

It will also promote an "incubator of new projects", to facilitate their funding from the various "Climate Funds", in particular, so that, alongside conventional infrastructure projects, better knowledge of resources and impacts of climate change, capacity building, governance, monitoring, policy evaluation or the use of Nature-Based Solutions are better funded.

It was enriched by the conclusions of the **"Action Day for Water and Climate",** which was held on Friday 10 November 2017 as part of the official events of the COP23 in Bonn, and gathered all the stakeholders concerned.

www.water-climate-alliances.org

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Stockholm World Water Week

27 August - 1st September 2017


Opening ceremony

This year, the main topic of the Stockholm World Water Week was "Water and Waste: Reduce and Reuse".

During an event on circular economy for mitigation of climate change, organized by the "#ClimateisWater (#CIW)" initiative, **IOWater** presented how the **"INCOVER"** project (see p. 34) is transforming wastewater into a source of high added-value bioproducts that contribute to the concept of a circular economy with multiple benefits.

As Secretariat of **INBO** and the **Global Alliances for Water and Climate (GAfWaC),** IOWater intervened in other "climate" events and working meetings organized with its partners to present the results and prospects of the Alliances and their Incubation Platform and to prepare the program for the official Day for Action on Water and Climate of the COP23 on 10 November 2017 in Bonn.

On the occasion of a side event on **the PIANO (Europe-China Innovation Partnership) project, IOWater** also promoted the French-Chinese cooperation project for the Hai River Basin Integrated Management (see p. 27), which is a model in identifying innovation needs and technical exchanges on very specific issues (pollution modeling, predictive modeling of cyanobacterial proliferation).

IOWater held working meetings with its main partners to advance many issues such as the implementation of the "AfriAlliance" project (network of European and African organizations involved in the search for innovative solutions for climate change adaptation in Africa, see p. 13), or the next World Water Foza in Brasilia, from 18 to 23 March 2018, and Dakar, March / April 2021.

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"World Water Data Initiative"

WMO - Geneva - 4 - 5 September 2017


The Geneva workshop

On 4 and 5 September 2017, **the International Network of Basin Organizations (INBO) was invited to participate in a work meeting of the World Water Data Initiative,** which was held on the premises of the World Meteorological Organization (WMO) in the presence of some thirty experts representing the World Bank, the Australian Government, various UN agencies and several NGOs.

This initiative was launched in 2016 by **the High-Level Panel on Water (HLPW)** set up by the UN Secretary General and the President of the World Bank Group to promote the implementation of the Sustainable Development Goal related to Water (SDG6), which identified access to water data as an essential condition for the implementation of its Action Plan, published in September 2016.

The World Water Data Initiative, managed by the Australian Government until 2018, aims to improve access to water data for stakeholders by providing advice on the right parameters to use by stimulating new technologies and harmonizing common standards.

During this meeting, **INBO** underlined its willingness to actively collaborate in this important strategic initiative, given the significance of organizing data access to achieve effective integrated water resources management in basins and at the national level.

INBO fosters links with local stakeholders in order to better organize access to data (which are often dispersed in multiple national and local organizations) and supports the development of **Integrated Water Information Systems.**

INBO's forthcoming publication of **a handbook on Water Information Systems** is scheduled for the Brasilia World Water Forum in March 2018.

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"ICWC 2017" – MARSEILLES - 3-4 october 2017

On 3 and 4 October 2017, the World Water Council and the Kingdom of Morocco organized the 2nd International Conference on Water and Climate in Marseilles.

Echoing the Rabat Conference in July 2016 and "on the way to the COP23", the participants were able to discuss the major challenges of long-term collaboration.

Mr. Eric Tardieu, IOWater Director General, facilitated the session dedicated to the fight against the lack of water and food and the improvement of health in a context of climate change.

Mr. Olçay Unver of the FAO reminded that a more sustainable consumption must be established urgently. Today, nearly one-third of world food production is lost through consumption channels, with a huge impact of unnecessary water consumption.

Fighting against food wastage is therefore a priority not only in the fight against hunger, but also for sustainable water resources management.

This is particularly important in a region such as the Mediterranean, where 60% of the population is under heavy water stress, and where urbanization is increasing pressures. Managing the balance of demand between farms, businesses and families is therefore of particular significance. The keeping of the rural population, the generalization of water-saving irrigation techniques, scientific research for more efficient management, information systems, are all ways of improving water resources management.

An international legal framework do exists and can regulate conflicts between the upstream and downstream sections of a transboundary river.

A PRIORITY MESSAGE:

To improve the availability and sharing of water information, and to exchange more with the water-consuming sectors to obtain a collective commitment.

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International Summit on of the Great Rivers of the World: "Taking action for water and climate"

23-25 October 2017 – Capitoline Palace - Rome, Italy

Representatives of the great rivers of the world participated in the Opening Ceremony © INBO – C. Runel

The Italian Ministry for the Environment, Land and Sea organized the International Summit on "Water and Climate; Meeting of the Great Rivers of the World", from 23 to 25 October 2017 in Rome, Italy.

This international summit was organized in partnership with the United Nations Economic Commission for Europe (UNECE), the International Network of Basin Organizations (INBO), the Global Alliances for Water and Climate (GAfWC) and Aquamadre.

It gathered more than 350 high-level participants from 56 countries and representatives from, in particular, the European Commission, the major UN agencies, the Union for the Mediterranean, the largest river basins in the world, and his Holiness Pope Francesco.

The President of the Italian Council of Ministers, Mr. Paolo Gentiloni, officially opened the Summit on the morning of 23 October and the closing ceremony on 25 October was celebrated in the presence of the President of the Italian Republic, H.E. Sergio Mattarella.

As has now become clear, climate change is already having a visible impact on freshwater resources, with dramatic consequences (floods, droughts, erosion, ecosystem degradation, etc.).

This Summit has been an important milestone for the preparation of the Bonn COP 23 (6-17 November 2017) and the Brasilia World Water Forum (18-23 March 2018). Its goal was to further integrate freshwater management issues into the top priorities of the international negotiations on climate change and of the Global Climate Action Agenda.

It especially focused on the need for quick action to finance projects to improve knowledge, governance, public participation and take immediate measures for water adaptation to climate change.

The summit was an outstanding occasion to match project proposals to financing opportunities and to foster experience sharing between great river basin organizations, local, national and regional administrations in charge of climate change adaptation policies and water resources management, bilateral and multilateral donors and other international institutions interested in adaptation to climate change and in basin management.

The work of the Summit was organized around four major topics, which were presented in high-level panels and widely discussed among participants:

- Acquisition and sharing of knowledge on the impact of climate change on water resources;
- Nature-Based Solutions,
- Public participation and involvement of the economic sectors and local authorities;
- Financial mechanisms for adaptation to climate change in the water sector.

At the end of the discussions, the following priority recommendations were formulated for reporting to COP23 in Bonn:

- **Integrated water management,** organized at the level of coastal, national or transboundary rivers, lakes and aquifers basins, is needed all over the planet;
- In particular, **regional and transboundary cooperation** in climate change adaptation is crucial to effectively address this change, when there are surface or groundwater resources shared between several riparian countries;
- **The establishment and development of local, national or transboundary basin organizations** is to be supported as well as the strengthening of institutional and technical cooperation between counterpart basin organizations from the same region and other parts of the World;

350 high level participants from 56 countries © INBO – C. Runel

Closing Ceremony in the presence of the President of the Italian Republic, H.E. Sergio Mattarella © INBO – C. Runel

- In each country and each basin, the organization and improvement of **the production, gathering, conservation and exchange of data is to be supported within integrated Water Information Systems (WIS),** which are to be sustained in the long term, while taking climate change into account. Flood and drought early warning systems should be strengthened or developed wherever necessary;
- Stronger linking is needed for **scientific knowledge-based** decision making;
- **The effective participation of the civil society and all stakeholders** in decision-making and management processes is to be fostered. In particular, it is necessary to use dialogue frameworks, such as Basin Committees or Councils, Local Water Commissions or river or aquifer contracts for this purpose;
- It is important to promote exchanges of experience on the most effective mechanisms for dialogue and participation of water stakeholders worldwide and to create links between representatives of local authorities, economic sectors and the civil society involved in these processes. It is advisable that **the members of the Basin Committees and Councils,** that already exist in many countries, organize an enhanced cooperation among themselves as part of a joint initiative that would fit in with the "Citizens" process of the forthcoming World Water Forum in Brasilia in March 2018;
- **We need to promote Nature Based Solutions (SFN).** The restoration of flood plains is recognized as one of the most important challenges and a key issue for natural flood management, groundwater recharge, biodiversity protection and the security of human communities. The multiple benefits of Nature-Based Solutions contribute to reducing the cost of action. **The Rome Summit thus called for the signing of a declaration to support the integration of the use of such Nature-Based Solutions in the "Marrakech Partnership's Agenda for Global Climate Action", during the official Action Day for Water and Climate at the COP23 on 10 November 2017 in Bonn.**
- Governments and the international community must **ensure the mobilization of essential funding** for the implementation of urgent actions to adapt water to climate;
- **Africa,** which is the continent that is the most vulnerable to the effects of climate change, must be able to count on the mobilization and solidarity of all partners through the **"Water for Africa"** initiative, launched at the International Conference on Water and Climate in Rabat in July 2016.
- **Attaining the Sustainable Development Goals by 2030 and implementing the Paris Agreement** require an acceleration of funding, from all sources, of climate action in the water sector;
- **Funding** should support not only infrastructure projects, but also serve to improve knowledge of resources and climate change impacts, capacity building, governance, water culture, the monitoring and evaluation of policies. It is advisable that donors recognize and strengthen the essential role of basin organizations in sustainable water resources management, by financially supporting projects related to the commitments and principles set out above to address climate change.

Illuminated Rome Capitoline Fountain for the Summit - © INBO - C. Runel

For further information and see the papers and photographs:

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COP23 - 6-17 November 2017 - Bonn - Germany:

Freshwater victim of climate change: We must act quickly!

Signing of the International Declaration: Nature Based Solutions, during the official "Action Day for Water and Climate" of 10 November 2017 © INBO - C.Runel

Created at the COP22 in Marrakech in 2016, **the "Global Alliances for Water and Climate – GAfWaC",** gather the four "Alliances" of the Basins (Paris Pact), Megacities, Desalination and Business, themselves established at the COP21 in Paris a year earlier. Today, they represent more than 450 organizations around the world, which have committed themselves to mobilize their partners, identify and disseminate good practices and support the development of new projects by field stakeholders involved in adaptation to climate change and in the resilience of the inland freshwater sector.

The Global Alliances for Water and Climate have been designated by the two Moroccan and Fijian "Climate Champions" to prepare and coordinate, with their partners in the sector, **the "Official Action Day for Water and Climate",** which took place on Friday 10 November 2017 as part of the COP23 in Bonn and which followed **the International Rome Summit on "Water and Climate"** held from 23 to 25 October.

This day was an opportunity to remind decision makers that freshwater is one of the first victims of climate change.

Indeed, freshwater resources are already and will be more and more directly affected by climate change, and this in the coming years.

The consequences, depending on the regions, will be an increase in intensity and frequency of floods and droughts, the strengthening of extreme hydrological and hydrogeological phenomena, a flow deregulation of the rivers originating in the mountains, due to the melting of glaciers and the reduction of snow cover.

It will be also necessary to fight against an increased erosion caused by the modification of plant species and soil cover, and changes or even reduction in agricultural production, a change in flows at the mouth of rivers, as well as salt intrusions on the coasts and in coastal aquifers, due to the rising of sea levels, an increased prevalence of water-borne diseases or the arrival of invasive species in ecosystems, especially caused by the warming of surface water .

The demographic, economic and ecological consequences are likely to be very significant and require global mobilization to quickly prepare the necessary adaptation programs at the level of each basin, taking surface water and groundwater into account.

Areas with big human settlements and economic activities will be seriously threatened, with the risk of large population displacements, especially in rural areas.

These effects are compounded by significant pressures already linked to population growth, urbanization and development. Global warming is a «multiplier of threats», aggravating difficult situations and increasing tensions, even in stable regions!

We must act quickly, before it is too late, and the mobilization of all stakeholders is essential at the global level, in order to urgently develop the programs needed to prevent the effects of global warming and adapt to them.

In 93% of their National Contributions (NDCs), the countries have identified water as a priority for adaptation. As water is essential for human health, food security, energy production, industrial productivity, tourism, navigation, biodiversity, in addition to basic human needs, securing water resources means ensuring security in all these areas of economic, social and environmental development.

Adaptation to climate change is one of the conditions for achieving the Sustainable Development Goals for 2030 in the water sector.

The Action Day for Water and Climate was organized around a review of the actions that have been carried out, especially by the four Global Alliances for Water and Climate, since the COP22 in Marrakech last year and four thematic sessions on:

- improving the funding of adaptation projects,
- the knowledge needed in the field of water to respond to climate uncertainty,
- water and urban resilience,
- water, sustainable agriculture and food security.

.../...

COP23

This Day has shown, with the presentation of many actions already in progress, that "no regrets" solutions exist and can be implemented immediately, but also that difficulties must be overcome.

Among the recommendations made, it can especially be noted that:

- **Integrated water resources management should be organized at the level of coastal, national or transboundary rivers, lakes and aquifers basins,** because, in particular, regional and transboundary cooperation is crucial and must be increased where there are surface or groundwater resources shared by several riparian countries.
- **In each country and each basin, the organization and improvement of the production, gathering, conservation, exchange and dissemination of data are to be supported within integrated Water Information Systems (WIS), which are to be sustained in the long term,** while taking climate change into account, **because we do not know how to manage what we cannot measure** and the delay in this area is important: Flood and drought early warning systems should be strengthened or developed wherever necessary.
- **Water management needs to be organized in a cross-sectoral way** involving local authorities, including municipalities, economic sectors, especially agriculture and energy, and the civil society as a whole. Effective participation of all relevant stakeholders should be promoted in the decision-making and management processes and in the development of field projects. From this point of view, the Alliances created between basins, cities and businesses allow a better mobilization of these partners, a shared vision of the issues and solutions, the cross-dissemination of good practices and the pooling of support means.
- **Multiple benefits are provided by Nature-Based Solutions,** which have proven effective alongside conventional infrastructure and which contribute to reducing the costs of action: They need to be promoted and skills have to be provided to develop this "green engineering". In this regard, during COP 23, an appeal was launched for the signing of a Declaration to support the use of Nature-Based Solutions into the **"Action Agenda of the Marrakech Partnership for Global Climate Action",** which has already gathered more than 70 signatures from international or national organizations involved.
- **Governments and the international community must ensure the easier mobilization of essential funding for the implementation of urgent actions to adapt water to climate.** The achievement of the 2030 Sustainable Development Goals and the implementation of the Paris Agreement require accelerating funding from all sources for climate action in the water sector. Financing, whose procedures should be simplified, must not only support infrastructure projects, but also serve to improve knowledge of resources and climate change impacts, capacity building, governance, training, water culture, monitoring and evaluation of policies or the use of Nature-Based Solutions. **Project incubation resources, to facilitate their funding from the various "Climate Funds", appeared very useful in the light of current experiences.**

The next World Water Forum, to be held in Brasilia from 19 to 23 March 2018, will be the occasion for a new mobilization around these objectives.

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Plenary session on "Finance" during the official "Action Day for Water and Climate" © INBO - C.Runel

The Global Alliances for Water and Climate (GAfWaC) regroup:

1. **The Alliance of the 360 signatories of the "Paris Pact on water and adaptation to climate change in the basins of rivers, lakes and aquifers", in 94 Countries,** facilitated by the International Network of Basin Organizations (INBO) in partnership with UNECE,
2. **The Business Alliance for Water And Climate Change - BAFWAC,** launched by the Carbon Disclosure Project - CDP, the CEO Water Mandate, the World Business Council for Sustainable Development (WBCSD) and SUEZ, which has now 65 member organizations, including 47 leading companies,
3. **The Alliance of Megacities for Water and Climate,** facilitated by UNESCO, ICLEI, SIAAP and Arceau-IDF, gathering 16 Megacities for a total population of more than 300 million inhabitants,
4. **The Global Clean Water Desalination Alliance,** gathering dozens of companies and research centers in this field.

www.-water-climate-alliances.org

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"GAfWaC-IP" :

The Incubation Platform for "Water and Climate" Projects

Climate change is already seriously affecting the water cycle all over the World.

The resulting water crisis is a key factor in current and future social, economic, environment and migration crises, affecting health, food and energy security and economic growth, essential to the sustainable development of many countries.

Donors are mobilized on the issue, but stress their difficulty in finding sound projects to finance. At the same time, project holders regret their lack of capacities to initiate the preparation of new projects and to access funding given the complexity of the procedures.

The Incubation Platform of the Global Alliances for Water and Climate (GAfWaC-IP) was created at COP22 in Marrakech, to fill this gap. It mobilizes the 450 partners involved in the four Global Alliances for Water and Climate gathering Basin Organizations, companies, large cities and desalination specialists.

The GAfWaC Incubation Platform focuses on the priorities of the **"Paris Pact on Water and Adaptation to Climate Change in the Basins of Rivers, Lakes and Aquifers",** launched at COP21, particularly for strengthening water governance, protecting better and saving resources, developing hydrometeorological and environmental monitoring networks and Water Information Systems (WIS), or designing and operating sustainable financing mechanisms. It also incorporates priorities shared with other GAfWaC member alliances, such as water resource protection, Nature-Based Solutions, development of sustainable desalination solutions or circular economy in cities and companies.

On an experimental basis, ten projects, including three in Africa, could be supported by the Platform in 2017, with the help of the French Ministry of Ecology.

The implementation of these incubated projects could benefit 33 million people.

At the end of the first year of operation, **GAfWaC-IP completed the incubation of 10 projects and contacts were established with potential donors.**

Funding for several projects has already been secured.

A second phase of the much more ambitious Incubation Platform is being finalized following the presentation of the results at COP23 in Bonn.

The incubated projects in 2017 were:

- Securing populations and ecosystems around the Diama Dam in the Senegal River Delta;
- Resilience to the impacts of climate change: towards better efficiency in industrial wastewater treatment in the city of Fes in Morocco;
- Fight against climate change and restoration of the Zarqa River Basin in Jordan;
- Development of Water Information Systems for adaptation to climate change in the Congo River Basin;
- Adaptation to climate change and flood/drought risk management in the Syr Darya Basin in Kazakhstan;
- Development of a climate change adaptation strategy and a priority action plan for the Sava Basin;
- Launching of the first "Water and Climate" courses at the "HYDRUS" Training Center in Brasilia;
- Support to the operationalization of Burkina Faso's National Water Information System;
- Mediterranean Water Knowledge Platform: Support to the development of National Water Information Systems (NWIS) in 4 pilot Southern Mediterranean countries;
- BAFWAC: Global Platform for Joint Action and Learning for Business.

The Rome International Summit on Water and Climate, 23-25 October 2017, recommended that "Funding should support not only infrastructure projects, but also serve to improve knowledge of resources and climate change impacts, capacity building, governance, the monitoring and evaluation of policies".

The Italian Government allocated 5 million Euros to immediately launch three of these incubated projects.

These very encouraging first results were presented at COP23 in Bonn last November.

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Heads of State and Government at the Paris Summit

President E. Macron at the "One Planet Summit"

PARIS2015 COP21·CMP11 — MARRAKECH COP22|2016|CMP12 UN CLIMATE CHANGE CONFERENCE — COP23 FIJI UN CLIMATE CHANGE CONFERENCE BONN 2017

"ONE PLANET SUMMIT"

100 projects for water and climate in Africa

On the occasion of the "One Planet" Summit in Paris last 12 December, the President of the French Republic, Mr. Emmanuel MACRON, announced an initiative to develop "100 new projects for water and climate in Africa", under the Incubation Platform of the Global Alliances for Water and Climate (GAfWaC-IP).

Africa is indeed the continent most vulnerable to the effects of climate change: Seven of the ten most endangered countries in the World are in Africa. 65% of Africa's inhabitants may be facing water stress by 2025.

Climate change is also an important factor in accelerating migration, especially of rural populations.

Thus, Africa should be able to count on the solidarity of all partners, especially through the **"Water for Africa" initiative,** launched at the International Conference on Water and Climate in Rabat in July 2016.

The incubator initiative "100 projects for water and climate change in Africa" aims to mobilize 20 million Euros to support, over the next 5 years, the incubator and the preparation of new projects.

The Declaration of Support to this Initiative was signed by France, Italy, Chad, Burkina Faso, UNESCO, UNECE, the African Development Bank, the French Development Agency and the Global Alliances for Water and Climate and its 4 partners (International Network of Basin Organizations, Business Alliance and Megacities Alliance for Water and Climate, Global Clean Water Desalinization Alliance).

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The partners' declaration

Considering that water is one of the first victims of climate change and that there is an urgent need to step up the pace of adaptation and enhance the number of projects relating to water in Africa, but also that the difficulty for project-holders to mobilize support in the early stages of project preparation hinders their capacity to access public and private financial instruments, we declare that:

- We support the launch of the GAfWaC Incubation Platform's initiative **"100 projects for water and climate change in Africa";**
- We will help to facilitate the emergence of these new projects in Africa;
- We will provide the human and/or financial resources needed for their implementation;
- We will contribute by investing and producing differently, in order to anticipate or alleviate the impacts of climate change in Africa.

We therefore call upon all donors and public and private partners to join us in this enterprise, to help achieve large-scale transformation.

Haiti

Visit of the President of Haiti to IOWater

On the occasion of the "One Planet" Summit in Paris, on Tuesday 12 December 2017, **the International Office for Water (IOWater) had the honor of receiving at its Paris General Directorate, the President of the Republic of Haiti, His Excellency Mr. Jovenel Moïse,** in the presence of representatives of the French Ministry of Ecological and Solidarity-based Transition and the Seine-Normandy Water Agency.

This visit allowed recalling the ten years of IOWater's support to Haiti, especially with the development of the National Technical Repository for Water and Sanitation of Haiti, the study of the strategic lines for the development of the water sector, and support to the National Professional Training Institute (INFP), financed by AFD, for the setting up of a training structure for water and sanitation.

IOWater Director General, Mr. Eric Tardieu, gave the IOWater Medal to President Jovenel Moïse.

Mr. Eric Tardieu is welcoming the Haitian President

The "Paris Pact on Water and Adaptation to Climate Change in the Basins of Rivers, Lakes and Aquifers", initiated by INBO, was signed on this occasion by the Haitian Minister of Commerce and Industry.

Mr. Jovenel Moïse emphasized "the political will of his administration to enter into an active partnership and to set up a network of international cooperation exchanges, in order to develop the organization and capacity of water management in Haiti and to introduce measures to protect this natural resource".

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The Global High-Level Panel on Water and Peace

The Global High-Level Panel on Water and Peace was launched in November 2015 in Geneva by 15 co-convening countries (Cambodia, Colombia, Costa Rica, Estonia, France, Ghana, Hungary, Jordan, Kazakhstan, Morocco, Oman, Senegal, Slovenia, Spain and Switzerland) with the mandate to develop recommendations aimed at preventing and resolving water-related conflicts, and at making water an instrument of peace.

"A Matter of Survival", the final report of the panel was launched in Geneva and in New York in September 2017.

It concludes, among others, that the global water challenge needs to be addressed urgently in an integrated and comprehensive way at all levels, ranging from the United Nations Security Council and other multilateral organizations to grass-root level institutions.

The "Geneva Water Hub" is in charge of disseminating the report and supporting the implementation of its recommendations. It is managing the Secretariat of the Panel.

Mr. Jean-François Donzier, Secretary General of the International Network of Basin Organizations participated in the Panel meetings in Dakar on 5 April 2016 and in Geneva on 27 February 2017, in which he presented the progress made in the integrated management of transboundary rivers, lakes and aquifers and showed how much the signing and implementation of a cooperation agreement between riparian countries was a factor of peace and social, economic and ecological progress, based on the exchange of data and information and the sharing of the benefits of a shared vision of these basins' future.

Panel Meeting in Dakar on 5 April 2016

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OECD

Water Governance Initiative


Initiative meeting in Rabat in January 2017

The Water Governance Initiative was launched by OECD at the 6th World Water Forum in Marseilles in 2012. **IOWater** has been actively involved in its development since its inception, especially in research and definition of governance indicators applicable on different scales: country, region, basin, city.

The work led by OECD and carried out with the contribution of many partners, **INBO, IOWater**, ASTEE, WIN in particular, gave a first result in **the production by OECD in 2015 of the 12 principles of water governance** that are a real reference framework for improving water governance around the world.

The various partners in OECD Initiative then worked on governance indicators and good governance practices.

In 2018, this work will result in a summary document on water governance and a set of indicators to measure the status of water governance in countries, basins and cities.

The latest version of the proposed indicators was subjected to a feasibility test in the first half of 2017 with 12 volunteer pilot institutions. The 9th workshop of the Water Governance Initiative, held in Paris on 3 and 4 July 2017, allowed a dialogue on the problems encountered when using these indicators. The test led to adjusting a new version that was full-scale tested with these volunteer pilot institutions in autumn 2017.

At the 10th meeting of the members of the Water Governance Initiative, on 20 and 21 November 2017, in Vienna, Austria, the test feedback-based results were discussed and **the requirements to ensure the full success of the use of this set of indicators were defined.**

At the same time, **the 60 or so "Water Governance stories",** collected in 2016 and 2017, were analyzed in order to extract the main lessons learned.

At the Initiative meeting in Rabat in January 2017, Mr. Jean-François Donzier, Secretary General of the Global Alliances for Water and Climate (GAfWaC), presented the conclusions of the official Action Day for Water and Climate of COP 22 in Marrakech.


Initiative meeting in Vienna in November 2017

A delegation from the Brazilian Intermunicipal Consortium and PCJ Water Agency was invited to present the very positive results of the **«EcoCuencas» cooperation project,** coordinated by IOWater, which aimed at testing in Brazil, Colombia, Ecuador and Peru new economic tools to adapt to the effects of climate change in the selected pilot basins.

www.oecd.org

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AFRICA

AfriAlliance

Innovative solutions for water and climate in Africa

Workshop, Great Lakes Conference, Entebbe, May 2017

Meeting with field stakeholders, thinking about emerging themes such as social innovation, establishment of a database to collect research and innovation needs related to the challenges of water management and climate change, proactive communication, **these are some of the major issues that IOWater and INBO have dealt with in the AfriAlliance project (2016-2021).**

Funded by the European Union's Research and Innovation Program (H2020), the AfriAlliance project aims to build Africa's capacity to respond to climate change challenges by developing joint work and sharing innovative solutions between existing networks in Africa and Europe.

During the first 18 months, 4 facilitated workshops organized in Botswana, Morocco, Uganda and Ghana as well as a series of interviews allowed identifying a first list of research and innovation needs. A phase of identifying solutions has started in order to make available, in the first quarter of 2018, a summary presenting the existing solutions to the identified needs. Where appropriate, when no solution has been identified or when the solutions require a final phase of development, the collected information will be used to draft the AfriAlliance's research and innovation agenda.

In terms of communication, the first series of thematic fact sheets on social innovation is now available on the project website. The purpose of these fact sheets is to highlight the specific conditions for innovation in the water sector. They are aimed at potential solution providers, resource managers and local communities and stakeholders such as NGOs. The main theme of this first series deals with monitoring.

Five sub-topics were developed to detail the specific challenges of monitoring related to water and climate change in Africa:

- Monitoring of drinking water quality for improving health;
- Monitoring of water availability in quality and quantity sufficient for food security;
- Climate monitoring for early warning systems to prepare for extreme weather events;
- Monitoring of groundwater quantity to ensure its sustainable use and avoid water conflicts;
- Monitoring of water pollution for industries and urban areas to protect human health and ecosystems.

www.afrialliance.org

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Niger : Kandadji Dam

An institutional framework for the first large dam on the Niger River

The Kandadji Dam is one of the three large dams that the Heads of State chose in 2008 as part of the "Shared Vision" of the Niger River Basin.

The Nodalis-IOWater-ISL group was chosen by the Kandadji Dam Agency (ABK) to carry out, with funding from the World Bank, a study to determine a future dam management structure.

The Kandadji Dam aims at supporting low-water levels, developing irrigation and producing hydropower. In particular, low-water level support helps to meet the commitments made by Heads of State to maintain a minimum flow at the Nigerian border.

The future management structure will cover the following three functions: multi-sectoral water management, asset management, hydropower plant operation. It also involves developing an implementation plan for the chosen solution and preparing the necessary legal, contractual and financial documents and tools.

The start-up phase included a first mission to Niamey in September 2017.

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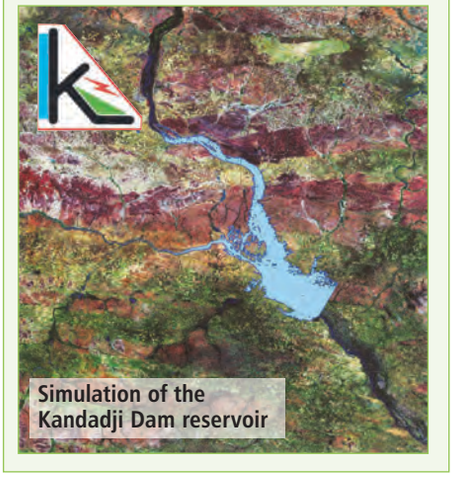

Simulation of the Kandadji Dam reservoir

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"OMVS"

"OMVS" history shows the strong will, expressed and supported for more than forty five years, of the riparian States to cooperate for a sound and joint exploitation of the resources of the Senegal River, based on:

- free navigation;
- the indivisible ownership of the common structures and the solidarity guarantee for their financing;
- equitable and reasonable distribution of water resources and users' benefits;
- equitable sharing of costs and charges among Member States;
- "the obligation for each Member State to inform the other riparian States before taking any action or project that could have an impact on water availability and/or the possibility of implementing future projects".

"OMVS" is unanimously recognized as an exemplary river basin management organization, with few equivalents around the world.

Throughout its history, since 1972, "OMVS" has adapted its organization to face the evolutions, to mention only the most important ones, related to the building of the Diama and Manantali dams, but also to the integration of Guinea.

These major events led to progressive and normal consequences from a legal, institutional, organizational and financial viewpoint.

For several years, "OMVS" has mobilized human and financial resources to initiate reforms on these different aspects.

The Conference of Heads of State and Government and the Council of Ministers have decreed the urgency to start a new institutional review simultaneously with a financial analysis to modernize "OMVS" and allow it to continue being part of the the history of integrated water resources management and land development in the Senegal River Basin, as its founders had initiated.

This study, entrusted to IOWater, in partnership with the Canal de Provence Company - Société du Canal de Provence (SCP), should enable "OMVS" to sustainably address the political, socioeconomic and environmental challenges by 2050, by integrating adaptation to climate change in the basin.

www.portail-omvs.org

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OMVS
ORGANISATION POUR LA MISE EN VALEUR DU FLEUVE SENEGAL

Crossing channel of Diama Dam

Mono Basin Authority

Togo and Benin united for the Mono Basin transboundary management

The Mono River

The Mono River has its headwaters in Togo, between the city of Sokodé and the border with Benin, and flows towards the South where, close to its mouth, it forms the border between Togo and Benin.

It flows into the Gulf of Benin through an extensive system of brackish lagoons and lakes (including Togo Lake).

The Mono Basin Authority (ABM) gathers the two countries to ensure integrated management of this transboundary basin. The first session of the ABM Council of Ministers took place in Lomé on 21 and 22 September 2017 and decided on the Strategic Plan, the financing keys and chose Benin as host country for the Executive Board.

With the support of the Rhone Mediterranean Corsica Water Agency, experts from IOWater and pS-Eau are helping this phase of establishment of the Authority.

The project also contributes to the development of IWRM at the national level in both countries. The regulatory framework is in place and cooperation contributes to the implementation of the Basin Committees, planning documents and water fees in particular.

The project is working on the emergence and implementation of decentralized cooperation actions on water and sanitation carried out by French local authorities in the Mono Basin.

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AFRICA

"CICOS"

CICOS
Commission Internationale du Bassin Congo-Oubangui-Sangha

SWOT CONGO
Spatial hydrology: for integrated water resources management in the Congo River Basin

The working group in Nîmes

A specialized working group on spatial hydrology, gathering seven French institutions (AFD, BRL, CNES, CNR, IRD, IRSTEA and **IOWater**) was created in 2014 to prepare for the forthcoming exploitation of the SWOT (Surface Water and Ocean Topography) satellite, which will be launched by CNES and NASA in 2021.

Its dynamics is part of a strong will for operational research.

Thus the Congo River Basin, the second largest in the world after the Amazon Basin, was chosen as a pilot basin to test the AFD-funded potential applications of SWOT.

This very active working group, facilitated by **IOWater**, welcomed, at its 8th meeting in March 2017 in Nîmes, a delegation of the International Commission of the Congo-Ubangui-Sangha Basin (CICOS), in order to analyze the situation of hydrological monitoring and spatial applications in the Congo Basin, and to agree on future activities to be implemented: establishment of a hydrological information system, development of operational services for navigation and hydropower, transition from altitudes to flows... In addition, this meeting was an opportunity to reaffirm the old and long-standing commitment and links between French stakeholders and "CICOS", which were formalized by a memorandum of understanding signed in September 2017.

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Congo Brazzaville

Strengthening hydrological services: support from a private operator

An AFD-funded project is dedicated to flood control, especially in the City of Pointe Noire. In this context, a large-scale program for the rehabilitation of the National Hydrological Service (NHS) is being initiated.

This program especially provides for the recruitment of a private operator to support NHS for a few years.

In particular, this private operator will have the mandate to sustain the revenues required for the operation of the NHS and the maintenance of the thirty or so planned hydrometric stations. **IOWater** accompanies AFD and NHS for the recruitment of this operator.

www.cicos.info

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Ghana

The White Volta

In the Transboundary Basin of the White Volta/Nakanbé and in order to improve transboundary water resources management in Ghana, downstream of the basin, the project to support the White Volta pilot Basin is carried out by IOWater, with the Water Resources Commission, the White Volta Basin Board and the Volta Basin Authority (VBA).

A joint workshop was thus organized in Ouagadougou in February 2017 in the presence of partners from the two riparian countries, Burkina Faso and Ghana, and experts from IOWater and the Loire-Brittany Water Agency, on the topics of planning, funding and control of invasive aquatic plants.

Joint AEN / Ghana workshop - February 2017 in Ouagadougou in the presence of IOWater and AELB

Training on river assessment for Ghanaian experts was organized at the IOWater training center in Limoges at the end of 2017.

Specific support for the development of water discharge guidelines and related legislative instruments will be initiated in 2018.

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Burkina Faso

Nakanbé Water Agency Development of a SDAGE for the Volta-Nakanbé Basin

Consolidated experiment

For this 3rd phase of the IOWater's assistance to help the Nakanbé Water Agency (AEN), with support from the Loire Brittany Water Agency (AELB), the year 2017 was marked by more work for the development of the Master Plan for Water Development and Management (SDAGE), a priority objective of the AEN.

Two IOWater missions thus focused on:

- Support for writing scenarios for the future "SDAGE". This support allowed a better appropriation of the objectives and stakes and provided methodological elements on the principles for actions in rural and urban areas;
- Capacity building for the AEN staff for the development of the "SDAGE", its follow-up by the selected consulting firm, its evaluation, its financing and its implementation.

Zagtouli Sludge Treatment Plant – Ouagadougou

A study tour in France was organized on the occasion of a meeting of the Loire-Brittany Water Agency's Basin Committee.

The field visits allowed making the implementation of a "SDAGE" more practical as well as its local variations in several Water Development and Management Plans (SAGE).

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Mouhoun Water Agency: towards the first "SAGE" in Burkina-Faso

Dédougou workshop – May 2017

Since 2014, **IOWater** has provided institutional and technical assistance to the Mouhoun Water Agency (AEM) with the support of the Seine Normandy Water Agency (AESN).

In 2017, priority was given to the development of the future Samendéni-Sourou Water Development and Management Plan (SAGE) in the Mouhoun River Basin. The operation of two dams located upstream and downstream will face significant environmental and societal challenges in this sector.

Through capacity building and technical assistance, this support deals with Water Police services, the development of the "SAGE", the recovery of financial contributions for water use, the AEM Multi-year Action Plan and stakeholders' participation.

Various expert missions focused on:

- Support to the drafting of the terms of reference of the future "SAGE" in the presence of the AEM staff and national stakeholders;
- Preparation in Ouagadougou of the International Water & Climate Workshop organized by the AESN and the AFD and held in Paris in September 2017, in which the AEM Director General, President of the Board of Directors and the Chief of the Sustainable Development Service participated.
- A workshop on sustainable financing mechanisms,
- A capacity building workshop for the Water Police Services in the Mouhoun Basin, with the participation of an expert from the French Agency for Biodiversity (AFB).

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Burkina Faso "ONEA"

Management Project Assistance for the Ziga Dam

ONEA treatment plant

ANTEA and IOWater are implementing an AFD-funded Project Management Assistance to the National Office for Water and Sanitation (ONEA) in Burkina Faso.

In 2016, the IOWater experts carried out the audit of ONEA's "Project Management" function based on the analysis of the organization and current functioning of the services of the 3 directorates in charge of this activity.

Following the adoption in early 2017 of its new 2016-2020 strategic plan, ONEA asked the group to extend the analysis to its entire structure, with the aim of defining an optimal organization to accompany the implementation of its new strategic plan.

Several baseline scenarios were proposed to ONEA General Directorate that defined its reorganization project after many discussions in exchange workshops.

In 2018, **IOWater** will accompany the implementation of the adapted reorganization with the definition of a training plan.

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THE CARIBBEAN

Cuba

Better guarantee of access to a quality water resource in Havana

Following the signing in March 2017 of the Memorandum of Understanding for integrated and sustainable water resources management, several missions to the National Institute of Water Resources (INRH) were organized in June, September and December, with the support of the Adour-Garonne Water Agency.

IOWater has associated the Martinique Water Office with the expertise provided to our Cuban partners.

This cooperation plans a support to:

- The **National River Basins Council (CNCH) and the Pilot Almendares-Vento Basin Council** (Havana) and its Executive Secretariat;
- The **characterization of the Almendares-Vento Basin** (observation networks, management indicators) and the drafting of this Basin Management and Development Plan (participatory planning, integration of climate change);
- **The establishment of the Integrated Management Information System in this basin** (water observatory, modernization of the quality monitoring technology, data management and publication).

The island of Cuba, with a ridge along its entire length, determines a large number of small river basins, knowing that 85% of these coastal rivers are less than 40 km long and have a basin area of less than 200 km^2. This led to the differentiation of basins of provincial and national interest on particular issues, such as that of Almendares-Vento, which supplies most of the Havana agglomeration. It has been chosen as Pilot Basin for this cooperation program.

In the context of the Inland Waters Act, voted in September 2017, and based on the exchanges already made, several additional themes emerged, i.e.:

- The training of stakeholders and public awareness (example of the Martinique);
- The development of participation;
- The implementation of an economic approach, as well as the integration of climate change (example of Garonne Operation 2050);
- The protection of catchment areas in karstic zones;
- The development of biological indexes for monitoring the quality of tropical environments.

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Haiti

Professional Training to Support the Employment of Haitian Youth

The National Institute of Professional Training (INFP) in Haiti receives assistance from the French Development Agency to develop professional training. Water and sanitation are priority components.

IOWater was chosen jointly with CRESFED, a local NGO, to provide support and educational engineering to the INFP, in close collaboration with the National Directorate of Drinking Water and Sanitation (DINEPA).

The experience gained in Haiti over the past ten years has allowed IOWater to be well aware of the specificities and technical, sociological and health challenges of the water sector, in particular, with the development of the National Technical Repository in 2012.

The future training courses will fit into the national strategies and the state of the art required in Haiti.

A skill-based approach was chosen to define professional training ranging from the level of a certificate of professional competence to the Technician Diploma level, and short continuing training modules.

The main planned achievements are:

- an assessment of the needs,
- drawing up "jobs / professions" sheets and a "jobs / skills" matrix,
- the structuring of educational units,
- the development of 4 basic training courses and 10 continuing training modules,
- the identification of local trainers, their evaluation and training,
- the engineering of teaching materials and the definition of spaces,
- the accompaniment of the first training sessions.

Working session on the criteria for prioritizing the sector's professions

These activities are carried out as part of a joint development with local stakeholders. The aim is to provide training sessions in 2019 that meet the sector's major needs for its economic development.

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NORTH AMERICA

"QUÉBEC'EAU" has reached its cruising speed

After officially launching its website in 2016 and participating in AMERICANA and in the Symposium on Water Management in 2017, "Québec'eau" has now reached its cruising speed.

"Québec'eau" is a Non-Profit Organization (NPO) under Canadian law, created in March 2015, which was officially launched at the AMERICANA in the 2015 spring fair in Montreal.

"Québec'eau" is the result of a strong partnership between the International Office for Water (IOWater) and "Réseau Environnement", which is the reference organization in the field of the environment in Quebec.

"Réseau Environnement" is the largest group of environmental specialists in Quebec and represents more than 2,700 members from all backgrounds.

Active for more than 50 years, its mission has been to promote good practices and innovation in the environmental field.

"Québec'eau" is a continuing training organization that jointly works with Quebec stakeholders to offer as wide a range of educational products as possible. "Québec'eau" relies on the cross-expertise of IOWater and Quebec partners.

Québec'eau training on "meters"

In 2017, training courses on water meters and on the strategy to be developed to limit water losses in supply systems were launched, in support of Quebec's strategy to save drinking water, deployed by the Quebec Ministry of Municipal Affairs and Regional Planning (MAMOT). Dozens of operators of municipal systems are expected to participate in these training courses in the coming months.

"Québec'eau" will participate in the 12th Environmental Technology Fair of Quebec (TEQ Fair) in Quebec City in March 2018.

www.quebec-eau.org

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Canada

IOWater present at AMERICANA

The companies of the "France Water Team" with IOWater

The AMERICANA Water and Environment Fair took place in Montreal from 21 to 23 March 2017. This bi-annual event attracts all water and waste professionals from North America, as well as from Ontario and Quebec, with 10,000 visitors from municipalities and private companies and 350 exhibitors from 36 countries.

France was particularly represented with Business France and stands of a dozen companies.

In order to discover the market in Quebec and, more broadly, in neighboring States (Ontario and Northeastern US States), the "France Water Team", a collective name of competitiveness clusters, was accompanied by IOWater, under the direction of "Québec'Eau", the organization created by **IOWater** and "Réseau Environnement" of Quebec, AMERICANA organizer.

It was a great success for all the stakeholders present, with many contacts made and a great awareness of the potential of French technologies.

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LATIN AMERICA

"EcoCuencas"

The project is ending in style

"EcoCuencas" Workshop at the "EUROPE-INBO 2017" Conference in Dublin – Ireland

"EcoCuencas", a project funded by the WATERCLIMA program of the European Union and coordinated by **IOWater,** is ending its third and final year in the best conditions, with tangible results in all the partner countries: Peru, Ecuador, Brazil and Colombia.

After the completion, in each river basin, of an analysis of existing redistributive financial mechanisms and their ability to finance adaptation to climate change, the various Latin American partners developed until December 2017 innovative pilot actions, coordinated by Asconit and under IOWater's impetus.

In Peru, the work carried out by the National Water Authority (ANA) was devoted to existing fees for "uses" and "discharge" in the country. They have led to tangible developments to improve the coverage and efficiency of the fee levying process, broadened the fee liability basis and increased rates in relevant situations, with a view to equity and funding for Integrated Water Resources Management.

At the same time, the project provided thoughts on adaptation to climate change, using innovative methodologies (no regret measures, cost of inaction, etc.).

In Ecuador, the National Secretariat for Water (SENAGUA) developed a new national instrument for financing water resources protection (entitled "tarifa agua cruda"): definition of the collection formula, proposal for a management model, account taken in the regulation, support to the constitution of Basin Councils, or formulation of projects able to be financed by the new redistributive instrument.

Peruvian and Ecuadorian work carried out in the shared pilot Catamayo-Chira River Basin also facilitated closer links between the Basin Councils on both sides of the border to steer the management of the nine boundary basins. A meeting of these Basin Councils was held in early October 2017. The actions were coordinated with the "Aguas Sin Fronteras" project, funded by the same European Union's program (WATERCLIMA).

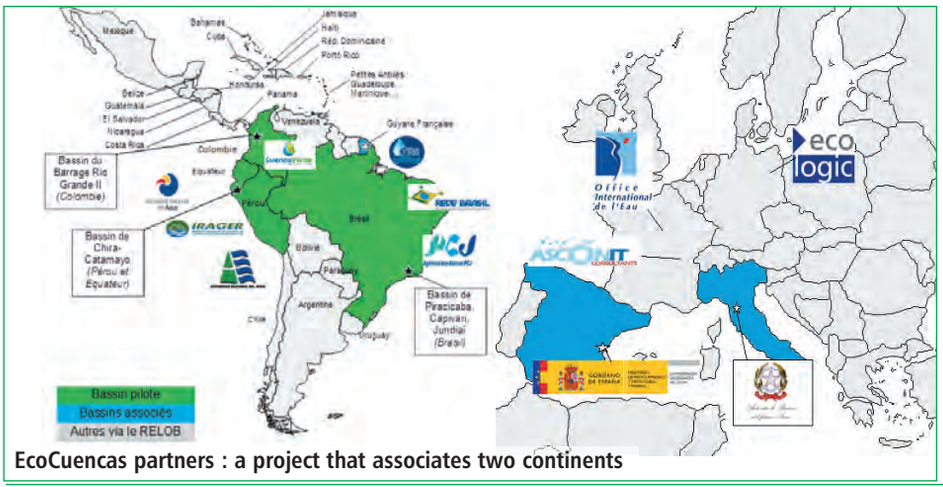
In Colombia, the Water Fund of the "Corporación Cuenca Verde" has designed and implemented a pilot project of "payment for environmental services" in the micro-basin of the Rio Grande II dam, essential for the supply of drinking water to the city of Medellin.

The process started with the identification and the complete analysis of the plots potentially concerned, then with the prioritization of these plots according to objective criteria. After the signing of specific agreements, 25 families were able to benefit from a payment in exchange for services allowing the improvement and / or the conservation of water quality in the basin. This payment, the amount of which was defined by a method based on opportunity costs, was accompanied by technical assistance for the evolution of agricultural and forestry production practices.

In Brazil, the project allowed the Piracicaba Capivari Jundiai (PCJ) Basin Agency to conduct strategic thinking on the reform of existing fee mechanisms (inflation-linked indexation, integration of new parameters for discharge fees), institutional functioning of planning (proposals for the internalization of this function), adaptation to climate change and good practices in this direction, or even the operation of Water Information Systems.

Feedback summarized from the outcomes of the project and of various events organized in all countries, as well as from a participation in international highlights, such as the OECD Water Governance Initiative (WGI) in June 2017 in Paris, EUROPE-INBO in Dublin in September 2017 or ENCOB in Aracaju in November 2017, is available on the "EcoCuencas" website:

www.ecocuencas.com



EcoCuencas partners : a project that associates two continents

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LATIN AMERICA

Colombia

Continuation of national and basin cooperation

Cooperation between IOWater, CORPOBOYACA and the Basin municipalities during the Rio Chicamocha flood on 16 and 17 May 2017

Since 2013, **IOWater** experts have supported the Ministry of Environment and Sustainable Development (MADS) and the Institute of Hydrology, Meteorology and Environmental Studies (IDEAM) on basin governance and the implementation of instruments adapted to the national context, as part of the process of consolidation of the National IWRM Policy (PNGIRH), including the drafting of the first Strategic Plans for the Macro Basins established since 2012 and the structuring of Macro Basin Committees (CARMAC).

At the same time, **IOWater** provided technical support to the Water Resources Information System (SIRH), in order to integrate interoperability methods and a common language for all Colombian data producers.

This collaboration is continuing in a second stage, primarily with the Boyaca Environmental Authority (CorpoBoyaca), and more recently with that of Chivor (CorpoChivor), in order to increase the appropriation of the National Policy (PNGIRH) at regional level for the drafting of river basin and micro-basin plans, the development of water resources and organization of communication channels between regional and national levels.

In the second half of 2017, thematic meetings were held on:

- The reform of the National Water Plan;
- The creation of a graphical interface to make data available on the CorpoBoyaca website;
- As well as those on integrated wastewater management on the scale of a department or a micro river basin.

More than 185 officials from the Ministry, Environmental Authorities and local Authorities attended these sessions.

The topic of adaptation to climate change has been omnipresent throughout the exchanges in this second stage.

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Mexico

Support to the consolidation of the Metropolitan Organization for the Drainage of Mexico Valley.

The Metropolitan Area of Mexico, which is home to around 20 million people in the Federal District and bordering States, is facing a paradox: both a recurring lack of water due to urban explosion and floods with the slightest rainfall.

Water management in the capital must therefore be reactive and concerted to avoid disasters in a city already affected by the effects of climate change.

IOWater is coordinating the implementation of the "Technical Support Project for the Consolidation of the Metropolitan Organization for the Drainage of Mexico Valley (OMVM)", with the support of the Interdepartmental Syndicate for Sanitation of Greater Paris (SIAAP) and the Seine-Normandy Water Agency (AESN).

It aims to support the Metropolitan Commission, established in 2013, whose objective is to strengthen cooperation between and skills of three stakeholders of the Metropolitan Area drainage system: the National Water Commission (CONAGUA), the Water Company of Mexico City (SACMEX) and the Mexico State Water Commission (CAEM).

The first Steering Committee of the project was organized in February 2017 in Mexico City. It validated the main orientations of the work program for the year. A IOWater coordinator was installed at CONAGUA in Mexico City.

The first year of the project was devoted to a mutual understanding of the situations encountered by Paris and Mexico with a comparative analysis of their drainage systems.

Visit of the construction site of the new drainage system

Year 2018 will be devoted to defining a strategy for the strengthening of "OMVM", both from an organizational viewpoint and a financial and institutional one.

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LATIN AMERICA

Brazil - ADASA - Federal District of Brasilia

Training program on Waste Management

Courses and workshops in Brasília on urban waste management components and instruments

The Regulatory Agency for Water, Sanitation and Energy of the Federal District of Brasilia (ADASA) is also responsible for regulating and supervising the provision of public services for urban cleaning and solid waste management.

ADASA is regulating waste throughout the Federal District (DF), i.e. 3 million inhabitants, which is equivalent to a city-state where there are no municipalities, but 31 administrative regions.

The Federal District Urban Cleaning Service (SLU), which depends on the State Secretariat for the Environment and Water Resources (Federal District Government), manages all waste management services, from waste collection to landfill.

ADASA has called upon IOWater to train its staff and public bodies in charge of waste management in the Federal District as part of a cooperation program with UNESCO.

The week-long training program in Brasilia took place from 2 to 6 October and gathered 30 people on the ADASA premises.

Training was provided in Portuguese by five experts with complementary profiles, knowing France, Germany and Brazil, and it was organized according to the following modules:

- Solid Waste Management Policies: Europe; France, Germany;
- Composition and flow of generated waste: challenges, types of waste, waste production, environmental impact;
- Waste treatment and recovery: processes, technologies and reference projects;
- Energy recovery and waste disposal: processes, technologies and reference projects;
- Case studies of metropolitan areas: evaluation of alternative experiments for urban solid waste treatment (case of Berlin, Mexico, regional waste observatories in France).

This training was a great success, allowing for an upgrading of all participants and substantive discussions on waste management in Brasilia, in particular on the importance of reconciling (household and urban waste) collection, sorting, recycling, organic recovery (composting, methanization), energy recovery and waste disposal (landfilling) activities.

The participants had the opportunity to visit the Ceilândia Mechanico-Biological Treatment Unit, the new Brasília Technical Landfill Center "Aterro Sanitário", inaugurated in January 2017 and the "Lixão da Estrutural" landfill, which has received all urban waste since the creation of Brasília and which is now being closed by the DF government.

A delegation of ten Brazilian officials participated in the technical visits of regulatory bodies and solid waste management facilities, which took place in France from 7 to 15 October and in Germany from 15 to 18 October.

This second part of the program took place in Antibes, Cannes, Nice, Paris and Berlin.

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Adasa
Agência Reguladora de Águas, Energia e Saneamento Básico do Distrito Federal

Training program on Integrated Water Resources Management

In the field of water resources management, ADASA is responsible for the implementation of the policy defined by the Federal District Water Law and for technical and institutional support to the three Federal District Basin Committees.

In 2016, the Federal District suffered from an exceptional drought with led to rationing decreed by the ADASA for the whole territory.

As part of the cooperation with IOWater, launched in 2016, the program continued in 2017 with the specialization in France of the managers of strategic projects for water resources management in the District.

The training, focusing on 5 modules, was carried out in Sophia-Antipolis:

- Principles of integrated water resources management (IWRM);
- Basin Management Plans
- Data and information management, measurement networks and regulations;
- Governance, scarcity management and adaptation to climate change;
- Environmental Contracts (rivers, water bodies).

Visits in the "Alpes-Maritimes"

The practical part of this training took place in the "Alpes Maritimes" and the "Alpes de Haute Provence" with the organizations in charge of the implementation of water management policies in the Siagne, Var and Verdon River Basins.

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LATIN AMERICA

Brazil – "HYDRUS-Brasil"

Training Center on Water and Adaptation to Climate Change and Vocational Training Center for Water Professions

The "HYDRUS-Brasil" association continued its development in 2017, as part of the Action Plan for Water and Climate supported by the French Ministry of Ecology and Solidarity-based Transition (MTES):

- **A pilot training course on "Adaptation to Climate Change in Basin Management Plans",** was organized on 18 and 19 April in Brasilia with the support of ADASA. It gathered 35 participants representing the various governmental institutions in charge of managing water and the environment in the Federal District;
- **A training session on "Performance Indicators for Drinking Water and Sanitation Utilities"** was held on 7 and 8 June in Piracicaba (State of Sao Paulo). It gathered 30 participants from the different organizations, companies and public institutions in charge of health, water and sanitation services in the Piracicaba area;
- **Two digital training modules** for distance learning were developed in Portuguese on the themes of "Efficiency of drinking water supply systems and leak detection" and "Energy saving in water and sanitation utilities".

At the same time, support was provided to **HYDRUS** for the development of its training activity in Brazil:

- **The inauguration of the managerial training center, which took place in Brasilia on 17 April,** in the presence of the ADASA Director-President, the Chief of Staff of the Governor of the Federal District, the Ambassador of France in Brazil and IOWater Director General;
- **The continuation of the prefiguration study of the technical training center of the State of Sao Paulo in Piracicaba and the drafting of HYDRUS 1st Training Catalogue** as well as the response to the request for intra-company training of an important Brazilian private operator.

www.hydruscapacitacao.com.br

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Triangular cooperation for better basin management

For four years, the Brazilian State of Rio Grande do Sul has benefited from a cooperation program involving the Basin Organizations of the Piracicaba, Capivari and Jundiai Rivers (PCJ), the French Loire-Brittany Water Agency and IOWater.

In this context, the officials of the Rio Grande do Sul State services and Basin Committees made technical visits in several Brazilian States and in France, in order to study the functioning of various models of existing Basin Agencies. .

But none of the presented models satisfactorily meets the expectations and constraints of this State of southern Brazil, where the law has been planning the creation of agencies for more than twenty years.

On the other hand, **the managers involved in the cooperation project have developed a new model,** based on a partnership with a regional development bank.

This innovative model is the subject of a draft decree, currently in its finalization phase. Its effective application now depends on the decision of the Government.

At the same time, **IOWater** is continuing its cooperation activities with the technical and financial support of the Loire-Brittany Water Agency, providing technical and methodological support for the setting up **of a pilot project in the Rio Ibicuí Basin,** one of the 25 river basins of Rio Grande do Sul.


On-site training

Inspired by the example of the Local Contracts of the Loire-Brittany Basin, a "Pact for water management in the Ibicuí Basin" was signed in November 2016 by all the partners and began to be implemented in 2017.

A student from the University of Maine completed a six-month internship in the Rio Ibicuí Basin, developing a digital model called SWAT (Soil and Water Assessment Tool). Its outcomes support, if need be, the importance of measurement networks and information systems for effective water management on the scale of a large river basin.

The hiring of a project manager and facilitators is also planned, in order to prepare the collective elaboration and execution of the projects that the Basin Agency, which is being created, will be able to finance.

All the actions carried out under this triangular cooperation will be highlighted during the next World Water Forum, to be held in Brasilia in March 2018.

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LATIN AMERICA

Peru

Cooperation in the Quilca-Chili Basin


Rio Chili in Arequipa

In recent years, the National Water Authority (ANA) has developed an ambitious river basin management policy at national level, accompanied at the end of 2012 by a new method for calculating fees for water uses and wastewater discharges. IOWater intervened to advise ANA in setting up these financial mechanisms as part of a project financed by the World Bank and then by the Artois-Picardy Water Agency in 2014 and 2015.

In 2016 and 2017, this cooperation program focused on the Rio Chili Basin aiming to strengthen the Autonomous Water Authority of this river basin and to consolidate the fees and the Water Resources Council of the Quilca-Chili Basin (CRHC). Missions carried out by experts from IOWater and the Water Agency allowed exchanges with local authorities and basin council members in four key areas:

- **Economic mechanisms** (fees, water funds);
- **Participation** (sharing of experience to improve the representativeness of the CRHC);
- **Planning** (adaptation to climate change);
- **A case study** in the Quilca-Chili Basin.

The choice of the Quilca Chili Pilot Basin was strategic in view of the experience accumulated by the local team and the ambition of the managers to consolidate their action at regional and national level. The missions in Arequipa and the exchanges with ANA in Lima were particularly dense.

Strategic topics were identified for an extension of this cooperation in 2018:

- Institutional organization, training in decision-making by basin organizations;
- Training of operators of water and sanitation services;
- Information systems and basin observatories;
- Plans for basins and hydrographic regions;
- Sustainable financing of actions of general interest at basin level.

The project is coming to an end with a very positive assessment of the actions carried out in the Quilca-Chili pilot Basin.

The importance of continuing exchanges between French and Peruvian basin organizations and of developing synergies with other ongoing projects in Peru and Latin America should be emphasized.

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El Salvador

Decentralized cooperation


Theoretical part in a classroom

In 2014, the Paris Public Sanitation Service (SIAAP) requested IOWater for project management assistance in El Salvador, the objective of which was to check the sizing and design of the future wastewater treatment plant of the municipality of the 13,000-inhabitant city of Jucuaran.

In 2017, IOWater was entrusted with the training of the Salvadorian team, who will be in charge of the operation, maintenance and monitoring of the new plant. These operators therefore participated in a one-week training course in France at IOWater on the purification processes and on the main operating tasks and tests.

Training was conducted in Spanish with a theoretical part in a classroom in order to give learners the basics necessary to understand the physical, chemical and biological purification phenomena.

It was supplemented by the practice of "blank" operation tests in the training unit of IOWater's training center and by a visit to a wastewater treatment plant similar to the treatment system built in Jucuaran.


Practical part outdoors

This visit allowed illustrating most of the topics addressed during the training, to practice in "real size" the main operation tests and to be able to interpret them.

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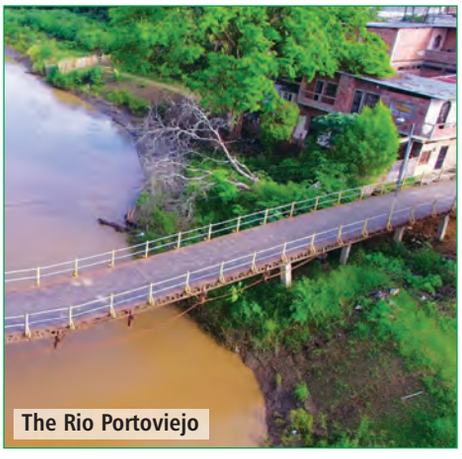
LATIN AMERICA

Ecuador

Basin Councils in Ecuador: fostering participation


The Rio Portoviejo

IOWater's support to the National Secretariat for Water (SENAGUA) for the development of Integrated Water Resources Management in Ecuador, co-financed by the Adour-Garonne Water Agency (AEAG), continued in 2017 both at the level of the Rio Portoviejo pilot Basin in the province of Manabí, and at the national level for all the basins.

The work was part of the memorandum of understanding signed in the spring of 2016 by SENAGUA, the Ministry Coordinating Strategic Sectors (MICSE), the French Embassy, the Adour-Garonne Water Agency and **IOWater**.

Two areas have especially been the subject of closer cooperation:

On the one hand, participatory planning, through the constitution, according to the 2014 Water Law, of River Basin Councils in the 9 River Basin Districts, was accompanied by many exchanges between the SENAGUA partners and **IOWater** experts.

Mechanisms adapted to the Ecuadorian context were proposed to ensure:

- Better representation of the basin stakeholders;
- Close coordination between governmental institutions (inter-institutional committees);
- Support provided by the technical secretariat,
- Articulation between the different levels of regional planning,
- Drafting of River Basin Management Plans,
- A practical guide has been published.

To support the Basin Councils, Local River Basin Planning Units (UPHL) have advanced in the preparation of an inventory, as well as in the participatory assessments.

The initial methodological exchanges have thus been concretized in practice.

On the other hand, two guides were developed for water information systems; one on data management in the water sector in Ecuador and the other on the management of metadata catalogues.

This line of cooperation made significant progress, including the coordinated production of the first maps for the inventory of all river basin districts, in connection with the central services.

It also enabled the development of a module specifically dedicated to integrated management and basin councils under the Ecuadorian National Information System.

This module provides access to all the maps produced for the inventory of the basins as well as practical information for the members of the Basin Councils.

Its design should make it an essential tool for information, training and process ownership for representatives of the newly formed basin councils.

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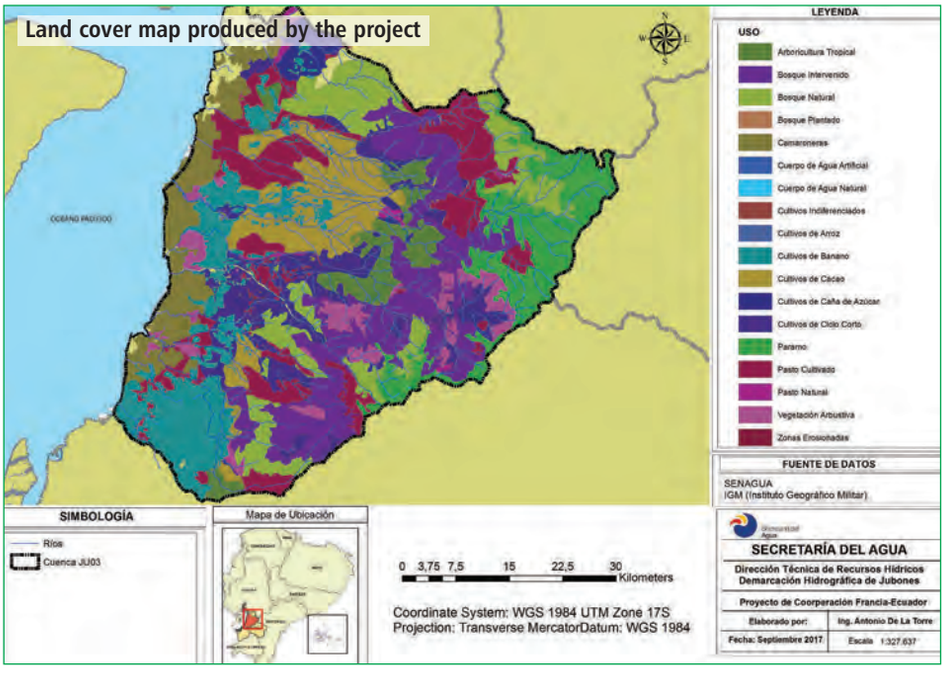

Land cover map produced by the project

Secretaría Nacional del Agua

AGENCE DE L'EAU
ADOUR-GARONNE

www.iowater.org

The water world on the Web

PACIFIC – ASIA

New Caledonia

Training for IFAP

In July 2017, **the IOWater's National Water Training Center (NWTC)** carried out, on behalf of the Training Institute for Public Administration (IFAP), two 5-day training sessions in New Caledonia in Nouméa.

These training courses were intended for the staffs of the City of Nouméa but also for other communities of Grande Terre and various islands.

This training, which focused on the monitoring of the laying out of sanitation and drinking water supply pipes, included a training part in rooms as well as a building site visit to enable trainees to visualize concretely the installation of the systems and to confront the realities of building sites.

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The group of trainees

Training and technical assistance for Enercal

ENERCAL, a New Caledonian energy production company, called on IOWater's NWTC to train the teams in charge of operating the demineralized water production units of the Prony, Doniambo and Ducos power stations. This action initiated in 2016 on the topic of ion exchange resins, continued in 2017 on reverse osmosis and electrodeionization, two processes implemented on the Ducos site.

On the other hand, the production line of the Prony power station was the subject of a technical audit which led to proposals for improvement in order to overcome the malfunctions noted and to make the quality of the produced water more reliable, on which depends the proper functioning and sustainability of the turbines.

✔

ENERCAL
L'ÉNERGIE DE TOUT UN PAYS

Osmoflo process of the Ducos site

Cambodia

The Stung Sen Basin Program of Measures

The third phase of this project, which was supported by the Loire-Brittany and Rhine-Meuse Water Agencies, increased the help provided to the Cambodian Government and the Tonle Sap Authority for the implementation of the pilot Stung Sen River Basin Management Plan.

Visit of the Metz wastewater treatment plant

In the context of strengthening the link between institutional cooperation and decentralized cooperation, actions focused on:

- The development of access to drinking water with decentralized cooperation projects, and the setting up of a "Drinking Water" working group within the Stung Sen Basin Committee to organize and support these actions;
- The implementation of field campaigns;
- Raising the basin population's awareness, especially in schools, on the topics of water, sanitation and hygiene.

At the same time of these actions, **two one-week training courses were organized at IOWater's training center as well as a study visit in the Rhine-Meuse River Basin.**

The participants of the training courses were able to improve their use of the sampling equipment and techniques and the visit of the Regional Water Laboratory of the city of Limoges allowed them to visualize the analytical techniques, the organization of a water laboratory and the "sampling service".

They also learned about drinking water purification treatments in the pilot units of IOWater's National Water Training Center (NWTC). Finally the visit of the drinking water plant of Poitiers gave them an overview of the treatments for pesticides removal.

This study visit also allowed the Cambodian partners to discover the techniques for sanitation and waste management with the visit of the HAGANIS wastewater treatment plant in Metz in particular, and to meet the authorities of the Rhine-Meuse Basin during the meeting. of the Basin Committee on 3 June 2017.

✔

LES AGENCES DE L'EAU

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Laos

IWRM Strengthening Project

Workshop on the Laos Water Information System

The third phase of the project to strengthen IWRM took place in a context of recent legislative evolution in Laos with the approval by the National Assembly of the revision of the Laotian Law on Water and Water Resources in May 2017 and the reorganization of MoNRE.

It ended with the organization of an interministerial workshop on 14 December on the premises of the Ministry of Water Resources and Environment that allowed sharing the feedback and results with the main institutional water stakeholders in Laos, and presenting them the lines of work planned for the future.

During the year and with the support of the experts from the French Water Agencies and **IOWater**, the technical teams of the Department of Water Resources (DWR) of MoNRE organized their work along two lines: the continuation of the development of the Laos Water Information System "LaoWIS", and practical exercises for the implementation of Integrated Management in the second pilot basin, that of "Nam Sa - Nam Kadan".

Field surveys in the Nam Sa - Nam Kadan Basin

The Data Management team continued to feed the Laos water database with data from the DWR and its partners: a workshop was held in Vientiane to increase coordination with these partners.

The team in charge of the characterization of the Nam Sa - Nam Kadan Basin carried out two field assignments to collect data useful for analyzing the situation in the basin. During these two missions, 37 village chiefs were interviewed on socioeconomic issues related to water use and management.

Following these field surveys, training on data valuation was carried out by the French experts so that the DWR team could produce a first set of maps and then a basin characterization report.

At the same time as these activities, the experts from the Water Agencies and IOWater continued to provide technical support to the members of the Secretariat of the Nam Ngum Basin Committee (NNRBCS) in the implementation of the Basin Management Plan.

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Myanmar

Basin Management

IOWater is implementing a project in Myanmar which is supported by the Loire-Brittany Water Agency.

Year 2017 marked the beginning of a new process of Integrated Management in the Pilot Balu River Basin, with, in particular, a training course organized in Naypyitaw and attended by members of the Ministries of Natural Resources and Environmental Conservation, Transport and Communication, Agriculture, Livestock and Irrigation, as well as local stakeholders in the basin.

During this training, the Integrated Basin Management processes were presented to the participants and group exercises allowed them to appropriate these concepts.

At the same time, a fundamental work was done to collect the data necessary for the characterization of the Balu River Basin from the specialized services.

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Training in Naypyitaw

ASIA

China

French-Chinese cooperation on integrated management in the Hai River Basin


Steering Committee - Tianjin - March 2017

As part of an agreement signed in 2009 between the Ministry of Ecology and Sustainable Development (France) and the Ministry of Water Resources (China), a solid cooperation developed and allowed the testing and adaptation of French institutional and technical solutions in line with European practices to meet the challenges of the Chinese water crisis.

The cooperation project for Integrated Water Resources Management in the Hai River Basin was launched in 2011 with the support of the Seine-Normandy Water Agency, SIAAP and the Great Lakes of the Seine. The activities helped to test the application of new governance tools in the Zhou River Pilot Sub-Basin with very practical results: production of an analysis of the situation of water resources, establishment of an operational coordination group for water management and a management plan and action plan with an investment program estimated at 9 billion Yuan.

This project entered its 3rd phase in 2016 with the replication of the approach used on a much larger basin, that of the Luan (50,000 km^2), in a context of adaptation to climate change whose effects are already very marked in this Northeast region of China.

Year 2017 was marked by an analysis of the situation in the Luan Basin, and by the drafting of a guidance document describing the feedback from the French-Chinese cooperation for the implementation of participatory basin management according to the principles of the European Water Framework Directive.

As an accompaniment to the historical institutional component, an economic component, financed by the AFD-implemented FEXTE tool, enabled the realization of complementary technical expert appraisals in the following areas:

- **Water data:** improved management and access to the data necessary for the preparation of Basin Management Plans;
- **Discharge standards:** recommendations on the evolution of discharge standards and link with the quality objectives set for watercourses;
- **Wetlands:** analysis and recommendations on wetland restoration projects, a component carried out by Biotope following a call for tenders.

At the same time, IOWater has provided:

- **The identification of the specific needs of Chinese partners** for technical solutions to address the main problems encountered in the pilot basins;
- **The inventory of French companies potentially interested in the Chinese market,** as part of a joint action with the competitiveness clusters and the clusters of the "France Water Team" Network;
- **A connection,** during the project's conclusion seminar, with the support of the China Water Enterprises Confederation (CWEC).

The conclusion seminar of the FEXTE project was held on 5 December in Tianjin. Co-organized by **IOWater** and the Hai River Commission which hosted the event. It allowed presenting the project achievements to a wide audience including institutions and local authorities of the Hai River Basin, representatives of the Regional Economic Service (SER) and of the Department for Cooperation and Cultural and Environmental Action of the French Embassy in China, of Business France and AFD, as well as representatives of competitiveness clusters and French and Chinese companies interested in a collaboration.

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Technical visit in the Luan River Basin - March 2017

China

The China-Europe Water Platform

The China-Europe Water Platform (CEWP) was established in 2012 with the goal of promoting cooperation between these 2 large regions of the world. It has been addressing the major issues related to water and sustainable development through high-level political dialogue, technical and scientific exchanges and the promotion of innovative technologies.

Four topics are being covered:

- Water management and ecological security,
- Water in rural areas and food security,
- Water in urban areas,
- Water and energy.

More than 20 Member States of the European Union have shown their interest, and 10 of them take a significant part in facilitating the Platform.

France is leader of the topic "water management and ecological security", in partnership with Finland and Portugal.

The 5th Annual Conference of the China-Europe Platform was held on 21 and 22 September in Turku, Finland.

It gathered about 400 participants from 22 countries, with a large Chinese delegation from the Ministry of Water Resources, institutions under its authority, and companies.

Mr. Chen Lei, Chinese Minister of Water Resources and Mr. Karmenu Vella, EU Commissioner for the Environment, signed a Memorandum on the establishment of an EU-China Water Dialogue. They signed the Turku Declaration with representatives of 12 Member States.

In a village of 60 stands, nearly 180 BtoB meetings were organized with the economic stakeholders.

The European Union will provide a €6 million financial support to the Platform's activities, through a "Partnership Instrument", which will co-finance actions on the four working themes and provide support to the Secretariat.

IOWater is leader of the European consortium. It is in charge, with its Finnish and Portuguese partners, of EU co-financed actions on the topic "Water management and ecological security".

It participates in the Steering Committees (the last one was held in Lisbon in May 2017), in the annual conferences and technical congresses as well as in the coordination meetings of the European partners in charge of the projects.

The Hai River Basin, which has been the subject of a French-Chinese bilateral cooperation since 2012, will be the reference basin for testing the application of the WFD principles in China. The Finnish and Portuguese partners will carry out activities on the Taihu Lake and Shanghai Region respectively.

This 4-year project amounting to €1.9 million started in January 2018.

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P.I.A.N.O.
Policies, Innovation And Network for enhancing Opportunities for China-Europe water cooperation
中欧水资合作机会增进政策、创新和联网

Seminar "Towards participatory management at basin level"

A high-level seminar was held on 6 December 2017 in Beijing, co-financed by the European Delegation in China, to present the feedbacks from the cooperation in the Hai River Basin and the practices of European countries in basin management and ecological security.

It allowed exchanging with the "MWR", its 7 Basin Commissions and their specialized institutes on their concerns and their expectations from the European partners for support regarding good practices and innovative technologies.

Nearly 60 Chinese participants took part in the work, accompanied, on the European side, by some thirty representatives of the public and private sector, mainly from Estonia, Finland, France and Portugal.

The seminar, whose work was facilitated by Mr. Eric Tardieu, IOWater Director General, was opened by Mr. Liu Zhiguang, Director General of Cooperation at "MWR", Mr. Chris Wood, Head of the Delegation of the European Union in China and Mr. Jean-Baptiste Main de Boissière, Minister Counselor at the French Embassy in Beijing.

www.project-piano.net

✔

Mr. Eric Tardieu and Mr. LinChao from the Hai Commission

ASIA

China

12th Qingdao International Water Forum

From 27 to 30 June 2017, the 12th Qingdao International Water Congress (China) was organized by the Chinese Association of Science and Technology, the International Water Association (IWA), the Chinese Association of Water Companies and Local Authorities. Nearly 2,000 water treatment industry experts from more than 50 countries gathered to exchange innovative technologies and opportunities in water desalination, reuse and management, and in sustainable water resources management.

Among the official guests, **Mr. Eric Tardieu, IOWater Director General, spoke during the opening session to present the Europe-China cooperation in the field of water resources management,** especially the China-Europe Water Platform (CEWP), which gathers a number of European countries and China, around cooperation projects on water governance, economic exchanges and research. IOWater is implementing the activities of the CEWP's "Water Resources Management in Basins" component.

In his speech he also reported on the latest developments in the implementation of the European Water Framework Directive.

In addition, during this Congress, **IOWater experts also presented the progress of French-Chinese bilateral cooperation projects in the field of water** involving the Seine-Normandy Water Agency, AFD, SIAAP and the Great Lakes of the Seine, in particular, as well as those **of the PIANO project** (Policies, Innovation and Networks for Enhancing Opportunities for China-Europe Water Cooperation - project-piano.net), funded by the Horizon 2020 European Framework Program for Research.

Opening Ceremony of the Forum

IOWater contributes to the goal of developing business and cooperation opportunities in research and innovation between Europe and China.

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Thailand

Training and technical support for Michelin-Thailand


Teaching phase in a room

Many emerging countries have recently strengthened their waste regulations, particularly in Asia.

Industrial processes often generate specific wastewater that requires both adapted treatment facilities, but also teams trained to their proper operation.

Operating dedicated wastewater treatment plants and obtaining consistent discharge levels are becoming increasingly challenging for industrialists.

The Michelin Company entrusted the International Office for Water with the design and implementation of a training plan for one of its sites in Thailand.

A real challenge because not only the treatment plant is unique but also the operating teams must use modules animated in the Thai language. This training plan therefore required a previous important designing phase to overcome these constraints.

The operators and their managers particularly appreciated the adaptation of the modules to their context and the alternation of theoretical and practical phases, delivered directly on their site.


Practical training phase

In addition to these training sessions, **technical assistance was also contracted to help Michelin site managers improve the operation of the facility in the short and medium terms.**

This double activity shows the growing interest of industrialists, especially at international level, in the combination of training and technical support assignments.

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EUWI+ for Eastern Partnership

Basin management and WFD implementation in 6 Eastern European and Caucasian countries

This 4-year project (2016-2020) is part of the flagship action of the European Commission in the field of water resources management under the Eastern Partnership (EP).

It was initiated by the European Commission's Directorate-General for European Neighborhood Policy and Enlargement Negotiations (DG NEAR), which is the main financial support, with co-financing to be provided by the participating Member States (Austria and France).

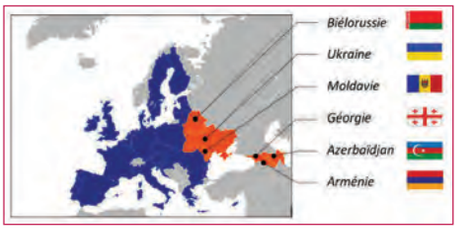
IOWater, on behalf of the French Ministry of Energy and Solidarity-based Transition and with the support of the Artois Picardy Water Agency, the French agency of reference in this area, is working to strengthen the convergence with the EU water-related Directives in six Eastern neighbor countries: Armenia, Azerbaijan, Belarus, Georgia, Moldova and the Ukraine.

The project progress is monitored at high level by the Ministries responsible for the Environment and Water Management in each one of these 6 countries.

To ensure real and sustainable progress in participatory basin planning and monitoring, the project combines a capacity-building effort with the establishment of local expertise. It thus follows an innovative intermediary approach between technical assistance and institutional twinning between countries. In each country, it plans to:

- Improve the legal and regulatory frameworks in the spirit of the WFD provisions;
- Provide technical support for the development of a pilot River Basin Management Plan (RBMP) in a basin district of the country, with a transfer of competences for transposition into other basins;
- Build capacity for the implementation of key RBMP measures related, in particular, to the European Directives on Urban Wastewater, Nitrates, Floods, etc.;
- Build capacities for monitoring water status;
- Develop and strengthen national water databases and ensure data compliance with the Shared Environmental Information System (SEIS) principles for data collection and sharing;
- Organize stakeholders' participation at each level, especially that of the basin, with the setting up of Basin Committees.

The development of participatory management will be tested on pilot basins covering 20 to 30% of the territory: Armenia (Sevan, Hazdan) Azerbaijan (Kura upstream of Mingachevir Reservoir), Belarus (Pripyat), Georgia



(Alazani/Iori, Khrami/Debed) Moldova (Prut) and Ukraine (Dnepr- phase 1).

The project is coordinated with the various water cooperation initiatives and builds on the results and lessons learned from the EU's regional projects in Eastern Partnership countries, including "Environmental Protection of International River Basins (EPIRB)" (2012-2016).

This ambitious project is taking place under the auspices of UNECE and OECD, which lead the interministerial process of National Dialogues, and UBA (Austrian Environment Agency), leader of the Consortium of Member-States, which is directly in charge of surface and ground water monitoring aspects and support for laboratory accreditation.

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EUWI+
EU WATER INITIATIVE
FOR EASTERN PARTNERSHIP

Ukraine

Management of Waste Electrical and Electronic Equipment (WEEE)

The EU-funded Twinning Project "Introduction of a management system of Waste Electrical and Electronic Equipment (WEEE) in the Ukraine" aims to introduce into the waste legislation the tools necessary for the development of waste recycling, in accordance with the Partnership Agreement signed by the country with the EU.

As part of this project which started in February 2016 and which will continue until 2018, support is provided to the Ministry of Regional Development for the establishment of efficient and sustainable collection and recycling mechanisms for WEEE, according to the standards and practices developed in the European Union.

France and Spain are partners of Austria in the Member States Consortium implementing the project.

IOWater is managing the French contribution and transferring its know-how in the management of reforms and information flows with the great support of the ADEME experts.

This reform introduces the concept of the extended responsibility of EEE producers, before gradually extending it to other categories of waste so that, in the Ukraine, the landfill will ultimately only concern non-recoverable waste!

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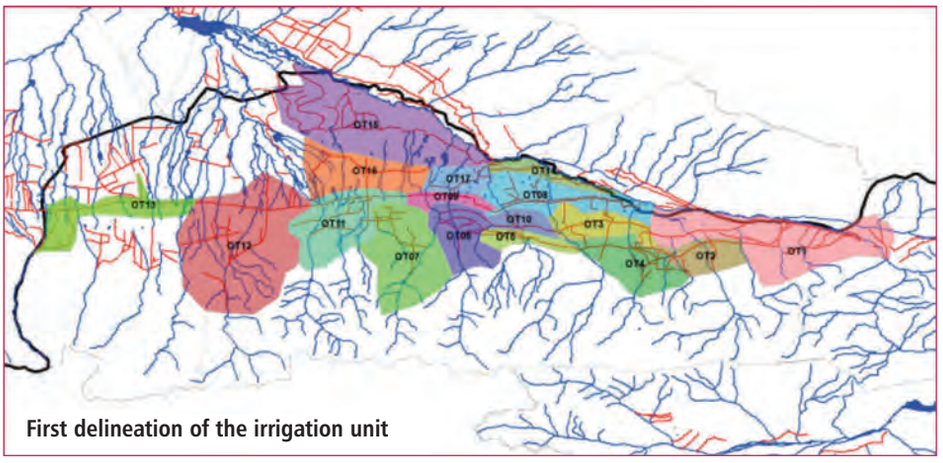
Kyrgyzstan / Kazakhstan

Water Accountability in the Transboundary Chu-Talas River Basins



First delineation of the irrigation unit

The "Water Accountability in the Transboundary Chu-Talas River Basins" project is financed by the Swiss Agency for Development and Cooperation (SDC).

It aims at the promotion of a modern, sustainable and transparent water resources management in the Chu-Talas River Basins that can serve as a blue print for an effective transboundary resources management at national and regional level.

The activities, which started in December 2016, focus on the complete modernization of the bottom-up demand planning and the top-down supply-driven water distribution system in the Chu-Talas River Basins.

They include:

- The full digitization and automation of the current accounting procedures in place by using state-of-the-art information technology;
- The development of new capabilities for planning, effective operational analysis as well as reporting and data and knowledge exchange.

Whereas in the existing system, data requests had in many cases to be communicated via fax and/or telephone in a tedious way, with a modern digital system, the stakeholders will be able to immediately query selected data on their computer terminals and/or tablets in a safe and secure manner.

The Chu River

The data will be presented in an easily accessible and understandable way for everyone at the level of Water Users' Associations (WUA).

The main expected results are:

- **At local level,** the authority in charge of water allocation for irrigation will have the capacity to follow on line, on tablet, the status of water allocation on a daily basis;
- **At basin and national level,** the national and basin authority will have access to new national information services (reports, indicators, bulletins, maps) facilitating the analysis of the water allocation efficiency per sector and per canal;
- **At transboundary level,** the transboundary data sharing will be reinforced with regular production of joint transboundary bulletins of the water allocation situation.

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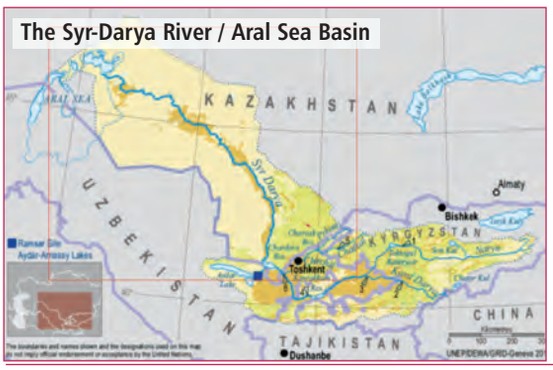
Kazakhstan

Syr-Darya River Basin

As part of the Global Climate Action Agenda (GCAA) - launched at the COP22 in Marrakech and supported by the French Ministry of Ecological and Solidarity-Based Transition (MTES) - a project to improve water governance in Kazakhstan was developed jointly with the National Water Authority and the Syr Darya Basin Authority through various field visits and the organization of 2 workshops. This project, whose general objective is to improve the efficiency of water resources management in the Syr Darya Basin, will be presented to the interested donors.



The Syr-Darya River / Aral Sea Basin

The expected results for the Syr-Darya Basin are as follows:

- Development of a Flood and Drought Management Plan;
- Revision and adoption of the River Basin Management Plan integrating the aspects of drought and flood management;
- Update and adoption of a Program of Measures with the implementation of selected «soft» measures;
- Establishment of a Basin Water Information System, which will provide new water-related data services.

✔

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International Conference - 18-19 May 2017 - Moscow, Russia

"The Challenges of River Basin Management in a Context of Climate Change"

The Presidium of the opening ceremony © INBO

The International Conference "Challenges of River Basin Management in the context of Climate Change" was organized in Moscow on 18-19 May 2017 by the Network of Basin Organizations from Eastern Europe, Caucasus, and Central Asia (EECCA-NBO), on the premises of the Russian Research Institute of Hydraulic Engineering and Land Reclamation.

The following issues were dealt with:

- National strategies for adaptation to climate change;
- River Basin Management Plans for national and transboundary basins;
- Practical measures for adaptation to climate change in basins and the water-food-hydropower-environment nexus;
- Support to the development and strengthening of operational Basin Organizations;
- Data management using new Information-Communication Technologies (ICT) at the level of national and transboundary basins to develop operational Water Information Systems (WIS) for decision making;
- Role of economic analysis and financial mechanisms in sustainable basin planning;
- Land reclamation issues in river basins; protection and restoration of wetlands and aquatic ecosystems.
- Control of water demand and strengthening of efficient uses of water.

The participants reminded that the challenges related to climate change and its consequences (floods, droughts, aquatic ecosystem destruction, etc.) require urgent adaptation measures.

The "Paris Pact on water and adaptation to climate change in the basins of rivers, lakes and aquifers", proposes practical measures through:

- capacity building and better knowledge especially in operational Water Information Systems (WIS);
- strengthened governance;
- adequate financing.

Of particular note is the role that the UNECE Water Convention and its task-force on water and climate play in the development of adaptation strategy for transboundary river basins by preparing guidelines, implementing projects, and exchanging experience.

It is of prime importance to engage economic development sectors into a dialogue about management and use of freshwater resources.

In this respect, the advantage of developing dialogues in transboundary basins to facilitate cooperation among the concerned parties in various sectors was highlighted, and the establishment and strengthening of Basin Councils and Committees were recommended.

The participants expressed a strong interest in **the European Union Water Initiative as part of the Eastern Partnership in 6 EECCA Countries** and wished to be informed of the results of this project.

The participants proposed to organize the next Network's conference in 2018 on the theme "Land reclamation in the EECCA countries: problems and solutions" and especially discuss the following topics:

- new technology for land reclamation, more effective use of water, and prevention of soil salinization;
- prospects of irrigated agriculture development;
- application of up-to-date information technologies for monitoring and assessment of irrigated land.

The participants expressed high interest in the participation of representatives of EECCA basin organizations and national authorities in next international events such as the Europe-INBO international conferences in Dublin (Ireland) in September 2017 and in Seville (Spain) in October 2018 and in the 8th World Water Forum in March 2018 in Brasilia (Brazil).

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Signing of the IFAS cooperation agreement © INBO

EUROPE

"Peer-to-Peer"

Renewal of the cooperation mechanism between European basins for the implementation of the Water Framework and Flood Directives!

In November 2017, the DG Environment of the European Commission selected the consortium composed of **IOWater** (France-lead partner), the National Institute of Hydrology and Water Management (Romania), the Secretariat of the Mediterranean Network of Basin Organizations (Spain), Ecologic Institute (Germany), to extend the Peer Review Mechanism set up in 2015 and 2016.

This new **Peer-to-Peer** project aims to provide basin organizations with a simple, voluntary and targeted system to allow mutual learning among peers on the WFD and Flood Directive implementation.

The institutions involved in the implementation of these Directives are invited to join this community by applying to participate in the exchanges as an expert or as an institution entrusted with an expert mission.

Linked to the Common Implementation Strategy (CIS), the mechanism also includes 5 online seminars to disseminate the best practices.

All materials, related to the Peer Review Mechanism of the previous phase and the new Peer-to-Peer project, are available on the project website:

www.aquacoope.org/peertopeer

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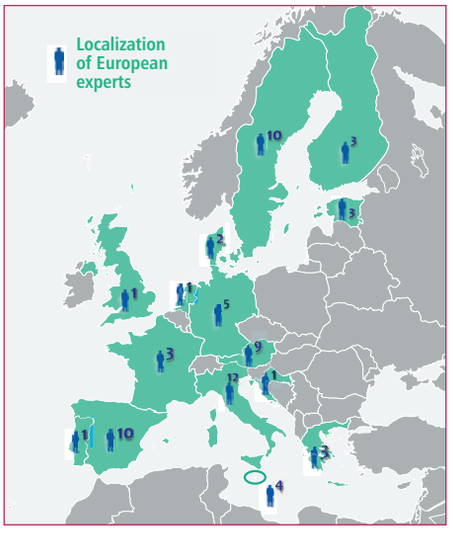


INCOVER

Innovation at the service of wastewater recovery

The European project INCOVER (Innovative Eco-Technologies for Resources Recovery from Wastewater), aiming to implement innovative technologies for wastewater treatment, is already halfway through completion!

The installation of the three demonstration plants, dealing with effluents of municipal, agricultural and industrial origin, has been completed in Spain and Germany. They provided their first **"bioproducts":** bioplastics, organic acids, biomethane, biochar, etc.

Research is continuing to make the technologies as operational as possible, optimize yields and thus achieve the given objectives, including a 50% reduction in operating and maintenance costs for wastewater treatment.

A decision-making support tool is also developed to enable decision-makers to choose an optimized treatment system, according to their type of wastewater, needs and constraints.

The **International Office for Water** is continuing its work of communication and promotion of the project in order to arouse the interest of the targeted stakeholders.


All partners at a meeting in Leipzig in June 2017 © UFZ

The project was thus presented during the World Water Week in Stockholm or even during the "Smart Sanitation" technical day organized by the HYDREOS competitiveness cluster. Articles of technical innovation have been published in French and European newspapers as well as scientific articles in specialized journals.

"Innovation Workshops" will be organized in 2018 to facilitate the marketing of the developed technologies. These workshops will gather public and private water utility managers, companies and industrialists, who will share their experience and advise on technology development.

These workshops will also be an opportunity to establish a privileged contact with potential future users of INCOVER technologies.

Demonstration plant at the Agropolis Campus in Barcelona.

www.incover.org

✔

Information: Fax: +33 4 93 65 44 02 - E-mail: cooperation@iowater.org

15th "EUROPE-INBO 2017" Conference

126 participants coming from 33 countries © INBO – C. Runel

The 15th "EUROPE-INBO" Interna-tional Conference took place in Dublin-Malahide, Ireland, from 20 to 23 September 2017.

The participants, coming from 33 countries, discussed, in four roundtables, the current crucial issues related to water resources management in the European Union, such as:

- The future of the Water Framework Directive (WFD) to be reviewed in 2019;
- Adaptation to climate change in basins;
- Stakeholder and public participation in water resources management;
- New threats for aquatic environments.

Workshops allowed, on the one hand, discussing the organization of water data management and reporting to the Commission, and, on the other hand presenting the progress made by the European cooperation **"EcoCuencas"** project, whose purpose is the development of financial mechanisms, with a view to sustainable development, for adaptation to climate change in pilot basins in Brazil, Colombia, Ecuador and Peru.

The participants formulated many recommendations on all these topics during these workshops and the four roundtables.

It was recalled that, despite efforts made to reduce the pressures of human activities on water resources, the goal of "Good Status" of Water Bodies will not be achieved in all basins by the 2017 deadline.

Giving thought on the future of water policy in Europe must rely more on experts from Basin Organizations.

The review of the Directive must be concerned with a better citizens' acceptance in order to achieve greater efficiency.

This implies that the objectives are understandable to the people, accessible and appropriate, and that progress made is recognized.

It is necessary to improve water governance by better involving Local Authorities and the economic field stakeholders.

The arrangements for allocating European funds must be simplified in order to enable more efficient and sustainable investments to meet the needs of the least developed countries of the European Union.

The "one out, all out" principle, applied to the assessment of "Good Status", masks the progress recorded and is demobilizing for the stakeholders involved at all levels.

The WFD should evolve on a wider basis of proven scientific advances. A cautious approach to revising it should be a continuation of the process, with a particular focus on improving the effectiveness of field actions.

Indeed, there is a need to improve the operational conditions for its implementation by both a more pragmatic approach, based on reliable data, to the objectives and deadlines to be achieved, and by the inclusion of the WFD into a European water policy better integrated in the other EU sectoral policies (agriculture, energy, transport, marketing of chemicals, etc.).

Innovative projects should be promoted and the provision of adequate financial and technical support should increase.

Enabled by the gradual implementation of the INSPIRE Directive, the development of information systems and their interoperability will be the key drivers of this better integration by extending them to climate change data in a context of great uncertainty. The current system is still largely insufficient to assess the real status of water and environments and their evolution in many EU territories.

The preparation of the 3rd cycle of River Basin Management Plans for 2022-2027 must already be initiated, with a more realistic definition of the objectives to be achieved and by taking into account the UN Sustainable Development Goals including SDG6, as well as the Paris Agreement on climate.

Regarding adaptation to climate change in the freshwater sector, the COP 21 of Paris in 2015 and the COP 22 of Marrakech in 2016 demonstrated the need to accelerate without delay the implementation of appropriate actions to be quickly included in the Basin Management Plans.

The Paris Pact on "Water and Adaptation to the Effects of Climate Change in the Basins of Rivers, Lakes and Aquifers" launched by INBO in partnership with the United Nations Economic Commission for Europe (UNECE) during COP21, clearly summarizes the priority actions to be implemented for adaptation in basins.

As a follow-up to this pact, an inventory of innovative projects and successful experiences in adapting to climate change in pilot basins should allow for the dissemination of knowledge and a better sharing of good practices and the use of a common language and references.

Better integration between the WFD, the Flood Risk Management Directive and the Marine Strategy Directive should be sought for, especially when defining climate change adaptation measures to be incorporated into the Basin Management Plans and Programs of Measures.

The application of these Directives is still too sector-based and too often depending on separate administrative services!

Given the development of water shortages in many EU regions, it is becoming essential to better manage water demand, foster water savings and especially to improve the recycling of treated wastewater and the Nature Based Solutions.

INTERNATIONAL NETWORK OF BASIN ORGANIZATIONS - INBO

20-23 September 2017 - Dublin – Ireland

These adaptation measures must be based on a multisectoral approach with all economic sectors having an impact on the concerned areas, basins and sub-basins. Sectoral policies (energy, agriculture, urban planning, transport, recreational activities, fisheries and fish farming, etc.) and the adaptation measures that concern them, must also be integrated and consistent.

The development of new Programs of Measures should be an opportunity to improve or reinforce some adaptation actions already present in current programs, taking into account the evolutions that will be highlighted by the improvement of local knowledge on climate change and its effects on territories, uses and environments.

The stakeholders' and public involvement in basin management is crucial for improving water resources management.

Stakeholders' information and participation in decision-making processes from the start should still be developed for greater ownership of the measures and actions of the Basin Management Plans.

Public access to monitoring results and to knowledge about water and aquatic environments, their status and evolution, is an obligation that facilitates this ownership and therefore improves effectiveness.

From the start, the WFD emphasized the need for public participation in the drafting of Basin Management Plans.

This participation is based not only on the setting up of decision-making or consultative bodies at different local levels but also on a relevant representation of the different categories of users in these bodies.

It is also necessary to enhance the public understanding of the challenges ahead and efforts must be made for the consultations to mobilize more users with better representativeness so that the financial efforts needed are understood and accepted.

The participants in **"EUROPE-INBO"** Conference stressed the importance of these participatory approaches to achieve better results in water resources management.

As regards the emerging environmental issues, improved knowledge and better measurement tools enable to show new threats to aquatic environments: new pollutants coming from the human, animal or plant health protection sector, new hazardous substances or micro-pollutants, endocrine disrupters.

More difficult to control than organic pollution, these pollutants, that are present in small quantities, can enter the food chain with harmful effects on health or the environment.

Aquatic environments also have to deal with the quick development of invasive alien species for which the remedies are poorly understood.

Finally, river basins suffer from the effects of hydromorphological changes induced by human actions (river works, works on the banks, obstacles to flow, etc.).

All this inevitably leads to a degradation of environmental assets, this is why it is essential to bring water and biodiversity policies closer and to give priority to Nature Based Solutions, whenever possible.

The participants in **"EUROPE-INBO"** Conference highlighted the need to take actions that are more effective and more respectful of nature to find the best remedies to this degradation of our aquatic heritage.

The conference also examined various international cooperation initiatives for the development of good governance in the basins and sub-basins of Eastern Europe, Caucasus and Central Asia or of the Mediterranean area.

These examples show that the EU and the Member States must maintain a high level of solidarity with the neighbor countries and help funding good governance. The implementation of the principles and tools of the European Directives in these countries of the Neighborhood Area, supported by Twinning Projects with Member Countries in particular, allows for a significant improvement in water governance and enables transboundary cooperation, when the case arises.

The participants congratulated Mr. Jean LAUNAY, President of the French National Water Committee, for the masterful way in which he fulfilled with determination and success the chairmanship of the EUROPE-INBO group during the year 2016/2017.

The Presidency of the EUROPE-INBO Group for the coming year has been entrusted to Ireland until the next conference in 2018 to be held in Seville, Spain, from 17 to 20 October 2018.

www.inbo-news.org

✔

Closing ceremony © INBO - C.Runel

"To facilitate the implementation of European Water Directives"

Information: Fax: +33 1 44 90 88 60 - E-mail: secretariat@inbo-news.org

"Smart-Met"

Future innovative markets for connected networks in Europe

LIOWater is coordinating the "Smart-Met" (Pre-Commercial Procurement for Water Smart Metering) project dealing with the pre-commercial public procurement of innovative connected water meters.

It is an EU H2020 program-funded project on Information and Communication Technologies (ICT), as part of the ICT-34-2016 Call for Tenders on pre-commercial public procurement.

The project aims to promote the development of a new network of connected, efficient, interoperable water meters based on open standards.

Accurate data from these connected water meters should help reduce operating costs, identify performance problems, improve both customer service and investment prioritization by contributing to infrastructure sustainability.

The expected benefits of the "Smart-Met" project are:

- Better leak / water loss detection and the ability to take immediate measures;
- Better management of networks and water balance as well as the reduction of operating costs;
- More efficient management of the billing process;
- More efficient water use through increased awareness of the water users' behavior;
- More lasting and easily recyclable meters.

Seven European public water utilities are participating through pre-commercial public procurement and monitoring the tests on new meters installed as part of this procurement.

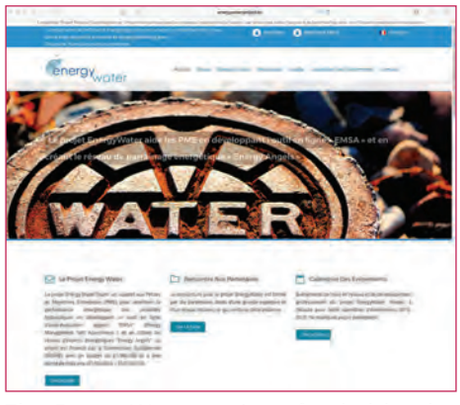
They are supported by 6 specialized organizations that help evaluate technologies, implement new procurement procedures and disseminate the project results to other providers of public services or technology solutions.

The project duration is 48 months. It started in January 2017.

The 7 public water utilities involved in these innovative procurements are: VIVERACQUA (Veneto Region), PROMEDIO (Badajoz), "Eau de Paris", SDEA - Alsace-Moselle Water and Sanitation Syndicate, CILE (Inter-municipal Water Company of Liege), HYDROBRU (Brussels), Budapest Waterworks. ✔

"EnergyWater" Project

The first "Energy Angels" were trained!



The EnergyWater project, funded by the European Union under the H2020 program, primarily aims at helping European manufacturing companies reduce their energy consumption related to process water.

The project began in February 2016 and will end in March 2019. **IOWater's** mission is to establish and develop the European network of Energy Angels, experts in energy optimization, who can intervene in the context of a sustainable economic activity.

The aim of the consortium of partners, themselves experts in energy saving, is twofold: first, develop a free and accessible online tool, the Energy Management Self-Assessment (EMSA) web-tool, to enable any European company to self-evaluate its energy efficiency and, on the other hand, to create a network of energy efficiency experts, the Energy Angels Network, to advise and help these same companies to reduce their energy consumption.

The tool, developed throughout 2017, is now operating and accessible online.

It will be tested by 100 pilot companies in the first quarter of 2018.

It will then be available online to any European company, anonymously and securely.

In order to recruit the first Energy Angels, 6 training sessions were held across Europe between October and December 2017 in France, Spain, England, Belgium, Italy, Poland and Cyprus.

Approximately 150 participants were trained on the operation and interpretation of the EMSA tool results and on the network membership rules.

They were invited to join the Energy Angels network at the end of this training.

The first Energy Angels to join the network were the 11 partners of the European project, then the Energy Angels from the 6 training sessions.

Figure: EMSA Web Tool, the home page of the website. ✔

EUROPE

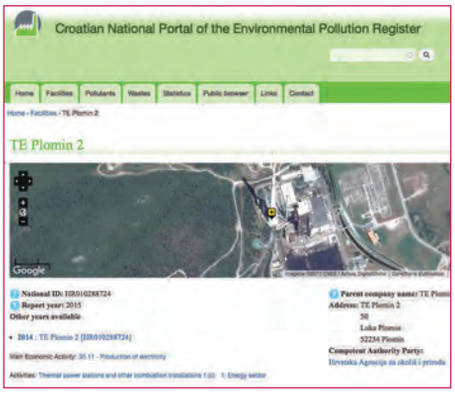
Croatia

European Twinning Agreement on industrial emissions

European legislation requires each Member State to carry out an inventory and send once a year to the European Commission data on pollutant emission into water and air, and the quantities of waste produced by the main industrialists of the country (inventory named E-PRTR).

As part of a European twinning agreement, led by Austria in partnership with France and Germany, to the benefit of the Croatian Environment Agency (CEA), **IOWater** has developed an interactive platform, which allows access to synthetic graphs on the country scale, to one sheet per industrial site, and has several consultation entries: per pollutant, per site, per category of waste, through a location map... The platform for the provision of data is available in four languages.

Training for its handling was provided to the Croatian Authorities.



This development was particularly appreciated: it provided a robust and user-friendly tool, and allows managers to focus on the content: analysis of evolutions, creation of pages using graphs, maps and tables for example.

The platform combines database, mapping and website management, giving access to the official Croatian data also transmitted to the European Commission. It can be progressively enriched with new data or new features.

✔

Financial and Operational Performance Improvement Program (FOPIP)

After 24 months of implementation by the **BRL-IOWater** consortium, this support / advisory mission to Medjimurske vode doo (MV), the regional water and sanitation company in the County of Medjimurje (138 employees), was completed in February 2017.

The EBRD-funded project supported the company's progress on a number of themes (11 strategic actions defined jointly with the Management), including:

- Definition of a new organizational chart of the Company to optimize operation, enable internal communication and facilitate decision-making;
- Development of a tool to define and update a 5-year business plan;
- Development of a price simulation tool with a proposal of scenarios for pricing evolution;
- Drafting of technical specifications for the establishment of a call center, registration of complaints and definition of a new invoice model;
- Proposals to improve the efficiency of the investment management department.

Some actions and recommendations were initiated during the project life and others will be implemented in the near future. The company is currently one of the most successful in Croatia.

✔

Belgium - Wallonia

Development of training activities!

The Walloon region has about 80 inter-municipal authorities with responsibilities in electricity, waste, water, etc.

Some of these inter-municipalities are already among **IOWater's** clients, such as IGRETEC (Charleroi), SBGE (Brussels), IDEA (Mons)...

In 2016, an on-site prospecting mission at the main inter-municipal authorities highlighted needs on the following themes: stormwater, wastewater treatment, sewage sludge treatment, hygiene and safety in wastewater treatment plants, intervention in confined spaces.

A meeting with the Inter-municipality of Walloon Brabant (IBW) especially allowed IOWater to offer a structured on-site training in two modules for the operators of wastewater treatment plants on the optimization of activated sludge treatment and on nitrogen and phosphorus treatments, including teaching time in a classroom but also on-site for eight participants with various profiles.


Chastre WWTP, operated by IBW

IOWater carried out these same two modules in 2017 for staff from other inter-municipal organizations such as IPALLE (Tournai), INASEP (Namur), IGRETEC.

All these training activities were taken in charge by the Public Water Management Company (SPGE).

And tomorrow?....

INASEP decided to reproduce the first module for its electromechanical teams in January 2018 in Namur.

✔

SANDRE

AGENCE FRANÇAISE POUR LA BIODIVERSITÉ
ÉTABLISSEMENT PUBLIC DE L'ÉTAT

"SANDRE" Technical Secretariat

French National Service for Water Data and Common Reference Frames Management

Establishing a common language

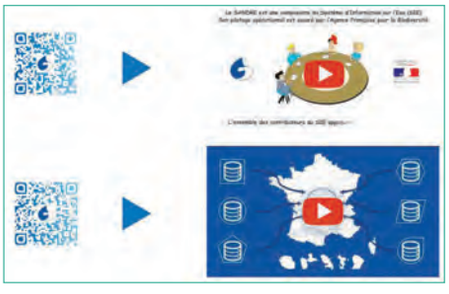
The French regulatory framework

In the water sector, which is quickly changing, particularly as a result of climate change, being able to acquire, analyze and disseminate data from various origins is becoming a major strategic challenge.

"SANDRE's" first concern - since its creation in 1992 - has been to define a common language and a framework for water data exchange as a fundamental element of knowledge. Since then, French and European legal texts have forced administrations to make their data accessible and reusable. Today, however, there are still obstacles to overcome, such as the costs of disseminating data, the sensitive nature of the fundamental interests of the nation, of privacy, etc. In addition to this, the technical constraints solved by **"SANDRE" allow water stakeholders to disseminate water data while making them usable and comparable.**

This is how its contributors massively feed the French Water Information System (WIS) under Decree N° 2009-1543 of 11 December 2009; they thus enrich the common heritage on "SANDRE" basis.

In order to better communicate on SANDRE, two videos were made: In 2017, "SANDRE" gave access to more than 17,332 metadata and more than 71,175 object identifiers



(SANDRE codes for lakes, rivers, water bodies, monitoring sites, parameters measured in water, taxon names, etc.) that can be used freely.

"SANDRE" contributes to the improvement of data: more than 20,000 file compliances and 30,000 actions were made in this direction.

The "SANDRE" website welcomes more than 800,000 visitors a year.

IOWater has carried out the "SANDRE" Technical Secretariat since it establishment in 1992 and still does it today with the support of the French Agency for Biodiversity (AFB).

Adapting to the stakeholders' needs

The "SANDRE" Atlas Catalogue has been enriched by IOWater with new cartographic layer management functionalities in mainland France and overseas territories. Its interface is now usable with tablets, smartphones, etc. In particular, it is possible to directly annotate the maps.

Geographic data now include the "SANDRE" quality control system. The results of the checks are published in the Atlas Catalogue. In the continuity, the descriptive sheets of each geographical datum include a 5-stars evaluation system allowing the user to give his opinion. These "SANDRE" data are used in data exchanges between water stakeholders; more than 30,000 exchange files are tested each year via the "SANDRE" online services.

Today, almost all smartphones and tablets are equipped with GPS.

The IOWater cartographic application, made available to the "SANDRE", allows with this geolocation searching in real time and visualizing all the "SANDRE" geographical objects within a radius of 5 km.

Field technicians can therefore enhance reality with their smartphone or tablet to locate visible objects, such as a dam, or unapparent as a regulatory zoning.

Extension to other fields

As "SANDRE" **Technical Secretariat, IOWater** especially intervene for:

➥ INSPIRE

Under the European INSPIRE Directive, IOWater is a contributing member to the writing of specifications on the interchange of water data.

The INSPIRE Directive is a European Directive aimed at facilitating the dissemination, availability, use and re-use of geographic information in Europe. It is directly linked to "SANDRE", which itself guarantees the interoperability of water-related information systems at the French level. In this context, IOWater integrated the INSPIRE themes in the search for geographical data in the "SANDRE" Atlas Catalogue.

.../...

EUROPE – FRANCE

"SANDRE" Technical Secretariat

French National Service for Water Data and Common Reference Frames Management

.../...

➥ "SINP" & "SIMM"

As part of the construction of a Marine Environment Information System (SIMM) and the development of the Nature and Landscape Information System (SINP), IOWater has matched 21,297 taxon names in the "SINP TAXREF" repository with the SANDRE reference system of the Water Information System (WIS). In addition, "SANDRE" has been working on the modeling of data on marine waste.

➥ Interoperability

IOWater has catalogued new "SANDRE" Uniform Resource Identifiers (URIs) made visible for the Water Information System (WIS). Web users and machines (computers, connected objects and voice assistants) can easily use the data of each "SANDRE" geographic object, such as data of the Maupas dam.

Meeting national needs

IOWater, as "SANDRE" Technical Secretariat, contributes to the national projects developed by the partners of the Water Information System (WIS):

➥ Group of parameters

IOWater, in collaboration with Aquaref and the French Research Institute for the Exploitation of the Sea (IFREMER), is disseminating the "SANDRE" parameter group repository. It is a classification of nearly 350 chemical parameters referenced in regulatory texts. This repository can already be used in all Web applications.

➥ Flood forecasting and hydrometry

SCHAPI, the Central Hydrometeorology and Flood Forecasting Support Service, provides data on stations and hydrometric sites. IOWater has updated the hydrometric repository on the "SANDRE" website and modeled the hydrometric observation and forecast data. Similarly, the theme "High waters and Floods" was dealt with by IOWater.

➥ Urban sanitation

The technical note of 12 August 2016 "on the search for micropollutants in raw water and treated wastewater from wastewater treatment plants and their reduction", written by the Ministry of the Environment, is part of a national and European program to reduce the pollution of aquatic environments by certain dangerous substances.

In order to implement it, IOWater made the self-monitoring data exchange scenario of "SANDRE" urban wastewater collection and treatment systems.

➥ Obstacles to flow

An obstacle to flow is a work that causes a change in the flow of surface water in thalwegs, river low-water beds and floodplains, and areas of marine submersion.

IOWater has modeled data relating to obstacles to flow. IOWater disseminates obstacles to flow that have been controlled according to "SANDRE" specifications.

➥ Drinking water supply

The Departmental Syndicate for the Aube Waters (SDDEA) is a Mixed Syndicate with personalized management. The "SDDEA" gathers more than 450 municipalities and covers the following five responsibilities: drinking water, community sanitation, on-site sanitation, aquatic environments and mosquito control.

In 2017, the "SDDEA" developed its own drinking water information system according to IOWater technical specifications. The objective of this action was to make this information system conform to the specifications of the "SANDRE" Drinking Water Supply (DWS) Data Dictionary, to the Geostandard Drinking Water Supply and Sanitation Networks (RAEPA) of COVADIS, as well as to the AFB's Heritage Guide for Drinking Water Supply Systems.

Standardization of water data was at the core of IOWater's work. The next step is certainly the opening of data on the Web (Open Data).

www.sandre.eaufrance.fr/node?lang=en

✔

ISO 9001 certification audit

IOWater has obtained the renewal by the AFAQ of its 2017 certification for the ISO 9001: 2015 standard for the activities of the **"SANDRE" Technical Secretariat.** ✔

Information: Fax: +33 5 55 11 47 48 - E-mail: nwic@iowater.org

www.iowater.org

A new website for IOWater's 25th anniversary!

A new graphic charter, a new structure and new functionalities: IOWater has redesigned its website on the occasion of its 25th anniversary!

IOWater's activities are highlighted: professional training, technical and institutional support, documentation and publication, information systems, and facilitation of stakeholders' networks.

They help develop skills for better water management in France, in Europe and at the international level.

The search engine facilitates access to all resources: news, articles, documentary records, training, etc. The addition of interactive maps on the pages enables a geographic search of IOWater's international projects. Users can also select the contents corresponding to a specific theme related to water: drinking water and sanitation, agriculture, aquatic environments, climate change, etc.

The new website is also adaptative, its **responsive design** offers visitors a comfortable navigation, whether on smartphone, tablet or computer.

www.iowater.org ✔

When the glossary on water rhymes with "knowledge" and "linked data"

Since 2010, IOWater has been feeding a collaborative knowledge base on the "water and aquatic environments" concepts, with the support of the AFB.

The "Glossary on Water and Aquatic Environments" includes more than 1,600 terms available in French, English and Spanish.

The glossary base is regularly enriched with new concepts, especially from syntheses published by IOWater or co-produced with the AFB.

What evolutions?

- **First novelty,** the glossary will enrich its themes and expand them to all topics related to biodiversity.
- **Second novelty,** adapted reading levels have been added for each term: a level understandable by the general public (common meaning), another for technicians, engineers or researchers (technical meaning) and a last one related to legal aspects (regulatory meaning).

The glossary also complies with the "linked data" principles, which aim to promote **the publication of structured data on the Web,** using semantic technologies.

This allows linking the terms of the glossary with each other or with concepts from other dictionaries.

This also enables interoperability with existing vocabularies of external semantic bases, including those of DBpedia (Wikipedia) or the GEMET thesaurus of the European Environment Agency.

www.glossaire.eaufrance.fr ✔

EAUDOC What's new ?

"Waterdoc/Eaudoc" is an **international portal for water-related documentation.**

It provides simplified access to a heritage fund initiated in 1970, to IOWater publications and open archives related to water and biodiversity.

Since 2017, it has been an integral part of the new IOWater site.

The documentary database has more than 282,000 references and "full text" documents, around 169,000 of them being written in English.

Faced with the new challenges generated by research and technological innovations, the Eaudoc team also offers services that meet the Web users' needs:

- Solutions for watch and search for information;
- Access to a collection of regulatory texts;
- Realization of customized documentary files;
- Drafting of summaries on current topics (ecological engineering, non-point source pollution, agriculture, aquatic environments, etc.);
- Customized and targeted searches;
- Bibliometric analyzes.

www.oieau.fr/eaudoc ✔

www.iowater.org

The water world on the Web

Ecological engineering: international experience feedback

Green roof naturally evolving - 2014
© IOWater

Ecological engineering is distinguished from other forms of engineering by the implementation of solutions based on the functioning of ecosystems and on ecology principles. Sometimes summarized by "Nature-Based Solutions", this concept is increasingly present in the thinking about the protection and restoration of natural environments.

By promoting multifunctionality, projects that use ecological engineering also enable better cost control. This requires the use of experts from different fields to ensure the implementation, sizing and sustainability of projects. It is also important to gather and structure existing knowledge in order to allow operators to benefit from the achievements of projects already completed.

For this purpose, the French Agency for Biodiversity (AFB) set up a resource center on ecological engineering presenting examples of French achievements.

To complete this system, **IOWater collected and enhanced feedbacks from experiments on the implementation of ecological engineering at international level.**

These case studies fed the French platform, but also the European platform on ecological engineering applied to water, which IOWater is responsible for.

www.nwrm.eu ✔

Invasive Alien Species

The experiences of European countries to detect them

Invasive Alien Species (IAS) are considered to be one of the main causes of the loss of biodiversity in the world. The 2014 European regulation on the prevention and management of the introduction and propagation of invasive alien species aims to address this issue.

In this context, IOWater, in collaboration with the AFB, carried out a study on the monitoring and routes of IAS introduction and propagation. This study presents bibliographic elements, examples of practices in various European countries as well as recommendations for the implementation of the European regulation in France.

www.oieau.fr/documentation ✔

Protection of water intakes: Feedback from European experiences

The control of non-point source pollution and the protection of drinking water intakes is a common problem in the different European countries.

For this purpose, the European stakeholders have carried out various activities to control pollution, mainly that related to pesticides and nitrates.

To improve this control, access to feedback can allow:

- discovering innovative protection approaches;
- sharing techniques for the protection of water intakes between European stakeholders;
- promoting the establishment of a network of European stakeholders on the protection of water intakes.

For this purpose, the International Office for Water launched in 2017 a collection of feedbacks in various European countries.

In 2018, these feedbacks will be analyzed and compared before their dissemination to enable the appropriation of their content.

Find these feedbacks on:

www.aires-captages.fr ✔

Comparative Summary

Indicators of European countries to assess water status

IOWater carried out, with AFB financial support, a study aimed at identifying the indicators used by the Member States for the Assessment of Water Status as part of their report on the implementation of the Water Framework Directive.

The information was collected directly from the professionals in charge of this assessment during interviews and exchanges. It led to the drafting of comparative summaries.

For physicochemical quality elements, the analysis aimed to compare the limits used by the 9 selected countries (France, Luxembourg, Belgium (Flanders), the Netherlands, Italy, Austria, Germany, Spain and the United Kingdom).

Regarding the biological quality elements, comparison was done on the main measured criteria. It has shown significant differences in the methods used, mainly related to the characteristics of the measurement stations (adaptations according to the hydromorphological characteristics of each country).

On the other hand, although the methods are sometimes quite distinct, the intercalibration work carried out in the Member States allows obtaining an identical result whatever the method used.

www.oieau.fr/documentation ✔

The 2018 Training Catalogues

Practical work on hydraulics

Biodiversity is a concept whose stakes have become a reality and this is sometimes difficult to apprehend by many stakeholders in the water, sanitation, waste and, more generally, the environment fields.

This is why **the International Office for Water** has for several years integrated the principles and issues associated with the notion of biodiversity in its training modules, through themes as diverse as water treatment and transport, metrology and monitoring of the quality of water and aquatic environments.

In 2018, IOWater is continuing these thematic evolutions initiated in previous years and expanded its offer to 17 new training courses on the following topics:

- **Regulation and management of services:** Procurement contracts, assistance to project management - Service management in the water, waste and environmental treatment sector - Management of local and remote field teams, level 2: improvement - Human Resources Management in the field of water and waste treatment and the environment;
- **People's safety:** Authorization to intervene near networks for experienced people: operator, designer, supervisor: Examination;
- **Metrology and analyses:** NF T90-210: validation of a physicochemical analysis method - NF EN ISO / IEC 17025: understanding and implementation of the technical standard requirements - NF EN ISO 5667-14: job skills recommended for the sampling team, metrological management of sensors;
- **Treatment of sludge and odors:** Exploitation of sludge dewatering systems with filter- press;
- Maintenance, energy, automation and remote management: Reading and implementation of electrical diagrams applied to water treatment facilities - Maintenance of sensors in automated water plants - Implementation of instrumentation equipment in a sewerage system;
- **Rivers and bodies of water:** Watercourses: diversity of statutes, rights and obligations - Uses of water and aquatic environments;
- **Water in industry:** industrial activated sludge treatment plant - level 3: malfunctions.

The full range of training courses offered by the IOWater's National Water Training Center (NWTC) is presented in its specialized catalogues:

- **"Water Professions";**
- **"Waste – Environment";**
- **"Water - Irrigation and Agriculture" ;**
- **"Water in industry";**
- **"Water and Biodiversity";**
- **"Water Jobs":** English version of the training offer.

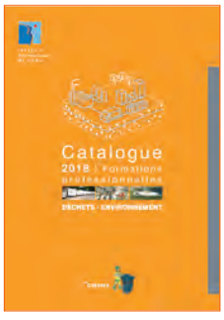
In 2017, more than 6,000 professionals benefited from training provided by IOWater, either in its outstanding facilities in Limoges and La Souterraine, or directly on the installations of its customers in France, in Europe and all over the World. Coming either from public services or from the private sector, these field workers, technicians, engineers, department heads, elected officials… acquired from the IOWater trainers the know-how, skills and methods needed to master and adapt themselves to the evolution of their positions or functions on a daily basis.

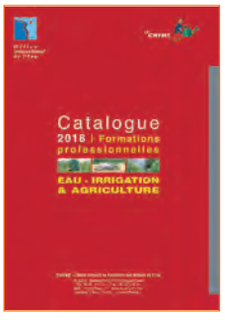
The teaching methods developed within **IOWater** combine judiciously theoretical courses, case studies, practical work, demonstrations, and today integrate the technological and pedagogical evolutions in the field of gamification (learning by role-playing and games), virtualization (3D animations, video demonstrations, forums...) and individualization (self-training, self-evaluation, training program, etc.).

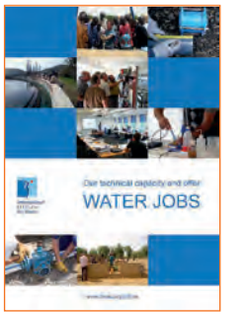
To support the evolution of vocational training, IOWater has developed qualifying training courses and "professional" curricula, and is in the process of certifying some of its modules. IOWater is also developing the "Water Development and Engineering" Master (DEVINE), designed and realized in collaboration with the University of Sciences of Limoges.

IOWater is certified ISO 9001, Version 2015. ✔

Upon request, all these IOWater training courses may be carried out in English for groups of trainees.







Digitized training:

IOWater continues to develop its digitized training courses

The International Office for Water continues its "e-learning" development.
It continues its investment by proposing new training formats to go beyond the traditional face-to-face training with:

- Blended-learning courses where face-to-face training is supplemented by distance learning;
- 100% digitized training accessible online. Several 100% digitized training courses were completed in 2017.

Firstly, in order to allow the operators of drinking water supply systems who cannot attend the various sessions of "good practices for quality water" face-to-face training, the Adour-Garonne Water Agency asked IOWater to digitize this training.

Digitized Training on the Renewable Energy Strategy

10 modules including animations, videos, quizzes and pdf documents, for a total of about 2 hours of distance learning, were produced and put online.
Then, as part of the Brazil-Hydrus project, **IOWater** produced 2 training courses respectively devoted to "efficiency of the drinking water supply systems" and "strategy for the use of renewable energies". Again, these interactive training courses, made of several animated modules, videos and quizzes, represent nearly a day of training available online in French and Portuguese.
Finally, as part of the "EcoCuencas" project dedicated to adaptation to climate change in Latin America, an online training course, open to all and entitled "Water and Climate Change - Governance, Planning and Economic Instruments for Integrated River Basin Management", was conducted in French, Portuguese, Spanish and Italian, representing nearly a full day of training to take from his workstation. ✔

"Innovative City"

The international "Innovative City" fair, which took place on 5 and 6 July 2017 in Nice, gathered over 3,000 participants around innovation in the smart city.
Water plays an important role, of course, whether it is drinking water, wastewater or rainwater. With its actions related to skills development for better water management in France, Europe and over the World, the International Office for Water organized a session dedicated to innovation in the city on the topic of **"Smart Water"**, or how to provide urban infrastructure with an advanced capacity for collecting and processing data in order to allow urban systems to self-regulate and anticipate dysfunctions.
This session dealt with two seemingly opposite topics: **"Smart Metering",** and more generally, all the technological innovations that serve good water management, and the **"Nature Based Solutions"** that choose a treatment approach using natural means of optimization such as Natural Water Retention Measures (NWRM).
These two aspects are in fact complementary because they contribute to achieving the same objective of global water management on a local scale.
The platform for exchanges on the Mediterranean Sustainable City was then presented. Its goal: to promote the exchange of experience using multimedia means and the emergence of joint projects between sustainable Mediterranean cities.
A round table facilitated by Mr. Eric Tardieu, IOWater Director General,


Round Table facilitated by Mr. Eric Tardieu

brought additional experience feedbacks proposed by prestigious speakers such as Messrs. Jacques Ganoulis (Secretary of State for Water, Greece), Ms. Sophie Altmeyer (Technical Manager of Hydreos Center), Benoit Le Fahler (Operation Division, "Régie Eau d'Azur"), Pierre Brunet (Vice President of Veolia Smart Solution), Dr. Aziz Zenasni (Luxembourg Institute of Science and Technology), Omar El Fassi El Fihri (Second Vice-President of the Municipal Council of the City of Fes (Morocco). ✔

ICRC and IOWater

A consolidated partnership in 2017

CICR

As part of the development policy for its "Wathab Water and Habitat" delegates in the field of water, the ICRC had ordered, for 2017, a new training session at **IOWater**. For more than a decade, these courses have been held at the rate of one per year, and for a period of two consecutive weeks. Due to the changing nature of ICRC-implemented projects, sanitation skills are increasingly necessary, which led IOWater to divide training in two versions: one on "water supply" and the other on "sanitation". It is planned to alternate these two themes each year. In addition, training has been provided in English for three years, with the opening of ICRC delegate positions to multiple nationalities, which involved the use of this language as a working language.
In February 2017, the ICRC's "Wathab" service called upon IOWater's capabilities to carry out a technical support mission to Panama: the purpose of this assignment was to define, on-site, the various options for the wastewater treatment plants of La Joya and La Joyita prisons.
Indeed, the health, environmental and sociological challenges justifying the liquid waste treatment in these prisons are important and it was urgent to improve the conditions for their wastewater treatment and discharge.
This assignment allowed defining 3 potential sanitation scenarios: decentralized, intermediate or centralized scenario associating technologies of effluent treatment with activated sludge or trickling filter (as appropriate technology with lower operating cost).
The potential locations of these wastewater treatment plants were also defined. In July 2017, **IOWater** trained REGIDESO staff on the "maintenance of pumping stations" as part of ICRC missions to Goma in the Democratic Republic of Congo. ✔


Training course in Bangui

Schneider Electric and IOWater

Exploration of new analytical methods applied to pumping

How to estimate the wear of a pump, or to detect cavitation using a frequency converter? This is the type of challenge that Schneider Electric wants to take up today, in order to better adapt the coupling of electric motors to pumps.

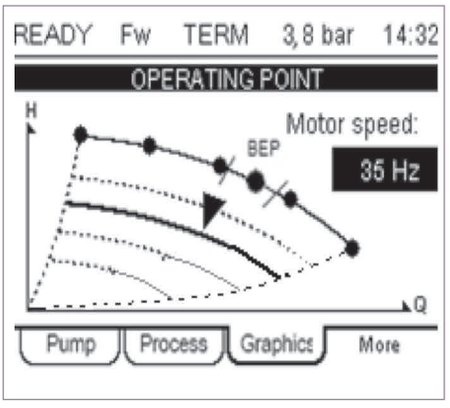
Schneider Electric has developed a range of Altivar Process speed variators dedicated to the water market. To enrich this offer, R&D is developing advanced services and functions for pumps.

As part of this development, Schneider Electric's R&D services called on the International Office for Water to help them.

A week of technical exchanges was organized in February 2017 at the IOWater's National Training Center in Limoges.

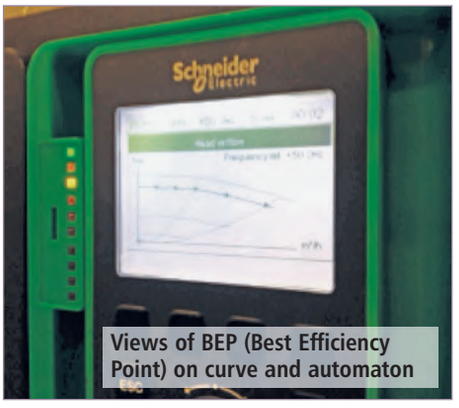
The first part of the week consisted of a training of 8 Schneider Electric employees, including three technical experts.

A day was dedicated to future collaboration, during which Schneider Electric technical topics were reformulated to set up a study partnership.



Schneider Electric then commissioned IOWater to provide a summary report on the impact of pump malfunctions and wear on mechanical parameters and measurable electrical signals at the input of the drive motor.

This study, carried out during the summer of 2017, allowed highlighting innovative detection techniques. The idea then being to validate the feasibility of these methods, it was decided to carry out several series of tests on the pumping loops of the Limoges Water Training Center.



Views of BEP (Best Efficiency Point) on curve and automaton

At the same time, IOWater's pumping structures were revised to allow the simulation of pumping faults (cavitation in particular), all associated with a digital acquisition and processing system.

An Altivar Process variator and its protection devices were supplied by Schneider Electric to control the pumping loop.

All the tests carried out should eventually allow the development of new methods for detecting wear and cavitation on pumping systems.

✔

"Naphtachimie"

IOWater's intervention on Lavéra petrochemical platform

On request from the "Naphtachimie Company", last April, IOWater carried out an analysis of the operation of the treatment plant for the effluents of the various companies of the Lavéra petrochemical platform.

This plant is articulated around a complete and complex system of physical treatments (API clarifiers), physico-chemical (dissolved-air coagulation-flocculation-flotation), followed by a particular and rare biological treatment by UNOX process (aeration with pure oxygen through surface turbines in closed aeration tanks).

The methodology used in this analysis focused on a preliminary study of the plant's monitoring files and continued with an on-site intervention.

The main problem of this plant was the loss of settleability of biological sludge in the clarifiers.

Although the analysis initially focused on biological treatment, we broadened the investigations to the whole treatment process: thus, the preliminary study of the monitoring data revealed a limited effectiveness of the physicochemical treatment.

A number of recommendations were made to improve the operation and reliability of this treatment so that it no longer impacts the downstream biological treatment step.

Concerning biological treatment, following the investigations carried out on the monitoring files, the on-site visit allowed, on the one hand, confirming some hypotheses and, on the other, highlighting a series of anomalies related to the design of the plant and improvable operation practices.

The report submitted at the end of this analysis identified all the points requiring improvement.

It prioritized them and proposed the modifications needed for optimal operation of the entire plant.

✔

Electricity of Mayotte

Coupling Training and Analysis

Thermal power plants use water to supply the various circuits needed for their operation. They also produce effluents loaded with oil, residual chemicals and suspended solids.

Training for the operation of waste treatment facilities must be tailored to meet the technical and regulatory requirements of this activity.

The work focusing directly on the industrialist's treatment facilities as well as on providing written recommendations, has transformed customized training into Diagnosis / Training.

This coupling was realized for two sessions organized by IOWater at **Electricity of Mayotte (EDM)** with feedback of great satisfaction. On-the-job adjustments during practical work resulted in significant improvements between before and after training.

Views of EDM facilities

A first training session, conducted in February 2017, was dedicated to industrial clean water at both EDM plants.

The second session, in September 2017, dealt with the treatment of oily effluents at both plants with the following objectives:

- To know the principles of treatment plant operation;
- To control the Serep and Senitec treatment systems;
- To improve or correct parameters which are sensitive for the environment;
- To remove some polluting parameters from water before discharge.

For each training session, the diagnosis/training allowed modifying adjustments and technically and economically optimizing the processes through optimized reagent management and reduction of the loads at the source.

The second session was an opportunity to create a follow-up table to ensure traceability and initiate a project for changing the supervision of the automaton.

✔

The story is continuing in Reunion with Tereos Indian Ocean

Started in 2009, during a training course organized by the Reunion Association for Industrial Development for a group of Reunion industrialists, the collaboration between **IOWater** and the Tereos Group was extended in 2013 with intra-company training courses in both facilities of the island and with an expertise of the extension project for the GoI wastewater treatment plant.

It continued in 2015 with training in factories and an audit of analytical practices in monitoring the wastewater treatment plant.

Our common history was extended in 2017 with support to the teams operating the plant of both facilities during the sugar beet harvest.

This support consisted in reminding some theoretical concepts when necessary, but most often it was to follow the teams in their daily operation tasks over a 5-day period at the GoI factory and 3.5 days at the Bois Rouge one.

All the steps of the water (physicochemical and biological treatments) and sludge processes included checking the operating conditions and, if applicable, the realization of tests, specific analyses allowing a step-by-step optimization of the overall operation of the wastewater treatment plants.

This follow-up enabled to validate some practices, to correct others and to carry out additional operating tests that will allow easier and faster assessment in case of difficulties.

✔

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Lebanon

The training center project is starting!

From 18 to 21 June 2017, **IOWater** contributed to the request of the Directorate General of the Ministry of Water and Energy, to evaluate the water training center project in Beirut.

This project led by the Director General, Dr. Fadi Comair, is subcontracted to the architect firm Dar Al Handasah Nazih Taleb & Partners.

A field study, chosen and owned by the Ministry, validated some working assumptions. The study of the preliminary design and a meeting of all the stakeholders in the Ministry allowed outlining the future training building, the educational units, determining the technical needs, the surfaces, the training rooms, the common means, etc.

The next step is the presentation of a detailed project encompassing exterior and interior architectures, the choice of outdoor amenities and the reservation of locations for educational units.

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The site of the future water training center in Beirut.

6th Beirut Water Week

Mr. Pierre Roussel honored at Beirut Water Week

The Ministry of Energy and Water of Lebanon and the Mediterranean Network of Basin Organizations (MENBO) organized, from 27 to 29 March 2017, the 6th Water Week of Beirut, on the topic: **"Post COP22: What possible governance for the Water-Energy-Food nexus?"**

Exchanges dealt with climate change and the establishment of necessary adaptation policies.

Financing, account taking of geopolitical conflicts and hydrodiplomacy for the management of transboundary basins, securing hydraulic infrastructure, technologies and information systems were the topics that fed discussions.

Speaking at the round table on climate change adaptation policies, **Mr. Pierre Roussel, President of the International Office for Water,** focused his presentation on "Water Resources Governance and Climate Change".

He reminded the importance of jointly considering the limitation of CO2 releases and the adaptation to change. He emphasized the importance of addressing governance issues on all scales (local, basin, country and world-wide).

He reviewed the means for action, which are, globally, the same at all geographical levels:

- Dialogue and cooperation to avoid conflicts,
- Observation, measurement to know the resources in quantity and quality,
- Planning via water management schemes,
- Sharing information and experiences,
- Promoting basin management,
- Training the stakeholders,

These actions have been promoted by INBO and its networks for more than 20 years.

✔

Algeria

Waste management and circular economy

Interview with the ECOSET team after a visit to SETIF's landfill and sorting center

In Algeria, the waste management strategy is included in the PROGDEM (Household Waste Management Program), in which significant investments have been made. However, the human, institutional and administrative capacities to implement integrated and job-creating management remain limited and need to be improved.

In this context, many projects have been carried out by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) for many years.

These projects focus on capacity building to implement integrated approaches to waste management and support local authorities in the process, through relevant national institutions.

As part of a project entitled "Waste Management and Circular Economy", carried out in three municipalities, GIZ entrusted **IOWater** with the task of helping in the development of a capacity building strategy by analyzing the partners' needs.

This support was carried out in a participatory way, focusing on 3 levels: "society", "organization", "individual", so as to propose a global strategy taking into account the constraints related to the general context, the organizational and operating conditions of the partners and the conditions of exercise and the skills of the field stakeholders involved.

The project partners were successively met, including the National Waste Agency, the EPIC ECOSET, the Mayor of El Eulma Municipality and the National Environmental Training Center.

Each interview aimed to identify the strengths, weaknesses, opportunities and threats for each organization.

These interviews helped to highlight the stakeholders' motivation. Potential improvements in proximity management were underlined. It is necessary to upgrade the managers' abilities as well as those of the field stakeholders.

✔

A new partnership between IOWater and Chiali Services

Based in Algeria, Chiali Services Spa, a 100% subsidiary of the Chiali Group, has been active for several years in the field of engineering and in the implementation of projects on public works, hydraulics, irrigation and environment.

The trainees group of Chiali Services

In order to further develop the skills of its personnel in the water and sanitation sectors, **Chiali Services has called on IOWater to train some of its teams on the design and sizing of activated sludge treatment plants in Sidi Bel Abbès in 2017.**

This first session should be followed by a future training course on the hydraulics of drinking water supply systems and on the handling of hydraulic equipment used in DWS as part of a long-term and sustainable partnership between IOWater and the Chiali Group, through the "Chiali Academy", its subsidiary unit in charge of the training activity.

✔

Information: Fax: +33 4 93 65 44 02 - E-mail: cooperation@iowater.org

Morocco

Success of the European Twinning Project


The Sebou Valley

For 2 years, between 2015 and 2017, the twinning project on "Governance and Integrated Management of Water Resources in Morocco", funded by the European Commission, has been able to instill a real dynamic in the implementation of the new Water Law adopted in August 2016.

Real collaborative work was carried out by the European team led by France, accompanied by Spain and Romania, and the Moroccan beneficiaries supervised at national level by the Water Research and Planning Department of the State Secretariat in Charge of Water and the Pilot Sebou River Basin Agency (ABH).

IOWater managed this project on behalf of the Ministry of Ecological and Solidarity-based Transition with the support of the French Water Agencies, the BRGM and the main Spanish and Romanian public institutions working on the Water Framework Directive (WFD) in their respective countries.

The outcomes especially include:

❶ A plan with convergence towards the main principles of the European Water Directives, which is divided into 5 groups of priority actions: sovereign responsibility, planning, monitoring, water data management and coordination with donors for financing projects.

❷ An analysis report on legislative and institutional gaps between Morocco and the EU, which served as a guide for finalizing the Water Law 36-15 and the drafting of the implementing decrees.

❸ A proposal for a harmonized structure of the new Basin Management Plans and a methodological guide for updating these plans in Morocco.

❹ A division of the pilot Sebou Basin into water bodies to structure the long-term advances to be achieved in the monitoring of surface and ground water.

❺ An inventory of structured data sources in the form of an online catalogue with transfer of the Geonetwork tool. This work especially served to support the development of a cartographic Atlas of the Sebou Basin.

❻ A prototype control board for monitoring the implementation of the Management Plan and a brochure presenting the new concepts to prepare the Basin Council Members to their new and increased prerogatives.

The project has thus helped to develop in Morocco water resource management practices that meet European standards and which enable to improve efficiency in the implementation of future projects to meet the challenges of sustainable development and adaptation to climate change.

✔

Commission européenne

Turkey

Young "Ambassadors" for the protection of natural resources

A EU-funded technical assistance project was awarded to the group led by WYG Turkey. It aims at raising the awareness of the Turkish society to the protection of the environment and water resources.

Training of trainers, development of educational material, study visits to EU Member States have been implemented. The Western Mediterranean Basin, the Konya Basin and the Eastern Black Sea Basin are the 3 pilot basins of the project.

In this context, **IOWater** coordinated the visit of two delegations of some forty Turkish students who came to meet French water stakeholders in August and September 2017.

The young "Ambassadors" were able to meet people of the European Commission and Parliament, the French Water Agencies (Seine-Normandy and Artois-Picardy), the Interdepartmental Syndicate for the Sanitation of Greater Paris (SIAAP) and **IOWater**.

In addition to the presentation of the general organization of the water management system in France, these meetings were an opportunity to share information and recommendations on projects for youth and on the process of Youth Parliaments for Water in France on several scales.

IOWater's expertise in institutional cooperation, training, networking and information systems was widely presented.


The "Ambassadors" visit at IOWater in Paris

In a general manner, bridges have been established between the French and Turkish water management awareness initiatives and partnership agreements should be created between the institutions concerned.

✔

Tunisia

Water Resources Management for Rural and Agricultural Development (PAPS-Water)


Tunis

The EU-funded Sectoral Policies Support Program for water resources management for rural and agricultural development (PAPS-Water) in Tunisia, has been implemented since October 2014 by the Louis Berger / **IOWater** / SCET / CCM Consulting group of companies. It was completed on 14 September 2017 by the closing workshop organized under the auspices of the Ministry of Agriculture.

The results were widely disseminated to all stakeholders in the Tunisian water sector.

The capacity building component supervised by **IOWater** achieved the following results:

- Definition of a structured training plan for the entire Ministry of Agriculture, Hydraulic Resources and Fisheries;
- Realization of many trainings courses for the various bodies of the Ministry;
- Establishment of a communication strategy and plan for the National Water Supply Company (SONEDE) and the Agricultural Training and Popularization Agency (AVFA).

The capacity building of executives and employees of the Administration has provided them with the necessary knowledge to help in the implementation of the reforms initiated under PAPS-Water.

✔

Towards a circular economy on organic waste


Compost production line in Sfax

The pilot action for the recovery of organic waste initiated in Sfax (Tunisia) as part of the Med-3R project "Euro-Mediterranean Strategic Platform for a Suitable Waste Management" led to very promising results in 2016 in the field of organic waste collection, public-private partnership, sorting of recyclable materials and co-composting.

This project also allowed establishing a partnership between **IOWater,** the EUROMED Cities Network, represented by the **Nice-Riviera Metropolis**, the University and the City of Sfax and EMWIS as coordinator of the pilot actions of the **Med-3R** project.


Sfax

Thanks to the support of the Provence-Alps-Riviera Region and Nice-Riviera Metropolis, the partners are working on the industrialization of the process in order to produce quality compost for land application and improvement of agricultural production. This experience will also be the basis for preparing a larger scale project with a group of Mediterranean partners.

✔

MED3R
Plateforme Euro-méditerranéenne
Recycler - Réduire - Réutiliser

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Palestine

Support to the development of sanitation

Practical phase in Jerich

For several years, the West Bank has experienced strong growth in infrastructure dedicated to sanitation and urban wastewater treatment. With funding from international cooperation, many communities now have modern infrastructure that meets the new regulatory requirements. This is particularly the case in the Municipalities of Ramallah (Al-Tireh), Al-Bireh, Jericho, Nablus, Taybeh. Other projects are in progress. They concern Tubas-Tayasir and the big city of Hebron.

With the support of the Adour Garonne Water Agency, the **International Office for Water** has conducted a skills development program adapted to the new needs of Palestinian staff, as these projects are progressing.

The training courses gathered staffs from municipalities, water syndicates and the Palestinian Water Authority (PWA).

This program, initiated in 2012, allowed studying with local stakeholders the wastewater treatment processes, from their conception to their completion. A complementary program for developing the skills of the operating staff helped to take control of the facilities. The training provided combined phases in Palestine, then in France at the IOWater's Training Center (NWTC) where the operators came to be trained on educational units during courses tailored to suit the local context. The last support phases dealt with the monitoring of construction works and the acceptance of new installations. The Adour Garonne Agency has been able, through the financing of the program, to provide the assistance that was lacking in the context of conventional financing of investment programs.

Practical training in Limoges

In 2017, the Rhone-Mediterranean-Corsica Water Agency, taking over the institutional component of this cooperation with Palestine, and in the continuity of the Adour-Garonne Agency's action, decided to continue this cooperation by giving priority to the reuse of treated wastewater in agriculture and the recovery of sludge, taking into account sanitary and public health aspects.

This cooperation is part of a process of strengthening the links between the West Bank water staffs and developing a real knowledge of the local technical context.

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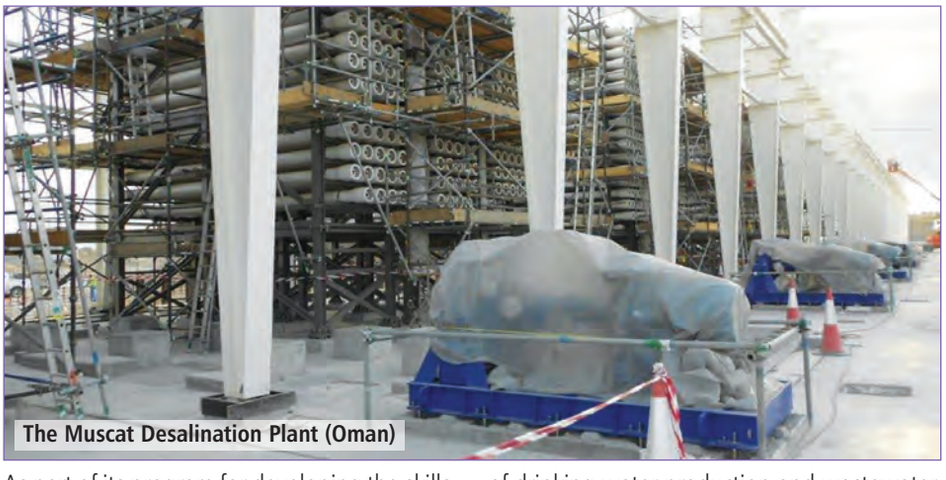
Middle East

Realization of training sessions for Suez



The Muscat Desalination Plant (Oman)

As part of its program for developing the skills of its staff based in Qatar and Oman, Suez entrusted the **IOWater's National Water Training Center (NWTC)** with the realization of three training sessions on the techniques of drinking water production and wastewater treatment in Doha and in Muscat in 2017.

These training sessions follow those previously conducted in Dubai and Jordan.

The desalination issue was particularly addressed in order to adapt the training content to the local context.

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EMWIS

SEMIDE EMWIS

Better management of knowledge on water in the Mediterranean area

Closer to innovation

In 2017, EMWIS continued its actions about innovative solutions to meet the water-related challenges in the Mediterranean, illustrated by the following examples:

- **Climate services for agriculture (VISCA),** combining short, medium and long-term local weather forecasts with phenological models and in-situ data to help farmers better manage their crops by adapting to climate change :

  (www.visca.eu);
- **The Satellite-based Wetland Observation Service (SWOS)** provides valuable maps and indicators for natural park managers and also for water resources management (ecosystem restoration, floods) and for monitoring some Sustainable Development Goals;

  (www.swos-service.eu/),
- **A circular economy approach in sludge management (ANADRY)** in small and medium-sized urban wastewater treatment plants with the production of biogas and biological fertilizers that meet health standards

  (www.life-anadry.eu)

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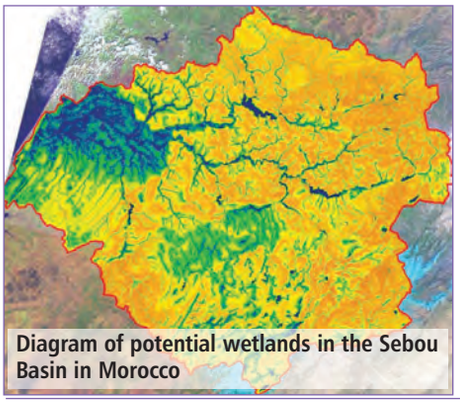

Diagram of potential wetlands in the Sebou Basin in Morocco

Mediterranean Water Knowledge Platform

This project, labeled by the Union for the Mediterranean, led to significant actions in 2017, thanks, in particular, to the support of the French Ministry of Ecological and Solidarity-based Transition. In June 2017, **a technical training on the implementation of National Water Information Systems gathered representatives of 10 Mediterranean countries for three days in Sophia Antipolis,** to deal with the institutional aspects of governance, financing, technical architecture and data use to meet the challenges of Integrated Water Resources Management.

The experience of the Tunisian precursor system, "SINEAU", highlighted good practices and pitfalls to avoid.

In October 2017, with the support of the Secretariat of the Union for the Mediterranean (UfM), **IOWater** and **EMWIS** organized a workshop in Barcelona for the Water Departments of the Member Countries.

This workshop provided an opportunity to discuss good practices and funding arrangements for **National Water Information Systems** and their use for water resources management planning in a climate change context.

In conclusion, this Platform will be able to support the preparation of indicators responding to both national strategies, Sustainable Development Goals and the Water component of the Shared Environmental Information System (SEIS) in the Mediterranean.

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Training workshop on Water Information Systems, Sophia Antipolis, July 2017

Workshop for exchanging experiences, Barcelona, October 2017

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International Office for Water

The International News N° 28 - February 2018

Publication Director: Eric TARDIEU - Managing Editor : Christiane RUNEL
Coordination - Production: Frédéric Ransonnette - IOWater - Paris / Editing -Translation: Gisèle Sine / Photos: IOWater
Printing: GDS Imprimeurs - Limoges - N° ISSN: 1278-186X - N° ISSN Online: 2310-5895

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