INTERNATIONAL NEWS

Capacity building for better water management

management
cooperation
information
training

International
Office
for Water

1992
2017

International Office for Water

25 years for better water management over the world!

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1992 International Office for Water 2017
25 years for better water management over the world!

IOWater is 25 years old... and has trained 100,000 trainees!

Officially established on 13 September 1991, but with an effective start on 1 January 1992, the **International Office for Water** is beginning its 25th year of operation.

The aim of **IOWater** is to develop competences for better water management in France, in Europe and over the World by acting in its three professional fields: institutional support to countries that wish so, training of water professionals and dissemination and sharing of knowledge and data on water and environments.

An operator in skills development for better water management

35,000 copies of the 2017 Catalogue of traditional training courses on "Water" of **the French National Water Training Center (FNWTC)** are distributed in France and worldwide, against 4,000 in 1992, with an offer enriched by two other new specific catalogues on "Waste - Environment" and "Water and Agriculture". **With more than 6,000 students trained in 2016 in 550 sessions, the FNWTC has quadrupled its audience in 25 years ... and, at the beginning of 2017, it exceeded the number of 100,000 trainees.**

IOWater has been able to continuously develop its training offer, closely following the technical and regulatory changes in the field of water, thanks to the know-how of a team that has increased from 25 to 55 employees in 25 years, including 30 full-time trainers, but also thanks to its educational units, unique in France and in Europe.

IOWater is now turning to the digitization of its training courses to get prepared for the future.

Training unit for laying pipes for drinking water supply - FNWTC

25 years of support to the development of training over the world

The **IOWater** know-how in the field of vocational training for water professionals has led to its intervening in many countries, impressed by its concept of training "under real working conditions", **to support the establishment and development of their National Training Centers** in particular, but also for giving advice in Human Resources Management (HRM) of water utilities.

A major participant on the world water scene

IOWater is providing its skills and those of its public and private partners to facilitate the institutional and administrative reforms wished for by Authorities of Foreign Countries, in order to disseminate the tools of the European Water Directives and to improve the management of water resources and aquatic environments in river basins and the adaptation to climate change, as well as the governance of community water utilities, of irrigated areas or the improvement of Water Information Systems.

Since 1994, IOWater has been in charge of the secretariat of the International Network of Basin Organizations (INBO).

For 25 years, **INBO** and **IOWater** have been involved in all the major international events dedicated to water and the environment, including recently:

- Coordination of the European Regional Process of the **6th World Water Forum of 2012 in Marseilles,**
- Coordination of a dozen or so of official thematic or regional sessions of the **7th World Water Forum of 2015 in Korea,**
- At the COP21 in Paris in 2015, INBO launched the **"Paris Pact on water and adaptation to climate change in the basins of rivers, lakes and aquifers",** signed today by 359 Organizations in the whole world,

Signing of cooperation agreements with China - Mexico - CICOS COP21 in Paris - December 2015 © IOWater - C.Runel

- At the **COP22 in Marrakech in 2016, INBO,** as support to the "Paris Pact", was naturally designated as "facilitator" of the events of the Action Day for Water and Climate, organized on past 9 November.

From "Minitel" to smartphone applications

Alongside **its documentary database "WATERDOC", with 282,000 references** of books and specialized articles, **IOWater** has developed, with the support of the National Agency for Water and Aquatic Environments (ONEMA / AFB), **the "Technical Documentation on Water" Portal,** which gives access to more than 75,000 documentary records provided by 21 major water stakeholders in France.

It has also extended its offer of electronic dissemination of current news to water managers thanks to smartphone Apps: "Ma Cons'eau" (my water consumption) to calculate domestic water consumption, "AquaVeille" (Water Watch) to receive the news on current water events in real time, "BaladO-marais" (trip in wetlands), to locate information and facilitation centers on wetlands, ...).

IOWater is a partner of the Ministry of Ecology and ONEMA / AFB in the implementation of the French Water Information System, and is in charge of **the Technical Secretariat of the French National Service for Water Data and Common Reference Frames Management (SANDRE).**

It is also involved in many European research and innovation programs: IWRM-Net, NWRM, Incover, Water Pipp, Energy Water, SIIF-ERU, Smart.Met, WFD Peer-Review Mechanism, ...).

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10th INBO World General Assembly

From 1st to 4th June 2016 in Merida - Mexico

Faced with major global challenges, water management in basins is essential everywhere in the world!

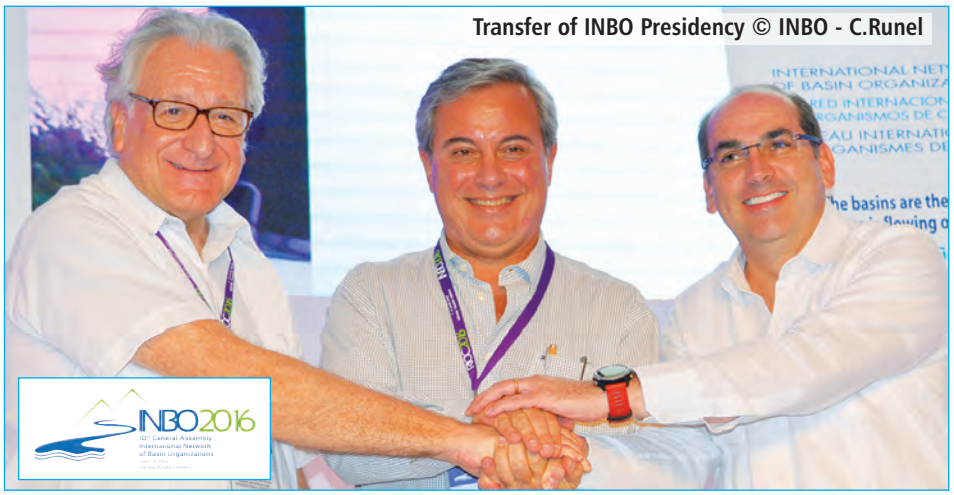
The 10th INBO World General Assembly gathered more than 600 participants from 50 countries, including Mr. Rolando Zapata Bello, Governor of Yucatan, Mr. Abdelaziz Zerouali, representative of Ms. Charafat Afailal, Minister Delegate for Water (Kingdom of Morocco) and President of the COP22, Mr. Diène Faye, Secretary of State for Water (Senegal), Mr. Péter Kovács, Secretary of State for Water (Hungary), Mr. Jacques Ganoulis, Special Secretary of State for Water (Greece), Minister Rafael Pacchiano Alamán, Federal Secretary for Environment and Natural Resources - SEMARNAT (Mexico), Mr. Ibrahim Addulkarim Mansoor Obeidat, Ambassador of Jordan to Mexico, and Mr. Roberto Ramírez de la Parra, Director General of the National Water Commission of Mexico (CONAGUA).

The General Assembly led to the organization of a Forum of International Cooperation Organizations and four thematic roundtables:

- **Adaptation to climate change in basins,**
- **Mandates, composition, role and means of the Basin Councils and Committees,**
- **Sustainable basin management: planning and funding,**
- **Participation of the economic sectors and citizens.**

The topic of the first roundtable has become a priority of the Climate Conferences since the COP21 in Paris. It was addressed several times during the General Assembly, especially with the presentation and signatures of the **"Paris Pact on Water and Adaptation to the Effects of Climate Change in the basins of rivers, lakes and Aquifers",** which has already been signed by 359 organizations over the world.

Mr. Roberto Ramírez de la Parra, Director General of CONAGUA, presented water management in Mexico, the host country of the General Assembly.



Transfer of INBO Presidency © INBO - C.Runel

He particularly stressed the two biggest challenges facing his administration: ensuring adequate water supply to all uses with scarce resources and limiting the hydro-meteorological risks and their impacts in the context of climate change, increased activity of hurricanes in the Caribbean and Pacific regions of the country.

The INBO World Presidency was transferred from Mr. Lupercio Antonio Ziroldo (President 2013-2016) to Mr. Roberto Ramírez de la Parra (President 2016-2019).

The new INBO President is committed to promoting the development of River Basin Organizations and the implementation of a basin integrated management policy in liaison with the High Level Panel on Water.

His action plan sets six objectives for the 2016-2019 period:

1. **Strengthening INBO Regional Networks** to transform them into true resources centers to help professionalize the technical and administrative executives of Basin Organizations and their partners.
2. **Encourage studies on adaptation to climate change in basins** in support to participatory decision-making processes.
3. Ensuring access of developing countries to international resources to reduce gaps in institutional organization and infrastructure equipment, **so that basin management is increasingly effective.**
4. **Building national, regional and international capacities** to progressively implement new water resources and basin management models, including transparency and information management and budgetary resources.
5. **Promoting the modernization and development of hydrological cycle and climate variables measurement systems** and, more broadly, the design and implementation of genuine **Water Information Systems (WIS)** and those on aquatic environments, both at basin level and at national and transboundary level.
6. **Improving performance indicators** on sustainable management of river basins and water user systems, especially within the OECD Water Governance Initiative.

At the end of its work, the General Assembly adopted **"the Merida Declaration",** which calls for integrated water resources management at basin level to be taken into account as a priority in **the Global Climate Action Agenda,** approved at the COP21 in Paris, as well as in the work of **the High Level Panel on Water and Sustainable Development.**

Find the Declaration of Merida, as well as the various documents and photos from the General Assembly on the website:

www.inbo-news.org

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COP22 - Marrakech - Morocco - 9 November 2016

Water in the Global Climate Action Agenda - GCAA

As part of the Global Climate Action Agenda - GCAA (successor of the Lima-Paris Action Agenda - LPAA), the International Network of Basin Organizations (INBO), the Permanent Technical Secretariat of which is taken care of by IOWater, was designated by the two climate champions, the Environment Minister of the Kingdom of Morocco, Ms. Hakima El Haite, and the French Ambassador for the negotiations on climate change, Ms. Laurence Tubiana, as facilitator of the Water Action Day, in partnership with the World Water Council and the Moroccan Ministry Delegate for water.

Two official events were organized on 9 November 2016:

- A **"Water Showcase",** in the morning, dedicated to promoting practical initiatives;
- A **"Water Dialogue",** in the afternoon, built as a high-level debate on major water and climate policy issues.

On this occasion, the **"Blue Book on Water and Climate"** (collection of orientations and recommendations) was launched by the Moroccan Government and its partners as a concrete outcome of its interim International Conference on Water and Climate, hosted in Rabat in July 2016, in cooperation with the French Government, **INBO** and the WWC.

"This aligns perfectly with COP22, which is striving to be a COP for action!" remarked Ms. Charafat AFAILAL, Minister Delegate for Water in Morocco. "Now, we need to realize what is at stake, since water insecurity leads to increased conflicts, tension between populations, and also provokes migrations that threaten overall stability".

Climate justice was also a priority of the Water Action Day, as evidenced by the launching of the **"Water for Africa Initiative",** established by the Kingdom of Morocco and supported by the African Development Bank.

Signing of the 4 Alliances' Declaration © INBO - C. Runel

Global Alliances for Water and Climate

The four "Alliances" for Basins (Paris Pact), Megacities, Desalinization and Business, created at the COP21 in Paris and strongly involved in water and climate action, which today represent more than 450 organizations worldwide, jointly committed themselves to mobilize their partners, identify and disseminate good practices and support the development of new projects by field stakeholders involved in adaptation and resilience in the water sector.

These "Alliances" reported, in particular, during the **"Water Showcase"** on:

- **the positive progresses made with the Flagship Projects on water adaptation launched at the COP21,** such as the Hydrological Information System of the 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,
- **new adaptation projects announced at COP22's Water Day,** for example, the Sebou River management in Morocco, the creation of the Water Adapt Training Hydrus Center in Brasilia or the future use of the SWOT satellite for hydrological observations, among other things.

"Adaptation of water resources to climate change must be organized at the natural level of national or transboundary basins of rivers, lakes and aquifers, where water is flowing from upstream to downstream, and mobilize all field stakeholders, including local authorities, economic sectors and civil society, to achieve, through dialogue and in due time, a common vision to face the climate change challenges", **said Mr. Roberto Ramirez de la Parra, INBO World President.**

In addition, **INBO** and **IOWater** also organized or participated in a dozen side events on adaptation to climate change that promoted the **"Paris Pact",** the joint management of ground and surface waters, Water Information Systems (WIS) and Social Innovations (AfriAlliance project).

Finally during the COP22, **INBO,** in partnership with the International Secretariat for Water (ISW), presented the **"Blue Passport"** initiative, which aims to promote basin citizenship and encourage new commitments to improve the management of rivers, lakes and aquifers.

A personal "Blue Passport" was handed to **Ms. Ségolène Royal,** French Minister for the Environment, Energy and the Sea, and to **Ms. Judith Enaw,** Secretary General of the International Congo-Ubangui-Sangha Commission (CICOS) and President of the **African Network of Basin Organizations - ANBO,** in recognition of their respective contributions for better management of the French and African river basins.

www.inbo-news.org

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MARRAKECH
COP22|2016|CMP12
UN CLIMATE CHANGE CONFERENCE

AFRICA

Afri-Alliance

Innovative solutions for water and climate in Africa

Afri-Alliance kick-off meeting - Delft - The Netherlands

Africa is one of the regions that need to find innovative solutions to address the challenges related to water and adaptation to climate change.

Funded by the EU Research and Innovation Program (H2020), the **Afri-Alliance project** aims to build Africa's capacity to meet the water-related challenges and climate change by developing joint work and the sharing of innovative solutions between existing African and European networks.

Over the next five years (2016-2021), the 16 partner organizations of the project, in which **IOWater** is responsible for identifying innovative solutions and **INBO** is in charge of communication, will work at increasing and enhancing research and innovation related to water and climate change.

SIRAF Action Groups in Burkina Faso
© Minata Coulibaly

Entering into a continuous process of transfer of technology and knowledge, the first project activities consisted in establishing five thematic groups, made up of researchers, managers, NGOs, etc., that address the issues of:

- Integrated Water Resources Management,
- Food security and Agriculture,
- Human Capacity Building,
- Climate Change Adaptation and Mitigation,
- Networks for Water and Climate Data monitoring, collection, forecasting and analysis.

A second line of work focuses on the innovation needs at local and regional level in Africa.

The identification of the needs and existing solutions is starting, including through workshops held across Africa such as ANBO General Assembly, the WaterNet / WARFSA / GWPSA Symposium in Gaborone, Botswana, from 26 to 28 October 2016 and the COP22 in Marrakech, Morocco, on 8 November 2016.

www.afrialliance.org

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AWIS

By sharing experience and knowledge, the African River Basin Organizations can find solutions to the many challenges they face.

They differ in terms of seniority, experience, size and function/mandate and this diversity offers a great opportunity to exchange, learning, capacity building and cooperation among them.

In this sense, the African Network of Basin Organizations (ANBO), through the African Water Information System (AWIS), is establishing a common platform for the African continent to support the exchange of experience, knowledge and expertise between institutions and member organizations to improve coordination and harmonization of policies, strategies and practices in transboundary water management.

In 2016, an analysis of the existing sites in Africa and elsewhere in the world was carried out, and **AWIS** weaknesses and strengths were analyzed, taking into account the opportunities at a participatory workshop held in April 2016 in Dakar.

This workshop recommended some main lines for **AWIS** development strategy.

Workshop in Dakar - Senegal

www.african-wis.org

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SADIEau AfricanWIS
Système Africain d'Information sur l'Eau
African Water Information System

Mono Basin Authority (ABM)

Togo and Benin together in a same Basin Authority

The Mono River

The Mono Basin Authority (ABM) is entering into its operational phase.

Following its establishment, the Ministers of the two countries chose Benin as host of the "ABM" Executive Directorate.

The strategic plan of the institution is being validated by the various stakeholders.

The establishment and operationalization of the "ABM" are supported by the ECOWAS Water Resources Coordination Center, as well as by **IOWater** and **pS-Eau** with the support of the Rhone-Mediterranean-Corsica Water Agency (AERMC).

The project also promotes the emergence of water and sanitation cooperation projects carried out by French local authorities in both countries. Three partnerships are currently being formalized, involving French local authorities and solidarity associations.

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CICOS

The Rhine and the Congo River Basins: an old and lasting relationship

Since 2013, IOWater has been helping in the implementation of the Master Plan for Water Development and Management (SDAGE) of the International Commission of the Congo Ubangui-Sangha Basin (CICOS) with support from the Rhine-Meuse Water Agency (AERM).

Cooperation between the Congo and the Rhine indeed dates back to the creation of **"CICOS"** in 1999, supported at that time by the Central Commission for Navigation of the Rhine.

More recently **"AERM"** and **IOWater**'s experts intervened during the **"CICOS"**s' Fourth Regional Consultation Platform held in Brazzaville in November 2016, to share experience on the functioning of "AERM" Basin Committee and its participatory approach, which "CICOS" wishes to inspire from.

Group photo of CICOS stakeholders

To further this exchange of experience, the Secretary General of "CICOS" will participate in the Rhine-Meuse Basin Committee in April 2017.

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Adaptation to climate change in the Congo River Basin

During the COP 21 in December 2015 in Paris, a new financing agreement was signed by the French Development Agency (AFD) and the International Commission of the Congo-Ubangui-Sangha Basin (CICOS).

Given its strong relationship with "CICOS", its experience and being in charge of **INBO Permanent Technical Secretariat, IOWater** was entrusted with assisting in the management of this new project, including the secondment of a junior resident expert.

This new project started when the new Secretary General of CICOS, Ms Judith Enaw, took office.

The project specially aims to improve the monitoring of water resources in the Congo River Basin, combining the classical "in situ" approach and the innovative use of satellite altimetry.

The SWOT satellite program ("Surface Water and Ocean Topography") is a French-American project of Earth observation satellites that will provide spatiotemporal variations of continental water levels for 2020.

A Working Group on Space Hydrology, established in 2014 and run by IOWater, gathers CNES, IRD, AFD, IRSTEA, BRLi and CNR.

Signing of the new agreement by AFD and CICOS in December 2015
© IOWater - C. Runel

As part of this CICOS project, this group supports the installation of new hydrometric stations, as well as carrying out an analysis of hydrological monitoring and space applications in the Congo River Basin.

The results of this study will help guide the design and implementation of CICOS Hydrological Information System.

www.cicos.info

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AFRICA

Republic of Congo

Strengthening of the Hydrological Service

Recruitment of a private operator to support the Hydrological Service?

The need for an operational hydrological and meteorological service, including for adaptation to the climate change effects, pushed the Republic of Congo to innovate in this strategic field.

IOWater was entrusted with a feasibility study for recruiting a private operator for support to the National Hydrological Service.

Two objectives guide the reflection: the search for sustainability and quality of the service to users of hydrometeorological data.

If the feasibility of such a Design-Construction-Operation (DCO) contract is conclusive, additional funding will be sought.

The use of a private operator for the provision of such services is a particularly innovative project.

In addition to securing a sustainable funding of the National Hydrological Service, the task of the private operator is to generate revenue to maintain the monitoring network. It will have to make itself less and less necessary up to its retirement in a few years, as the Congo Hydrological Service has been building up at the same time.

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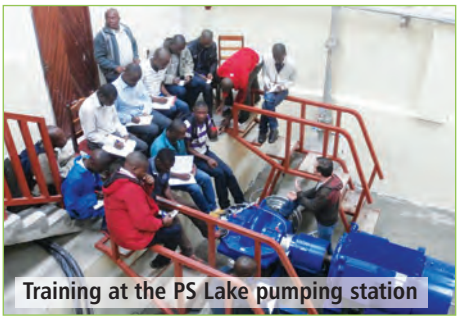
Congo DR

Technical assistance to an ICRC project for REGIDESO



Training at the PS Lake pumping station

As part of improving the water supply to the city of Goma (North Kivu), the International Committee of the Red Cross (ICRC) recently completed several projects of rehabilitation and building of pumping stations for drinking water supply.

The two main facilities at the core of this project are the pumping stations called "PS Lake" and "PS Plant", whose pumps reach a unit capacity of 400 kW each.

The ICRC entrusted IOWater with analysis, assessment and providing advice on these pumping stations. It complemented the training provided annually for **the ICRC "Wathab" (water and habitat) staff members** and was motivated by a series of difficulties and malfunctions that delayed the commissioning of these pumping stations.

In addition to the assessment and recommendations regarding these problems, this assignment was also to:

- Draft maintenance record sheets for the **REGIDESO** to carry out preventive and corrective maintenance of the equipment;
- Write a "safe" start-up procedure for both pumping stations;
- Carry out a short training course (1.5 days) for the **REGIDESO** employees in the PS Lake pumping station to answer questions and to make the necessary demonstrations (start-up procedure, inflating the anti-hammer balloon, etc.).

At the end of **IOWater** mission, all the problems were solved and **REGIDESO** received the green light from **ICRC** for using these new machines.

This study allows IOWater to be referenced at the ICRC for "technical expertise", in addition to the "training" component for which it already was.

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COMITE INTERNATIONAL GENEVE ICRC

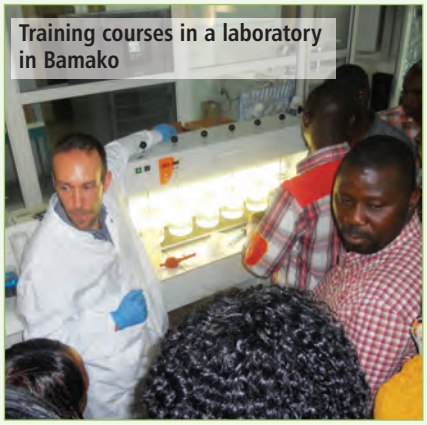
REGIDESO

Mali

IOWater and SOMAGEP confirmed their partnership

The Malian Water Supply Management Company (SOMAGEP) is in charge of operating and managing the DWS facilities in all Malian urban areas of more than 10,000 people.

As part of its policy for its staff's capacity building, **SOMAGEP initiated an ambitious program to improve their water-related skills.**



Training courses in a laboratory in Bamako

Thus, since 2014, **IOWater** has conducted many training sessions in Bamako and at its centers in Limoges and La Souterraine in France.

In 2016, this partnership was confirmed by conducting many training sessions.

Several **SOMAGEP** engineers also participated in training courses in France.

All in all, this partnership generated the realization of approximately 18 training sessions in 2 years, which helped train more than 270 people of SOMAGEP, including receiving more than 50 people at IOWater Training Center (NFWTC) in France.

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SOMAGEP - S.A.
SOCIETE MALIENNE DE GESTION DE L'EAU POTABLE - S.A.

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

Volta River Basin

IWRM implementation in Ghana

The project to support Integrated Basin Management of the White Volta, a transboundary tributary of the Volta, in Ghana has entered into a new phase.

The partners of the IOWater project, supported by the French Loire-Brittany Water Agency (AELB), are: the Water Resources Commission, the White Volta Basin Board and the Volta Basin Authority (VBA).

A first mission of experts from the **International Office for Water (IOWater),** the Loire-Brittany Water Agency and the Nakanbé Agency was organized in June 2016 to deal with two main issues: funding and hydrological monitoring.

Ramsar Site in the Rensu Delta in Ghana - June 2016

A workshop was organized in Ouagadougou in June 2016 with Ghanaian and Burkinabe partners. Sustainable funding and planning were at the core of the exchanges in this workshop that dealt with:

- **The progress of the Master Plans for Water Development and Management (SDAGE) in the White Volta and Nakanbe sub-basins,** in relation with the VBA Master Plan;
- **Taxes for funding IWRM,** incentives to pollute less through the introduction of a pollution tax in both countries;
- **Data exchange** between the national Water Information Systems and the Volta Basin Observatory.

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Burkina Faso

The Nakanbe Water Agency

IOWater's assistance to the Nakanbé Water Agency (AEN), launched in 2011 with the support of the Loire Brittany Water Agency (AELB), has developed at a steady pace in the first half of 2016.

With priority given to the implementation of the **Master Plan for Water Development and Management (SDAGE),** a mission of **IOWater** focused on the methodology for developing scenarios and accompanying tools. The scenarios, a major step in the "SDAGE" development, are also being drafted.

Two other successive missions of **IOWater** experts took place in Ziniaré, home office of the "AEN" General Directorate, to organize:

- a workshop for capacity building of the staff of "AEN" General Directorate on the quantitative and qualitative monitoring of water resources;
- a support to the development of the Water Information System.

The second half of the year was marked by the launching of Phase 3 of the support program.

A mission of an "AELB" expert took place in October 2016 to develop a tool for following up the **"AEN" Strategic Development Plan.**

The latter aims to increase the efficiency of the structure to make it a model of the implementation of Integrated Basin Management in Burkina Faso and in the sub-region, up to 2026.

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The Nakanbé River

Support to the Mouhoun Water Agency

Since 2014, IOWater has been continuing an institutional and technical assistance to the Mouhoun Water Agency (AEM), with support from the Seine-Normandy Water Agency (AESN).

Year 2016 was marked by the launch of Phase 2 of the support program. This second phase aims to achieve the operational management of the Mouhoun Basin through the implementation of the **Multi-year Action Plan.**

The means to complete this are, among others, the capacity building of the "AEM" teams and bodies.

A key step was achieved through the organization of a workshop on the "AEM" multi-year Action Plan, its follow-up and evaluation.

Workshop in Dédougou - September 2016

Facilitated by an **IOWater** expert, helped by a Burkinabé lawyer, this one-week workshop allowed drawing the lines for a future local contractual policy between "AEM" and the basin partners (public, private, voluntary) who can potentially become in charge of the activities of the Multi-year Action Plan.

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AFRICA

Burkina Faso - ONEA

KfW-funded budgetary support to the DWSS Sector

The RODECO-IOWater Group has been implementing for 15 months (October 2014 - March 2016) a KfW-funded project to support Burkina Faso's National Water and Sanitation Company (ONEA), for:

- Defining its training plan and implementing the activities deemed to be priorities;
- Analyzing and formulating practical proposals for the improvement of its quality system.

A program of 35 training courses was developed in collaboration with the various ONEA Departments.

Each training course was described by terms of reference specifying its main characteristics.

In liaison with the HRD and ONEA Water Training Center (CEMEAU), 12 priority training courses were defined and **IOWater** prepared for each of them a ready-to-use educational kit including a Training Handbook and PowerPoint Tools for facilitating the training of ONEA trainers.

The second component consisted of an analysis of the current quality assurance system in terms of investment planning, contractual follow-up and monitoring of work.

Proposals for practical actions were drawn up for improving the quality assurance system after a major dialogue between the **ONEA** departments.

These mainly aim to improve:

- The work organization and the methods used for better results in the planning and implementation of investments;
- The contractual follow-up and work supervision practices in order to implement them more quickly, according to the defined technical rules and within the planned financial budget.

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KFW

Technical assistance to project management

For a 36-month period started in October 2015, **ANTEA** and **IOWater** are implementing an **AFD**-funded project of technical assistance to **ONEA** on project management.

The project has three specific objectives:

- Audit the project management function;
- Formulate proposals for improving organization, procedures and documentation management;
- Train the staff.

In 2016, **IOWater** experts audited **ONEA**'s project management function through the analysis of the organization and current functioning of the services of the three departments in charge of this activity.

Recommendations to improve the organization, functioning and effectiveness of the departments were then formulated and presented to **ONEA** management board.

ONEA treatment plant

At the same time, a training program was drawn up for the three departments concerned. The identified training courses will be implemented during the next 2 years of the project.

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ONEA AFD

Cameroon

Collaboration between IOWater and ASPAC International

ASPAC International is a Belgian builder of infrastructure in the field of water.

In 2016, ASPAC International and IOWater started a close collaboration in Cameroon.

For this, the following four training courses were conducted in 2016 for the staff of **ASPAC International** in Cameroon:

- Hydraulic study. Level 1: bases of applied hydraulics;
- Hydraulic study. Level 2: pumping and distribution;
- Analysis and modeling of water supply systems. Level 1;
- Modeling of drinking water supply systems. Level 2.

Trainees of ASPAC International with an IOWater trainer

Due to the very positive impacts of the training conducted in early 2016, **IOWater** was requested to provide technical support to **ASPAC International** on several projects in Africa including one in Cameroon for highlighting the synergy between training and operational implementation of the projects.

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ASPAC INTERNATIONAL

South Africa

Training for Rand Water: the paths to optimization of water utilities

Solar panels in Limoges
Topic "alternative energy production"

In June 2016, a group of 14 employees of Rand Water were received by the IOWater's French National Water Training Center (FNWTC) in Limoges.

The training topics were defined in collaboration with the **Rand Water Academy** to give a more general view on careers in the field of water for company employees.

Over a period of three weeks, this training session helped to address the following issues:

- Maintenance of electromechanical facilities;
- Maintenance management;
- Optimization of energy and production of alternative energy;
- Leak detection;
- Conservation of water quality,
- And smart grids.

These topics, often innovative, gave the South African participants an opening to issues with which they are not always familiar but which are increasingly important in the context of Global warming for resource management.

Once more, we can only rejoice in the success of this collaboration, which has already been developing since 2012 between **IOWater** and **Rand Water.**

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RAND WATER ACADEMY

Senegal

IOWater is developing the skills of the stakeholders in stormwater drainage in Greater Dakar

Participants in the seminar in Dakar on "Maintenance of drainage systems"

Following the catastrophic floods of 2012, Senegal in connection with the World Bank decided to implement an urban development project called "Stormwater Management and Climate Change Adaptation Project (PROGEP)".

"PROGEP" aims to reduce the risk of flooding by improving the stormwater drainage system in the suburbs of the City of Dakar (Dakar-Pikine-Guédawaye).

Beyond the design and implementation of a suitable infrastructure to handle the most extreme situations, a major concern of "PROGEP" is to build the capacities of different families of national and local stakeholders (deconcentrated and decentralized government structures, community organizations, local residents, etc.).

As part of this project, **the Municipal Development Agency (MDA) entrusted IOWater with several missions for developing the skills of stakeholders in stormwater drainage in Greater Dakar:**

- In 2014, **IOWater developed a training plan for the various bodies involved in "PROGEP":** Ministry of Water and Sanitation, the National Social Housing Company, the Highways Agency (AGEROUTE), the cities of Dakar, Pikine and Guedawaye, the National Sanitation Board (ONAS), the Directorates of Urban Planning and Architecture (DUA), the Monitoring and Control of Land Use Directorate (DESCOS) and APIX.
- In 2015, **MDA requested IOWater to lead a seminar dedicated to the maintenance of the newly constructed drainage systems.** It gathered, in Dakar, 25 leaders and project managers of various Senegalese institutions and the World Bank, all involved in **"PROGEP"** implementation. It was the occasion of fruitful exchanges between the various stakeholders on the problems and solutions to be developed to improve and/or guarantee the operation of the facilities, on asset management and the development of a culture of maintenance.
- **In 2016, MDA and ONAS again requested IOWater to develop practical solutions and practices totally adapted to the local context and constraints for the maintenance of the newly constructed drainage systems in Greater Dakar.** This work was completed by writing an operating handbook for future operators.

All in all, several **IOWater**'s interventions will undoubtedly improve the skills of local stakeholders, so that the developed systems last and so that **"PROGEP"** can continue its development to secure more and more people in Dakar.

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ONAS

AGENCE DE DÉVELOPPEMENT MUNICIPAL

NORTH AMERICA AND THE CARRIBEAN

"Québec'eau" is fast growing

After having officially launched its website in early 2016 and having directly participated in the TEQ (Technologies of the Environment in Quebec) exhibition in March 2016, **"Québec'eau"** is now operational.

"Québec'eau" is a Non-Profit Organization (NPO) established in March 2015 under Canadian Law.

It was officially launched during the great AMERICANA exhibition in spring of 2015 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 grouping of environmental specialists in Quebec and represents over 2,700 members from all backgrounds.

Active for more than 50 years, it aims to promote good practice and environmental innovation.

"Québec'eau" aims at conducting the continuing training of the sector and works in cooperation with the stakeholders of Quebec to offer as wide a range as possible of educational products to the water professionals.

"Québec'eau" relies on both IOWater expertise and that of the Quebec partners.

The first training courses were conducted in March 2016, with the "Ecole Polytechnique" of Montreal.

Several training courses on pumping stations were also held in autumn, with the services providing NORDIKEAU Company for example.

"Québec'eau" team in the TEQ exhibition in Quebec

Other training projects are being developed with the Ministry of Municipal Affairs of Quebec (MAMOT), in the area of knowledge of water supply systems and leak detection.

www.quebec-eau.org

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Cuba

Support to the management of water bodies supplying Havana

Signing of the agreement

The cooperation project, proposed by IOWater and funded by the Adour-Garonne Water Agency, focuses on the Integrated Management of the Water Bodies that supply the agglomeration of Havana.

The central partner of the cooperation project is the National Institute of Water Resources (INRH), whose mission is to manage, carry out and monitor the implementation of the State policy for planning, control and protection of water resources in Cuba.

The Authorities are aware of the great difficulties they have to face that are especially caused by:

- The extended operation of the infrastructure without appropriate maintenance;
- The impact of extreme meteorological events on the infrastructure;
- Resource overexploitation practices;
- The low cost billed to the user for the service provided;
- Financial constraints;
- The fact that water has not been recognized as an item of the National Economy Plan until 2010.

Pollution problems in rivers and aquifers, saline intrusion phenomena are regularly observed and often get worse, especially for the two river basins and groundwater bodies that supply water to the 3 million inhabitants of the capital.

In this pilot river basin region, the project aims to help the Cuban partners in establishing a most appropriate governance and in developing the necessary management tools:

- Consolidation of a Basin Council and of its Executive Secretariat;
- Support to the characterization of the basin: monitoring, parameters, global vision;
- Planning methodology and Basin Management Plans;
- Information System and data management.

It also includes a capitalization component at national level.

The cooperation agreement was signed for the next two years on the occasion of the "CubaAgua" week in March 2017.

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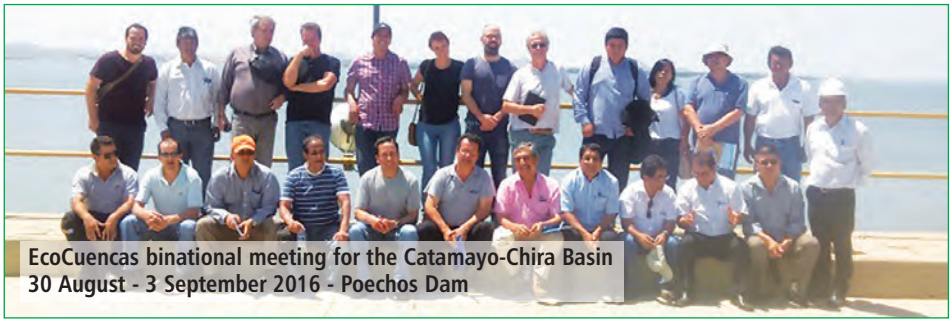
Information: Fax: +33 4 93 65 44 02 - E-mail: cooperation@iowater.org

LATIN AMERICA

"EcoCuencas"

Funding of adaptation to climate change: economic mechanisms for Latin American basins



EcoCuencas binational meeting for the Catamayo-Chira Basin
30 August - 3 September 2016 - Poechos Dam

The **"EcoCuencas"** project, which, since January 2015, has been dedicated to the development of economic mechanisms for adaptation to climate change in Latin America, continued its efforts during its second year of implementation.

Co-funded by the European Union and coordinated by IOWater, the project proposes to theoretically develop and practically apply incentive economic instruments, dedicated to water resources management that can also be strategic structural tools for long term adaptation to climate change.

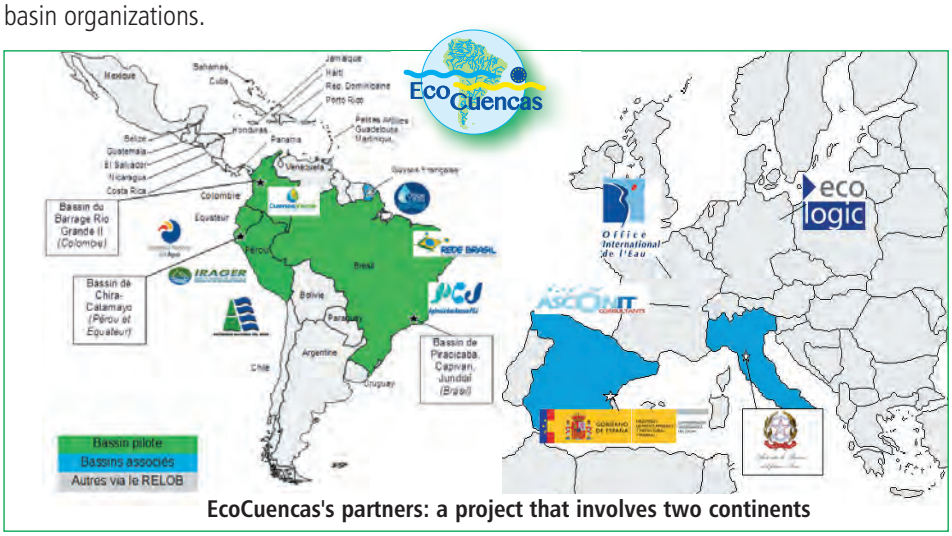
With a high degree of ownership, the project involves a wide variety of stakeholders, such as the National Water Authority in Peru and the National Water Secretariat in Ecuador, the PCJ Agency in Brazil, the Cuenca Verde fund in Colombia, **IOWater** in France, the IRAGER Institute in Peru, the German Ecologic "think tank", and OECD, INBO and different Spanish, Italian and French basin organizations.

The project aims to give a true picture of the existing economic mechanisms in Latin America, and the tracks to follow to improve their efficiency in adapting to climate change.

The **"EcoCuencas"** project involves three pilot basins offering a wide panorama of situations:

- that of Catamayo-Chira boundary river shared by Ecuador and Peru,
- the Brazilian basin of the Piracicaba, Capivari and Jundiai rivers that supply drinking water to the city of São Paulo,
- the river basin of the Rio Grande II dam in Colombia, essential to the water consumption of the Colombian city of Medellin.

Designed to serve as a basis for further activities, analyses of the effects of climate change and of existing economic mechanisms have been published in each basin.



EcoCuencas's partners: a project that involves two continents

Their preparation was coordinated by **IOWater** and implemented by the Latin American partners in the project. It led to specific workshops rich in experience sharing in the first half of 2016.

At the same time, a guide dedicated to economic mechanisms for water resources management in a context of climate change was also drafted, with a coordination by Ecologic.

It will be back-fed by the lessons learned from the practical implementation of its proposals in the various pilot basins.

Coordinated by the French consulting firm Asconit, the proposed pilot actions, undertaken by partners in 2016, are taking various forms depending on the context and relevance of their implementation: establishment, strengthening, broadening of economic fees for water use and pollution, development of payment mechanisms for environmental services, etc.

As regards adaptation, the project also provides for action planning and prioritization of measures against the effects of climate change.

Finally, it deals with the institutionalization of water resources management in a border context to enhance the shared adaptive potential with, for example, the significant progresses made by Ecuador and Peru in 2016 towards the establishment of a sole commission for better management of the nine boundary basins.

The Brazilian (REBOB), Latin American (LANBO) and international (INBO) Networks of Basin Organizations involved in the project, have a central role in facilitating the networking and dissemination actions needed to share the lessons learned.

Note: This article was written with the financial support of the European Union. Its contents are the sole responsibility of IOWater and it cannot be considered to reflect the EU's position.

www.ecocuencas.com

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LATIN AMERICA

Colombia

Facilitating coordination between institutions


The Magdalena River

The second phase of the IOWater project in support to the Colombian Ministry of Environment and Sustainable Development (MADS) for developing Integrated Management in Colombia began in 2016, thanks to the help provided by Adour-Garonne Water Agency.

This project is divided into three axes of cooperation.

- **Firstly,** a support to the operation of Basin Organizations, with the specific case of **the Regional Environmental Council of the Macro Magdalena-Cauca Basin (CARMAC),** and the articulation between the different levels of participation and planning especially for adaptation to climate change.
- **Then,** a new cooperation activity with **the Regional Autonomous Corporation of Boyacá (CORPOBOYACA)**, on adaptation to climate change, but also on biodiversity. It includes very specific topics such as the contracting methods for environmental protection and flood prevention, hydromorphology, groundwater management or the interface between environmental regulation and its social acceptance.
- **Finally,** a component dedicated to **Water Information Systems,** which aims at promoting interoperability of the data produced by many stakeholders.

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Ecuador

From the establishment of Basin Councils to participatory planning


National IWRM workshop - June 2016

The support of the International Office for Water (IOWater) to the Ecuadorian National Water Secretariat (SENAGUA) for the development of Integrated Water Resources Management in Ecuador, co-funded by the Adour-Garonne Water Agency (AEAG), continued for a second year in spite of the very difficult situation generated by the earthquake of April.

Relations between France and Ecuador about water resources management have reached a new plateau, with the signing of a cooperation agreement by the French Embassy, the Ministry Coordinator of Strategic Resources of Ecuador, the Adour-Garonne Water Agency, the SENAGUA and IOWater.

The project is structured around three components:

- **Firstly,** a support to the establishment of **a pilot Basin Council for the Rio Portoviejo,** in the Manabi Province. The lessons learned have been used at national level to facilitate the same dynamics in the nine River Basin Districts (RBDs) and in thirty-seven Local Water Planning Units (LWPUs).
- **Then,** help in **the drafting of the Water Resources Management Plans** by the newly created Basin Councils. A national guidance document for participatory planning was written.
- **Finally,** a support to **the Water Information Systems,** for facilitating interoperability between the data of the various institutions of the sector.

This work will facilitate the analyses of the situation needed for planning.

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Mexico

Improving Urban Drainage in the Valley of Mexico

IOWater project to help the establishment of a "Greater Mexico" Metropolitan Organization for Sanitation and Urban Drainage (OMVM), benefits from a support from the Seine-Normandy Water Agency (AESN), the Interdepartmental Syndicate for Sanitation of Greater Paris (SIAAP) and "Seine Grands Lacs" (Seine Great Lakes - SGL).

Following the signing, at the COP21 in December 2015, of a Memorandum of Understanding between SEMARNAT - CONAGUA and the French Ministry of the Environment, and of its technical annex in Merida in June 2016, the project aims, in particular, at analyzing the existing institutional framework, studying the drainage systems of Paris and Mexico, and proposing a strategy for strengthening the "OMVM" Drainage Commission.


Signing of the French-Mexican Agreement at the COP21
© IOWater - C.Runel


Signing of the Technical Annex
Merida - June 2016 © IOWater - C.Runel

The project Steering Committee, which took place on 16 February 2017 in Mexico City, organized the installation of a French junior expert at the CONAGUA in Mexico and validated the work program for the coming months.

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

LATIN AMERICA

Brazil - ADASA - DF

ADASA's staff training program on Integrated Water Resources Management


Training in Brasilia: Field trip on Lake Descoberto

An Organization with administrative and financial autonomy, **the Regulating Agency for Water, Sanitation and Energy of the Federal District - ADASA (Brasilia, Brazil)** is assigned with the regulation of public water, sanitation (including waste) and energy services in the Federal District, the basin management policy, the technical and institutional support to the three Basin Committees of the Federal District and especially the Master Plans for River Development and Management.

ADASA must also ensure that its activities are integrated with those of the River Basin Organizations, defined at national level as a result of the Water Act of 1997, as Brasilia is located upstream of the river basins of the "federal domain": Paranaíba-Paraná, São Francisco and Tocantins-Araguaia. It organizes the establishment of economic fees for the use of water resources in the Federal District, and especially for the catchment areas of the tributaries of the Paranaíba River.

The challenges of an integrated and participatory management of water resources and of improving water quality and availability in drought periods led the Agency to pay special attention to institutional development and the continuing training of its staff.

In this context, **ADASA set up in 2011 a partnership with UNESCO,** which includes among its immediate objectives, "to provide technical and scientific support to the structuring of public agencies and of the participatory management of users of river basins in the Federal District, particularly to deal with critical events".

ADASA and the International Office for Water established, in the second half of 2016, a program for cooperation, exchanges and international technical assistance to improve the training of the Agency and Federal District's executives and staff in water resource management.

This program, funded by UNESCO, aimed at consolidating the Basin Committees of the Federal District, by improving the management tools provided by the Water Law of the Federal District (No. 2725/2001), which plans for the creation of a Basin Agency to implement and finance programs of general interest in the river basins.

The first technical visit, which was addressed to executives of ADASA and of the Water and Sanitation Company of Brasilia (CAESB), took place in France in August 2016.

This visit focused on the policies, organizations and mechanisms of water management in the Rhone-Mediterranean Basin.

The delegation was received by the Verdon Regional Natural Park, the Canal de Provence Company and the Development of the Provencal Region Company, the Directorate for Water, Sanitation and Stormwater of Aix-Marseille-Provence Metropolis, the Rhône Mediterranean Corsica Water Agency and IOWater.

The second phase of the training program took place in Brasilia from 26 to 30 September 2016. It addressed 25 staff members of **ADASA** and of various agencies involved in water management in the Federal District.

The five-day Program, opened by Mr. Paulo Salles, President-Director of **ADASA,** and Mr. Israel Torres, Director of **ADASA,** consisted of lectures, case studies, discussions, exchanges of experience and field visits focusing on the Lake Descoberto (the main source of drinking water for Brasilia) and Lake Paranoa Basins.

Training focused on the comparative analysis of key elements of a river basin management policy and was organized in 5 modules taught by IOWater experts:

- Basin management experiences and international cooperation;
- Analyses of basins and water use;
- Integrated river basin planning;
- Funding of integrated river basin management;
- Institutional organization of Water Agencies and Basin Committees.

The following phases, in March 2017, provided a specialization in France of ADASA's managers of strategic projects in the field of integrated water resources management.

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

UNESCO

LATIN AMERICA

Brazil

Triangular cooperation for better basin management

For three years, IOWater has facilitated a cooperation program between the Basin Organizations of the Piracicaba, Capivari and Jundiaí Rivers (PCJ) in the State of São Paulo and the Basin Committees of the Rio Grande do Sul State with support from the French Loire-Brittany Water Agency (AELB).

After the PCJ Basins and the State of Rio in 2015, **IOWater** organized in 2016 a visit for the water stakeholders of the Rio Grande do Sul to the State of Ceara in Northeastern Brazil, where the country's oldest Basin Agency is located, **the Water Resources Management Company.**

This agency, founded in 1996, is financing, with economic fees for water use, a much elaborated system for the participatory management of dams and canals. **Twelve Basin Committees coordinate the work of fifty-four water allocation Commissions** that organize the sharing of this valuable resource among farmers, industry and inhabitants of this semi-arid region.

The most significant Brazilian experiences were also analyzed.

A delegation, led by the State Secretary for the Environment of the State of Rio Grande do Sul and several Presidents of Basin Committees, was invited in France at the home office of the Loire-Brittany Water Agency in Orleans and at the delegation of Le Mans during a week from 13 to 17 June 2016.

Alternating technical presentations, field visits and discussions with the staff of the Agency and its partners, exchanges enabled the Brazilian delegation to understand how the French Agencies manage to mobilize local basin stakeholders to achieve Good Ecological Status. Territorial Contracts and a strategy to fund project managers and facilitators across territories especially caught the attention of the participants.

Based on this knowledge, **cooperation is entering into a new phase of establishment of an agency in the pilot Rio Ibicuí Basin, a tributary of the Rio Uruguai, located at the extreme south of Brazil.**

The delegation's visit at Le Mans

Drawing lessons from the analyzed Brazilian experiences and inspired by the approach of Territorial Contracts set up by the "AELB", **local partners developed a Pact for Water Resources Management in the Ibicuí Basin,** to be proposed to technical and financial policymakers.

On such a basis, the first technicians of the pilot agency should be recruited early 2017.

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"HYDRUS-BRAZIL": Water Training Center and Adaptation to Climate Change

The need for training and professional qualification in the Brazilian water sector led to the creation, in 2015, of the **"Hydrus-Brazil"** Association.

The Hydrus-Brazil project is based on the creation of two specialized entities:

- **A technical training center in the State of São Paulo,** dedicated to the design, management, operation and maintenance of drinking water supply and sanitation utilities,
- **A management training center in the Federal District (Brasilia)** devoted to the training of decision makers and executives of Basin Committees and Water Agencies, Regulatory Authorities, Drinking Water Supply and Sanitation Utilities, Irrigation services and water-using industries.

Adaptation to climate change is a key issue in Brazil and the Hydrus-Center in Brasília is proposing to provide the necessary skills to the executives of public organizations and private enterprises involved in water resource management and drought and flood prevention.

The French Ministry of the Environment, Energy and the Sea and the International Office for Water are supporting the center for:

- **The realization of a preparatory study of the center and the elaboration of the 1st Training Catalogue to be proposed;**
- **Pilot training sessions at the beginning of 2017:** "Climate change: adaptation of water resources management" and "Performance indicators for water and sanitation utilities";
- **The development of digital educational tools:** "Efficiency of drinking water supply systems and leak detection", "Energy saving in water and sanitation utilities" and "Basin Contracts".

This project is part of the 8th World Water Forum to be held in Brasília in March 2018.

www.hydruscapacitacao.com.br

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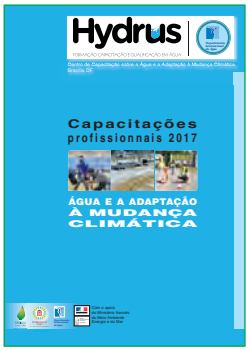

Information: Fax: +33 4 93 65 44 02 - E-mail: cooperation@iowater.org

Madagascar

Analysis of the institutional framework and governance for integrated urban water management in Antananarivo

Floods in Antananarivo

With funding from the World Bank, and as a member of a consortium directed by the Nodalis Consultancy, IOWater contributed to the analysis of institutional management of floods in the Malagasy capital.

After floods having caused severe damage, Madagascar wished to have an analysis made of the governance mechanisms for urban water management in the capital and its suburbs.

As part of this project, **IOWater carried out an assignment for assessing the current institutional organization,** with the major sectoral stakeholders of Antananarivo Basin to analyze the main shortcomings.

The actions carried out led to:

- **Proposals for improvements in governance for more integrated urban water management,**
- **Recommendations for the revision of the National Water Code,**
- **Completion of two comparative case studies on institutional management of floods in Dakar and Vientiane.**

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Mekong River Basin

An international team to support MRC

Project kick-off meeting at the MRC home office in Vientiane - Laos

The "Compagnie Nationale du Rhône" (CNR - National Company of the Rhone), the Science and Technology Research Institute for Environment and Agriculture (Irstea), the International Water Management Institute (IWMI) and IOWater jointly replied to a bid from the Mekong River Commission (MRC) for the Mekong-HYCOS Follow-up project, which started in 2016.

The MRC Secretariat (MRCS) has been responsible for the Mekong-HYCOS project from 2007 to 2012, whose main objective was to establish a reliable and accurate hydrometeorological data collection system.

Thus, more than 30 hydrological stations were installed along the Mekong River and its tributaries. This project has established a basin hydrometeorological information system, whose data are shared between the MRC and its four Member States: Cambodia, Laos, Thailand and Vietnam.

The project was managed by the Information and Knowledge Management Program (IKMP) that asked the French Development Agency (AFD) to financially support the project follow-up.

In this context, the experts of CNR, Irstea, **IOWater** and IWMI will work with the MRCS on the following issues:

- Sediment Management and Transport,
- Improvement of the Quality Assurance / Quality Control (QA / QC) process,
- Regional Analysis of the rivers regime.

The project kick-off meeting was held at the MRC home office in Vientiane - Laos in July 2016. During the meeting, IOWater:

- Facilitated exchanges on the analysis of the existing structures at national and regional level in terms of data flow organization, data management and use;
- Presented examples of water data management and use for Integrated Basin Management;
- Identified and presented lines of work and recommendations for the overall strengthening of data management and use in MRC.

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Cambodia

The Stung Sen Basin is testing Integrated Basin Management

The Stung Sen River Basin Committee - March 2016

The IOWater project, which is supported by the Loire-Brittany and Rhine-Meuse Water Agencies and whose objective is to improve water governance by promoting Integrated Water Resources Management (IWRM) in the Stung Sen Basin, main tributary of Tonle Sap Lake, is entering into its third phase.

The two previous phases allowed making real progress:

- **Implementation of water resources planning steps with members of the Stung Sen River Basin Committee:** characterization of the basin, defining the challenges and objectives, establishing the associated action plan and cost estimate;
- **Training of the teams** of the Tonle Sap Authority (TSA), the Ministry of Water Resources and Meteorology (MOWRAM) and of the Secretariat of the National Committee for River Basin Management on the training of trainers and on the organization of Water Information Systems.

In recent years, **the Stung Sen River Basin Committee met on several occasions,** especially in the presence of the MOWRAM Minister, Mr. LIM Kean Hor, and the General Managers of the Loire Brittany and Rhine-Meuse Water Agencies in March 2016.

Thus, the first version of the Stung Sen Basin Management Plan and Program of Measures has been made possible by the work done with the teams of TSA, MOWRAM and local representatives.

Meetings with the Ministries of Economy and Finance, Environment, Public Works and Transport, Rural Development allowed identifying potential funding at national level for the implementation of the actions of this Management Plan.

The Government of Cambodia is implementing a dynamic policy and recently installed 15 new hydrological monitoring stations in the country - including 4 in the Stung Sen River Basin - and 15 meteorological monitoring stations - including 2 in the Stung Sen River Basin for the production of water data.

These new data will complement and refine the results of rainfall and hydrological statistical analyses included in the characterization of the River Basin.

In terms of data management, the project provided methodological support for the development of reference GIS layers on rivers and sub-basins. In addition, work for integrating the data produced by the automatic stations is underway with the use of dynamic mapping available on the Web portal of the Tonle Sap Authority.

To deepen the characterization work, the TSA-MOWRAM team made several flights over the Stung Sen at different times of the year to better understand the conditions of the river and its banks.

These missions have collected many aerial photographs that give an overview of the area. The first flight in the dry season confirmed that, like its neighbors, the Stung Sen suffered from an exceptionally dry season this year, but is still relatively preserved.

The third phase of the project, which started in 2016, focuses, at the Stung Sen level and in the whole country, on the financing of the water management policy and on the users' willingness to pay.

It also includes an increase in the training of trainers, the preparation of national methodological guidelines for the planning process and the strengthening of the link between institutional cooperation projects and solidarity projects. The project scope will also extend to the Tonle Sap Lake Basin to make an analysis of the situation.

In coordination with the project, several French NGOs are working on the establishment of access to drinking water and sanitation in the basin. This is the case, for example, of the Kraing Speu Association that is installing a drinking water supply system powered by photovoltaic energy in the village of Thmey, and has made this year the drilling and construction of the water tower.

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Water Tower being built in Thmey

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

China

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

The signatories of the French-Chinese agreement in China - March 2016

The Hai River Basin, with its 130 million inhabitants, which is one of the most developed economic zones in China, including the cities of Beijing and Tianjin in particular, has been selected as a pilot sector, under the Cooperation Agreement signed in December 2009 by the Chinese Ministry of Water Resources and the French Ministry of Ecology, for capacity building in Integrated Management and Water Resources Protection.

The project partners are, for the Chinese part, the Ministry of Water Resources, the Hai River Water Conservancy Commission and the Water Boards of Tianjin City Hall and Hebei Province, **and for the French part,** the Ministry of the Environment, Energy and the Sea (MEEM), the Seine-Normandy Water Agency (AESN), the Interdepartmental Syndicate for Sanitation of Greater Paris (SIAAP), the Interdepartmental Institution of the Seine Great Lakes, the French Embassy and **IOWater,** the latter taking care of its coordination.

After a first phase of mutual understanding of the operation of basin institutions in France and China, **a first pilot project tested, in the Zhou River Sub-basin (2,100 km ²), the application of new governance tools,** such as the establishment of a Zhou River Basin Coordination Group and the preparation of a water resources assessment, a Management Plan and a Program of Measures to meet the major challenges of the sub-basin.

Extension of cooperation: phase 3

Due to the success encountered and the satisfaction of the stakeholders of both countries, the partners agreed, on the occasion of the COP21 in Paris, to continue this cooperation from March 2016 for three years.

A new agreement, under adaptation and resilience to climate change, was officially signed at the Steering Committee that took place in March 2016 in Tianjin.

This third phase aims to develop abilities in Integrated Management in the pilot Zhou River Basin and also in the new pilot Luan River Basin (55,500 km²), where the tools of the previous phases will be replicated: water resources assessment, establishment of a Basin Coordination Group, a Management Plan with a Program of Measures.

The project will also deal with point and non-point pollution control, management of aquatic ecosystems and restoration of environments, monitoring networks and information systems, master plans for sanitation and management of lakes-reservoirs.

In support to the historical institutional components, **a new economic one funded by the FDA-instrument "FEXTE",** enables additional experts' missions and the experimentation of French technologies in the field of water management.

New partnerships are added to the historical partnerships in order to integrate this new operational and economic dimension and to strengthen the relations with:

- **The local administrations in charge of the water, agriculture, energy and environment sectors** and the research organizations of the Zhou and Luan River Sub-basins,
- **French companies** (Biotope, Veolia, very small enterprises, SMEs, midcaps, etc.) and research organizations ("Ecole des Ponts et Chaussées"/Water-Environment Laboratory and Urban Systems-LEESU, IRSTEA).

This extension of cooperation proves the quality of the relations established and shows a genuine will to go further in the French-Chinese cooperation on Integrated Water Resources Management.

On the occasion of the 2016 Chinese National Day, the project was selected to receive the "Chinese Government Friendship Award", handed by the Deputy Prime Minister, Mr. Ma Kai.

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Handing of the "Chinese Government Friendship Award" by the Chinese Deputy Prime Minister © IOWater - C.Runel

The Yuqiao Reservoir Bank

China

The China-Europe Water Platform

The PIANO (Policies, Innovation And Networks for enhancing Opportunities for China-Europe Water Cooperation) project is funded by the European Framework Program for Research for 2020 (2014-2020).

It aims at developing opportunities for trade and cooperation in research and innovation between Europe and China.

Since their start in March 2015, activities have been split into 6 project components:

❶ Strengthening relations between European and Chinese networks on technological innovation and water,

❷ Making lists of European innovations that may interest China,

❸ Studying the Chinese market, means for action, opportunities and constraints for technological innovation in the field of water.

❹ Promoting exchanges and political dialogue in order to create an enabling environment for the adoption in China of innovative European technologies in the water sector,

❺ Consolidating a strategic research and innovation agenda for the water sector between Europe and China,

❻ Disseminating the project results in China, Europe and beyond.

The coordinators of each component are:

- **International Office for Water, (IOWater);**
- Technical University of Denmark, (DTU);
- University of Natural Resources and Life Sciences, Vienna (BOKU), for two components;
- Stockholm International Water Institute, (SIWI);
- Institute for Environmental Protection and Research, (ISPRA).

For its part, IOWater is implementing the activities of the first component aiming at strengthening the networks and China-Europe Water Platform (CEWP) as regards Research and Innovation, by developing the mapping of stakeholders' networks and existing outstanding innovation projects.

It also contributes to the facilitation and visibility of the project by developing European and Chinese social networks (Twitter, LinkedIn, Facebook, Weibo).

P.I.A.N.O.
Policies, Innovation And Network for enhancing Opportunities for China-Europe water cooperation

www.project-piano.net

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Support to an agri-food factory project near Shanghai

Visit of a process water production facility in Shanghai (a chocolate bar factory)

Based in Bourges, France, **the Monin Group specializes in the production of syrups.** It will soon open a new production plant in Shanghai to meet the demand of the Chinese market.

Anxious to comply with the requirements of the Chinese Authorities responsible for environmental protection, **the Monin Group has entrusted IOWater** with a support mission for the treatment of the industrial waters of the future plant for the production of syrups.

IOWater helped the project team to identify its needs for process water production and for the treatment of industrial wastewater before its discharge into public sewers.

This work included a preliminary phase of analysis of the local context and visits of several agri-food industries in Jiaxing to evaluate the quality of the builders.

A second phase made it possible to establish the technical clauses of the consultation documents and to audit the candidates for the building of process water and wastewater treatment facilities. The support is therefore thorough, from the design phase to the acceptance phase of the installations.

This new mission is part of a partnership signed by the Monin Group and IOWater in 2015 and follows those already carried out in Kuala Lumpur.

They had enabled the operating teams to improve the performance of industrial wastewater treatment and to be trained on their own facilities, in situ, in Malaysia.

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MONIN®

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

ASIA

Laos

A new national dynamics

The IOWater project for Integrated Water Resources Management (IWRM) in Laos, implemented in the pilot Nam Ngum Basin, entered into its third phase early 2016.

This phase 3 aims to continue supporting the Lao Authorities for better governance of water resources:

- Through a pilot experiment in the Nam Ngum Basin;
- By fostering the emergence of basin management strategies at national level;
- By seeking better legal and institutional organization;
- By developing data collection and recovery tools.

During an official visit carried out in March 2016, the General Managers of the French Rhine-Meuse and Loire-Brittany Water Agencies, both providing support to the project, met Mr. Sommad PHOLSENA, the new Minister of Natural Resources and Environment (MONRE) in Laos. The latter expressed the wish to continue this cooperation and to be able to travel to France as part of a study visit to meet with stakeholders at national and basin levels.

The Water Resources Department of the Ministry (DWR-MONRE) is revising the country's Water Law and is wishing for technical support on this, particularly in terms of water data sharing. This is a new topic for the department. Year 2016 saw the first version of **the Lao Water Information System,** developed as part of the project.

The project provides support to the structuring and implementation of databases and software tools (metadata, dynamic mapping, presentation portal,...).

The DWR team, in charge of data management, was trained, from September to December 2016, to learn how to structure and manage these tools.

The purpose of this capacity building is to allow DWR to master the tools facilitating the integration, processing and recovery of the data produced internally and by various partners in order to generate the information useful for planning and decision making.

At the same time, training activities are continuing: a dedicated DWR team, supported by French experts with the help of the methodological guide, which has been developed in previous phases of the project, is applying to other Lao River Basins the methods used in the Nam Ngum Basin at the various stages of the planning process.

Meeting between the MONRE Minister and the French delegation

The French Water Agencies, taking advantage of the enabling conditions developed through this institutional cooperation project, also support the development of local actions for access to drinking water, such as in the Ban Somphna village where a drinking water supply and sanitation system was built.

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Myanmar

A support project with a regional logic

Meeting with the team of the Director of the "Basin Management" Division

After the regional seminar organized in October 2014 by IOWater and the Loire-Brittany (AELB) and Rhine-Meuse (AERM) Water Agencies in Vientiane, Myanmar wished, like its Laotian and Cambodian neighbors, to develop Integrated Water Resource Management (IWRM) on its territory.

A first exploratory mission that took place in January 2015 gave the opportunity to meet members of the Ministry of Natural Resources and Environmental Conservation and of the Ministry of Transport to present them the principle of institutional cooperation in pilot basins.

The project started in 2016 with two "AELB" and IOWater experts' missions.

The Myanmar project leaders expressed their willingness to dedicate local teams to IWRM implementation in the Pawn-Pilu pilot Basin, an emblematic basin that includes Inle Lake.

The year's program ended with a training that focused on basin management and the implementation of Master Plans for Water Development and Management (SDAGE).

The main topics were the following:

- Evolution of IWRM in Europe, in France and in the Mekong River Basin;
- IWRM prospects in Myanmar;
- The content of a SDAGE and the methods needed for its preparation;
- Preservation of ecosystems;
- The stakeholders' participation in IWRM.

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EUWI+ for Eastern Partnership

A new project to accelerate reforms in the EU's neighborhood area!

The Eastern Partnership (EP) is a joint political initiative launched at the Prague Summit in May 2009.

It aims to deepen and strengthen relations between the European Union and its six Eastern neighbors: Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine.

Water is a key resource for the sustainable economic and social development of these countries in the EU's neighborhood zone.

With major rivers such as the Dnieper or the Kura in the Caucasus, the majority of the water resources in these 6 countries are transboundary, which is a major challenge for regional cooperation based on the transposing of the "acquis communautaire".

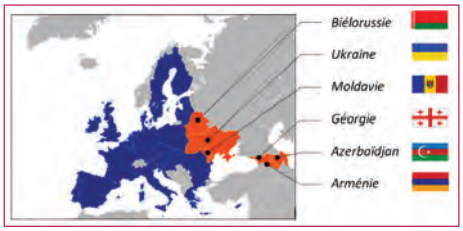
In recent years these countries have demonstrated their willingness to align their water policies with the general principles and requirements of the Multilateral Environmental Agreements (MEAs) and those of the EU's Water Framework Directive (WFD) and other thematic and sectoral Directives on water.

In such a context, **the "European Union Water Initiative Plus for Eastern Partnership Countries" (EUWI+ 4EaP)** was initiated by the European Neighborhood and Enlargement Negotiations Directorate General (DG NEAR) of the European Commission for a 4-year duration (2016-2020).

The task is huge, as it is necessary to reform water sector policies and improve existing regulatory and institutional frameworks.

The project is coordinated with other cooperation initiatives in the field of water and is based on the results and lessons learned from the regional projects already carried out by the EU in these countries in the field of water, "Environmental Protection of International River Basins (EPIRB)" (2012-2016) in particular.

IOWater, on behalf of the French Ministry of Ecology, Energy and the Sea (MEEM), is federating the various French public bodies in the water sector in order to transfer know-how on the development and implementation of River Basin Management Plans (RBMPs), including stakeholder participatory mechanisms on each scale (basin, national, international) and shared data management.



This work is carried out under the auspices of UNECE and OECD, which lead the inter-ministerial process of National Dialogues, and of the Austrian Environmental Agency, leader of the consortium of Member States, in charge of groundwater monitoring and support to laboratory accreditation.

www.euneighbours.eu

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EUWI+
EU WATER INITIATIVE
FOR EASTERN PARTNERSHIP

Ukraine

EU Twinning project on waste management


Kick-off meeting of the twinning project

The EU-funded Twinning Project "Introduction of a management system of Waste Electrical and Electronic Equipment (WEEE) in Ukraine" has officially started at the Ministry of Regional Development in February 2016.

This two-year Twinning project aims at bringing the Ukrainian waste legislation closer to EU standards, in line with the Partnership Agreement, by introducing effective and sustainable collecting and recycling mechanisms, in particular for used batteries and electronic wastes.

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

IOWater, with experts from ADEME in particular, is managing the French input and is transferring its know-how in reform management and training organization for the NGOs and municipalities involved on the new waste treatment process.

The experts are solicited on the overall Ukrainian waste management strategy, including the organization of financial flows, to feed the debates on the transposition of the Waste Framework Directive in the national legislation.

Study visits in Austria, France and Spain were already organized to help the Ukrainian officials to build up their decisions on the waste management system best suited to Ukraine, and on the skills needed for the implementing bodies.

✔

European Commission

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

14th International "EUROPE-INBO 2016" Conference

199 participants from 44 countries © INBO - C. Runel

The 14th Conference of the "EUROPE-INBO"group took place in Lourdes, France, from 19 to 22 October 2016, at the invitation of the French Water Agencies, the City of Lourdes and with ONEMA's support.

It gathered 199 participants, representatives of national administrations, basin organizations, as well as of NGOs, companies, international and regional organizations, coming from 44 countries.

The work of the conference was organized around four round tables which discussed the following topics:

- WFD review for 2019;
- Governance of transboundary basins;
- Adaptation to climate change and resources, scarcity and drought management;
- Knowledge of flood risks, management of aquatic environments and preventive measures in the basins.

Prior to the conference, three workshops were organized on:

- The Programs of Measures under the Peer-Review Mechanism;
- The Smart Water Management Systems, "SAID" project;
- Circular Economy and Wastewater Reuse.

In addition, the EDgE (End-to-end Demonstrator for improved decision making in the water sector in Europe), ADAPT-Climate (European Climate Adaptation Platform) and EcoCuencas projects were presented in side events of the conference.

The WFD review

The WFD is to be reviewed by 2019 and the first challenge is its future beyond 2027, when it is clear that the objective of "Good Status" of Water Bodies will not be achieved in all the European basins at that date.

After an extraordinary meeting of the Water Directors on 6 October, the European bodies and Member States have now started thinking of the issue.

Everyone recognizes the progress made by the WFD, but its implementation should be boosted and its credibility to the set objectives be restored.

At this stage, several factors should be taken into account:

The WFD principles and high environmental goal are now widely recognized.

The investments already made to implement the WFD, both from the point of view of the organization and practical work, should be amortized and sustained.

Integrating the objectives by sector, especially in the areas of agriculture, industry, land management, and the marketing of chemical products remain a challenge.

There are still various real techniques to be defined for "Good Status" and better health of aquatic ecosystems and for reporting the progress made. The principle 'one out, all out' masks the progress actually made.

Finally, adaptation to climate change should start quickly.

The Conference participants considered that a cautious approach to the WFD review should be adopted and, rather than modifying the wording of the WFD itself, it would be better to improve the operational conditions for its implementation with both a pragmatic approach to the objectives set, based on established scientific data, and by integrating its objectives into the other EU sectoral policies (agriculture, energy, transport, marketing of chemical products, etc.).

It is also necessary to take into account the evolution of the global context with the adoption by the United Nations in September 2015 of the Agenda 2030 and of Sustainable Development Goals, and with the adoption, in December 2015, of the Paris Agreement on climate at the end of the COP 21. These two events, which place water at the highest level on the global agenda, must be taken into account in the WFD review.

Water governance in transboundary basins

The EUROPE-INBO Conference participants reminded their wish for effective application of international regulatory instruments - 1992 Water Convention, 1997 Convention, draft article on transboundary aquifers - for better management of transboundary waters.

At the EU level, these instruments are largely taken into account and their implementation is real, but given **the decisive role of the International Commissions in the implementation of the EU Directives,** even beyond EU borders, greater support to these Commissions of transboundary Districts must be considered.

Governance should also aim at better coordination between the WFD, the Flood Directive and the Framework Directive on the Marine Environment Strategy, in transboundary basins and marine areas, including those shared with the riparian non-EU countries.

EUROPE - REGIONAL

19 - 22 October 2016 - Lourdes - France

Adaptation to climate change

As underlined during the COP 21, held in Paris in 2015, we must increase our efforts for properly assessing the effects of climate change on water resources, and appropriate adaptation measures must be decided and quickly implemented in basins.

The Paris "Pact on water and adaptation to the effects of climate change in the basins of rivers, lakes and aquifers" was signed by 359 organizations, and now it is necessary to resolutely take action.

Climate change adaptation projects that have been collected under the "Pact" need to be implemented with the support of donors and governments and knowledge and practices should be widely shared.

The official Water Day of the COP 22 in Marrakech, facilitated by INBO, is a privileged place to discuss the measures to be taken for adaptation in the basins and to exchange on the projects already committed under the Global Climate Action Agenda (GCAA).

The document "Water and Adaptation to Climate Change in Transboundary Basins: Lessons Learned and Good Practices", published by UNECE and INBO in 2015, is a very practical source of inspiration.

In the European Union, the River Basin Management Plans and future Programs of Measures must integrate the adaptation measures taken, with a multisectoral approach to all economic sectors that impact water and river basins and take into account all pressures such as demography, urbanization or agricultural development.

The EUROPE-INBO participants recommended **strengthening Water Information Systems** to include climate change data and monitoring and control systems for correcting plans and programs in real-time, keeping in mind the degree of uncertainty induced by climate change.

The systems to be established must include structural and non-structural measures.

To anticipate droughts

The structural measures concern actions that allow, for example, water saving, reuse of treated wastewater, increased storage capacity in a multifunctional approach.

Natural Water Retention Measures (NWRM) and, more broadly, green infrastructure are favored to improve the sustainable availability of resources.

Such an approach leads to better resilience of the environments and greater flexibility of any existing infrastructure and thus addresses the need for "no regrets" measures imposed by the uncertainty linked to climate change.

At the same time, **non-structural measures have to be taken** to incite users to reduce their consumption, regulate water abstractions, establish a drought crisis management framework and facilitate the society's responsiveness to any extreme water scarcity event.

For better flood management

Better integration between the WFD, the Flood Directive and the Marine Strategy Directive should be looked for.

Coordination between River Basin Management and Flood Risk Management Plans, required during their development, should continue during the whole implementation process, especially in the case of transboundary basins, where cooperation among the Member States themselves and with the neighboring countries should be strenghtened.

The EUROPE-INBO participants recalled that flood prevention can be better achieved by relying on the natural functions of rivers and aquatic ecosystems and by developments that favor the use of wetlands and natural areas for flood mitigation or the dynamic slowing of floods.

More specifically, public policies must aim at the preservation or restoration of the riparian areas of rivers with buffer strips, zones of free circulation of water, flood retention areas...

Mr. Jean LAUNAY was elected President of the EUROPE-INBO Group for the year to come, until the next conference in 2017.

The next two EUROPE-INBO Conferences will take place in Dublin and Seville, in 2017 and 2018 respectively.

www.inbo-news.org

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Closing Ceremony © IOWater - C.Runel

"For facilitating the implementation of the European Water Directives"

Information: Fax: +33 1 40 08 01 45 - E-mail: secretariat@inbo-news.org

Water Framework Directive

Success for the EU Peer-Review Mechanism

The Peer Review process, implemented since September 2014 by the International Office for Water (France-lead partner), together with the National Institute of Hydrology and Water Management (Romania) and the Mediterranean Network of Basin Organization Secretariat (Spain), was achieved in December 2016.

The purpose of this mechanism, supported by the European Commission, was to develop a voluntary and targeted system to allow mutual learning between peers about WFD implementation in Europe.

Sixteen River Basin District Authorities in 11 EU Countries decided to take part in this process and have some specific parts of their River Basin Management Plans reviewed.

Out of 71 candidates, 40 experts were selected to actively participate in the process because of their experience and ability to respond to requests from candidate District Authorities.

All the participants were very satisfied with this mechanism, and the Member State representatives at the Common Implementation

Reviewing mission for the South Baltic District - Sweden

Strategy's Strategic Coordination Group (CIS-SCG) expressed the wish to have it developed over time.

In parallel with the Peer Review missions, specific workshops were organized during 2016 on the topics which received most attention: "Data management", "Groundwater", and "Program of Measures and economic analysis".

These workshops gave the opportunity to gather a higher number of experts in order to discuss more in details these topics and reach an agreement on some key recommendations regarding the implementation of the WFD.

www.aquacoope.org/peer.review

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Comparison of the cost recovery practices used for water services in Europe

Article 9 of the Water Framework Directive obliges the different economic sectors to "appropriately" contribute to the recovery of the costs of services related to water use.

A comparison of European practices was conducted by IOWater as part of its Multi-year Convention of Objectives with ONEMA.

The analyzed countries were France, Italy, Ireland, Poland and the Netherlands.

There is a wide variety of approaches among the studied countries:

For households and industry, revenues cover most of the operating and investment costs. Agriculture on the contrary does not cover its costs, especially its investment costs, except in the Netherlands where farmers pay water at the same tariff as industry.

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A "SIIF" for the Urban Waste Water Directive

Data on Sanitation in Europe

IOWater is developing for the European Commission (DG ENV), a visualization platform for national sanitation data: the "SIIF-UWW", a Structured Implementation and Information Framework applied to the Urban Waste Water Directive (91/271 / EEC).

Launched in 2013, the project developed in several phases that led in 2015 to an online functional platform, tested in 7 pilot countries.

This site not only allows you to visualize data for the reporting of each Member State in the form of maps, tables and statistics, but also to automatically generate national registries, which are files used to make the reporting's evaluation at national and European level.

In 2016, with the new reporting of the Member States, the Commission wanted to use the platform to prepare the evaluation documents for each country and to provide a synthetic view of the situation.

This work is mostly carried out by **the International Office for Water** in collaboration with UBA, VITO and IZvRs.

The creation of 28 national platforms was completed during the 3rd quarter of 2016 and the European platform is itself being finalized.

The "SIIF-ERU" received the Geospatial World Award in January 2017 in Hyderabad, India.

http://uwwtd.oieau.fr

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EUROPE - REGIONAL

INCOVER

Using wastewater potential

Since June, IOWater has been participating in the European INCOVER project, under the 2020 Program for Research and Innovation of the European Commission.

INCOVER (Innovative Eco-Technologies for Resources Recovery from Wastewater) is in a logic of circular economy.

It introduces innovative technologies in wastewater treatment in order to use the latter and recover energy and value-added products.

This project responds to the need to preserve water resources, by promoting its reuse and helps to reduce the operating costs of treatment plants, by recovering byproducts such as biomethane.

I**NCOVER** gathers eighteen partners from seven Member States, some of them are testing technologies in three demonstration plants, treating municipal, agricultural and industrial effluents.

Project kick-off meeting - June 2016
Chiclana Wastewater Treatment Plant - Spain

Biomass production, anaerobic digestion and nutrient recovery systems are thus developed and optimized to obtain byproducts such as bioplastics, fertilizers or recycled water.

A decision making support tool will be developed during the project.

It will enable decision makers to choose a treatment system, optimized according to their type of wastewater, their needs and constraints.

To facilitate the use of these new technologies on the market, **IOWater** is responsible for promoting the project and attracting the interest of target stakeholders (municipalities, elected officials, companies, etc.).

For this, **IOWater** uses its knowledge and experience in communication to disseminate and share information. Various communication media are thus used and a specific website is being created.

INCOVER Partners:

AIMEN Technology Centre, Aqualia, Aarhus University, Universidad Politécnica de Catalunya, Helmoltz Centre for environmental research (UFZ), Future Intelligence, Centre for Recirkulering, Simbiente, Universidad de Valladolid, SolarSpring, Danish Technological Institute, Autarcon, IBET, Renergie, Biotrend, **IOWater,** ISLE, ICLEI.

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SMART.MET

Launching of the new European project on procurement of smart grids

Preparatory meeting of a pre-commercial procurement with market participants

In a context of water resources scarcity and aging infrastructure, public drinking water supply utilities are faced with difficulties in their asset management (maintenance costs, water losses due to leaks or malfunction of the systems).

Faced with this situation, a solution lies in the collection and use of water consumption data, for reducing operating costs, identifying problems and performances, improving the service to users and better prioritizing investments to renew structures.

The aims of the European SMART.MET project are:

- **More effective management of domestic meters through reading and automatic billing;**
- **Leak detection in real-time;**
- **Identification of abnormal behavior and anomalies;**
- **Raising the users' awareness.**

The objective of the European SMART.MET project is to support the development of new technologies for the collection and management of meter data.

It relies on a group of 7 operators of public drinking water supply utilities determined to organize a Pre-Commercial Procurement or PCP:

- Viveraqua - Italy,
- Promedio - Spain,
- Eau de Paris - France,
- SDEA - France,
- CILE - Belgium,
- Vizmuvek - Hungary,
- Hydrobru - Belgium.

These 7 public utility operators will be accompanied by six expert organizations, responsible for assessing technologies, developing the public procurement process before marketing and disseminating the results to other public utilities and to suppliers:

- ARAGON - Italy,
- **International Office for Water** - France,
- University of Limoges - France,
- Fundación Nueva Cultura del Agua - Spain,
- Sara Bedin - Italy,
- Aqua Publica Europea - APE.

The project duration is 48 months, with a budget of 4.4 million Euros, and is managed by the **International Office for Water.**

✔

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

EUROPE

International Committee of the Red Cross

Training of the ICRC's Wathab staff

As part of the policy for upgrading the skills of its Wathab "Water and habitat" staff in the field of water, the ICRC commissioned a new training session at IOWater in 2015.

For over a decade, these training courses have been held regularly at the rate of one per year.

Over a period of two consecutive weeks, they experienced two major developments in recent years:

- **Firstly,** due to the changing nature of the projects run by **ICRC,** sanitation skills are increasingly needed and this led **IOWater** to split the training session into two versions: "water supply" and "sanitation". It is planned to alternate these 2 topics every year.
- **Secondly,** the opening of the Wathab staff to many nationalities implied using English as a working language, thus the training has been conducted in English for two years.

This training, much appreciated by the staff members who attended, is proving well suited to the **ICRC** needs.

Training is practical with information directly applicable at the design, implementation or operation stage.

The practical work is carried out on the educational units of **IOWater's National Water Training Center** that allows for training under real working conditions.

IOWater trainers have a very good knowledge of the economic and human environment through the training, expertise or assistance assignments they carried out abroad.

They have a clear vision of the field constraints; especially in developing countries, they focus on the essential and do not stray into "luxury" or complex and unsuited solutions.

Among the areas of development of these courses we can mention:

- **Providing to ICRC an online training module** that allows the staff members to arrive at the training session with basic knowledge.
- **The development of case studies of the "ICRC kind"** is at the core of this training.

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Croatia

Financial and Operational Performance Improvement Program (FOPIP) for Medjimurske Vode doo

Visit of the Croatian Delegation to France at the Peymenade Public Management Body

Medjimurske Dode doo (MV), a regional water and sanitation company in the Medjimurje county (138 employees), obtained a loan from the European Bank for Reconstruction and Development (EBRD) in December 2012 to finance the construction of new wastewater collectors and a treatment plant for the municipality of Novo Selo na Dravi.

In order to ensure that the new investments are fully integrated and generate the highest level of operational and financial efficiency, the **EBRD** also finances **a Financial and Operational Performance Improvement Program (FOPIP).**

The project, implemented by the **BRL / IOWater** consortium, started in February 2015.

After a detailed analysis of the company's organization and performance, the second year of the project was devoted to the implementation of the following actions defined in the FOPIP:

- A new organization plan for the Company;
- Better procedures for training and knowledge management for the employees;
- A five-year business plan;
- A tariff simulation tool;
- Technical specifications for the creation of a customer service.

A model of public service agreement between the company and the major municipalities was also established, defining the roles, responsibilities, duties and obligations of each party.

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EUROPE – FRANCE

Data Management

"SANDRE" Technical Secretariat

French National Service for Water Data and Common Reference Frames Management

Establishing a common language

Given the proliferation of information systems and the growing need for data, the **"SANDRE"** was created in 1992 to simplify the exchange of these data between the various public and private stakeholders. It thus offers a unique exchange interface and addresses the need to establish a common language between partners from the water world.

Through "SANDRE", many tools are then developed to allow the stakeholders concerned to make their information systems interoperable: dictionaries and exchange scenarios and web services, reference data, a cartographic atlas, a metadata catalogue, audits of computer systems, compliance labels, etc.

"SANDRE" is proposing a repository of more than 25,000 pages of technical specifications and more than 200 datasets. It establishes compliance labels for over 20,000 files per year and more than 30,000 interventions (taxons, substances, etc.). Its website receives more than 800,000 visitors a year.

IOWater has taken care of "SANDRE" Technical Secretariat since it establishment in 1992 and now continues to do so with the support of the National Agency for Water and Aquatic Environments / French Agency for Biodiversity (ONEMA / AFB).

Adapting to the stakeholders' needs

Historically, **IOWater** has made many efforts to publish standards for the exchange of electronic data between computers.

The 2016 edition of the "hackathon" demonstrated to users of the Water Information System (WIS) the progress made especially with the establishment of the "Water Hub". This prototype is based on WIS data complying with **"SANDRE"** standards in the Big Data context.

IOWater led the workshop on sanitation indicators. It also developed a prototype for the use of data on fish quality in another workshop.

In this perspective, **IOWate**r has specified many scenarios in the CSV format since 2015 to improve the exchange of computer data between users, such as the scenario on the knowledge of the physicochemical and microbiological quality of aquatic environments.

A new Atlas has been integrated into **"SANDRE" website.** It allows its users to search in **"SANDRE" geographic repositories,** especially to have access to the repositories according to the topics defined by **"SANDRE"** and **INSPIRE.** For the first time in the history of **"SANDRE",** the user has access to 3-dimensional representation of geographic repositories that have their own quality set.

At the same time, IOWater is beginning to publish the first "SANDRE" methodological notes. This new document aims at improving the management of the data produced by "SANDRE", e.g. a methodological note on the use of the "voidable" character used in **INSPIRE** specifications has been published.

The new "SANDRE" specifications documents now include a QR Code on the front page. This two-dimensional barcode allows, by scanning it, to directly download the document in digital format and possibly its latest version and to subscribe to the evolutions of the document.

In order to better communicate "**SANDRE"** results, the first progress report was published on the website. It reminds the origin of "SANDRE" and the most significant projects (2013-2014). A study is planned every two years.

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.

Following the approximating of **"SANDRE"** and **INSPIRE** models, which was published on "SANDRE" website last year, **IOWater** has set up an online service that allows users to transform a file on watercourses, water police or a file on stations measuring surface and inland water quality into an INSPIRE-conformant file.

➥ Interoperability

IOWater has generalized the identification of the Web resources by URIs (Uniform Resource Identifiers). "SANDRE" geographic repositories are now accessible by **"id.eaufrance.fr"** addresses stored in a new URI-SANDRE catalogue, administered by the "SANDRE" Technical Secretariat.

This is new, the user now has access to the description of each geographical object, such as a dam for instance.

➥ Flood forecasting

With the Central Service for Hydrometeorology and Flood Forecasting Support (Schapi), IOWater has modeled flood forecasting data, which are based on the concept of flood warning entities. The latter corresponds to the geographical scope affected by a level of risk incurred by the population within 24 hours of the date of issuance of the flood warning information.

The data flows of this Web tool are now compliant with "SANDRE".

http://sandre.eaufrance.fr

✔

Information: Fax: +33 5 55 11 47 48 - E-mail: sandre@sandre.eaufrance.fr

EUROPE – FRANCE

Information – Documentation – Digitization

A glossary on water and environments

The glossary on water and aquatic environments is a collaborative tool, developed by **IOWater,** with the support of ONEMA / AFB, which has resulted since 2010 in the pooling of some fifty glossaries, in order to constitute a semantic data model.

It includes about 1,340 terms currently available in French, English and Spanish.

It is also part of the "linked data" movement, which aims to promote the publication of structured data on the Web using semantic technologies.

The current effort is based on linking the terms of the glossary with the concepts of "SANDRE", the Water Thesaurus, Wikipedia articles (DPedia), and those of the GEMET thesaurus of the European Environment Agency.

www.glossaire.eaufrance.fr

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WATERDOC

WATERDOC, the international documentation portal on water proposes services suited to yours needs:

- **Access to the IOWater documentary base:** nearly 282,000 references and full text documents;
- **Solutions for informational watch and research, customized documentary records, summaries on all issues in the water sector** (non-point source pollution, agriculture, aquatic environments, technologies, regulations, socio-economics, etc.).

http://documentation.oieau.org

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IOWater is investing in digitization!

Moodle Platform and Recording Studio

The **International Office for Water** has invested in an LMS (Learning Management System - also called E-learning platform) platform of the Moodle type.

At the same time, in order to produce a digital content, **the International Office for Water invested in a recording studio, recording equipment, adapted editing software and software for producing enriched teaching materials.**

Thanks to these investments, the **International Office for Water** is now able to respond to all requests for distance training, tutorials and digitized teaching supports, on-line training, graphic animation, visits to installations in augmented reality, 360° visits, ...

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IOWater's first digitized training course

After design work carried out in 2015, **IOWater launched this year its first fully digitized training course: "Water potabilization module 1: Usual processes".**

Thus, instead of participating only in a 4-day face-to-face training session with a rather heavy educational handbook, the trainees, distributed according to this new module, are now trained over time during additional learning phases before, during and after the training course itself.

A forum is also available to participants after the training course to allow them to exchange, ask additional questions and have clarifications.

Many other training courses are following this evolution.

✔

A MOOC on the reduction of water losses in supply systems

IOWater has produced a first educational document devoted to **reducing losses in drinking water supply systems.**

Built as a true Massive Open Online Course (MOOC), **this online course, open to all, is available free of charge on the websites of the French Water Agencies.**

It incorporates an introduction in the form of animated comics and then is composed of different scenes with inlays of videos, voice-over and animations.

IOWater, produced two other enriched educational documents in 2016 on the following topics:

- **"Sanitation and wastewater treatment",** on behalf of the International Committee of the Red Cross;

- **"Innovative public markets",** within the European Waterpipp project.

A new digitized educational document is being drafted for raising the awareness of small communities about **the health quality of water intended for human consumption.**

✔

EUROPE - FRANCE

The French National Water Training Center

New educational units

Work near public pipe networks


Other networks during work on water supply systems

IOWater is helping local authorities and companies by training their administrative and technical staff on the management of construction sites and operation of drinking water supply and sanitation systems.

Operators and public works companies are involved on a daily basis in work on pipelines.

The "DT-DICT" regulations (Work order - Declaration of Intent to Begin Work) have been reinforced especially under the impetus of the French Law of July 2010 and the order of 15 February 2012 and many texts published later on.

These new regulations define the procedures for working near networks and obtaining authorization to intervene for contracting authorities and work contractors.

They impose certification requirements for workers who carry out geo-referenced topographic surveys and the detection of networks close to the work to be carried out (drinking water supply systems and sewers, gas, electricity, telecommunications, fibers pipes, etc.).

These texts allowed having a new approach to the work to be carried out and evolving the training of the personnel in charge of this work.

In view of these regulatory but also technical developments, as well as the new regulatory obligations concerning the patrimonial management of networks, **IOWater proposes training activities based on the use of a new specialized educational unit.**

This new tool allows many applications in training courses on issues such as inventory and geo-referencing of underground networks, marking-stacking out, or complementary investigations, with non-intrusive techniques.

✔

A "planted filter" for on-site sanitation

In 1992, the French Water Law imposed a new obligation on local authorities: **the control of new and existing on-site sanitation facilities.** This was followed by many technical and regulatory developments, which led **IOWater** to offer training courses on topics as varied as processes, design, sizing, control, laying out, etc.

The need for training concerns many parties, such as designers, installers, controllers, etc., involved in the various stages of the implementation of on-site sanitation facilities.

In order to meet the needs, IOWater has for many years conceived practical training courses, notably with the creation of an educational unit composed of on-site sanitation processes representative of the different cleaning technologies: on-site water filtration through soil, filtration in a reconstituted solid, activated sludge free culture, fixed cultures, filtration on compact filters ...


The planted filter unit under construction... the reeds grow in the alveoli

IOWater is developing this unit by introducing in a near future a new vegetation filter, used in on-site sanitation.

It will be a planted filter developed by the Aquatiris company, sized for 3 pop.eq, consisting of a vertical filter, a horizontal filter, and an infiltration of treated water.

✔

Information: Fax: +33 5 55 11 47 01 - E-mail: nwtc@iowater.org

EUROPE – FRANCE

The French National Water Training Center

Capacity building for better water management

In line with the COP21, held in Paris in 2015, climate change is now and more than ever at the core of all stakeholders' concerns in the water, waste and environment world: scarcity of resources, increasing catastrophic climate events, increasing anthropogenic pressure, pollution, decreasing biodiversity, etc.

Each professional must integrate these issues into his daily life in order to meet the regulatory requirements and the technical constraints in the design, operation, maintenance, rehabilitation of facilities and preservation of aquatic environments.

At the same time, our world is undergoing a number of social, environmental, economic, dynamic changes that create new needs, new skills and new jobs, but require the effective and operational training of professionals in the field. However, confronted with the economic reality of recent years, private and public stakeholders are faced with budgetary difficulties.

The International Office for Water (IOWater) incorporated this context to design its 2017 training offer, perpetuating the thematic evolutions initiated in previous years and gradually developing its offer of qualifying training.

This year, there are **12 new courses:** quantitative PCR (Polymerase Chain Reaction), bottled waters, smart grids, small common collecting systems in on-site sanitation, wastewater treatment plant operations, sludge treatment, service regulations, certification of phytopharmaceutical products (Certiphyto)...

It has been the same as concerns the conception of the program of the **"IOWater's Water Days",** in which the topics will especially include in 2017: social pricing of water, asset management of water supply systems, transfer of responsibilities in water supply and sanitation, protection of water intakes, etc.

The whole training offer provided by the **IOWater's French National Water Training Center (FNWTC)** is presented in its catalogues under the headings:

- **"Water":** this catalogue presents all the training courses dedicated to the large water cycle and urban water cycle, and all support functions (service management, safety, maintenance, metrology ...).
- **"Water - Irrigation - Agriculture"** is intended for the farming community and irrigators.
- **"Waste - Environment":** this catalogue contains a range of training courses focusing on the collection, sorting, management, organization of services and waste recycling.

In 2016, more than 6,000 professionals, either coming from public services or from the private sector (field workers, technicians, engineers, department heads, elected officials), benefited from training provided by IOWater, either in its unique and permanently renewed facilities in Limoges and La Souterraine, or directly on the installations of its customers in France, in Europe and over the whole World.

To support the evolution of vocational training in France, **IOWater has developed qualification courses and "professional curricula",** and is in the process of **certifying some of these modules,** or integrating training courses as "credits" in the future **"Water Development and Engineering" Master,** designed and realized in collaboration with the University of Sciences of Limoges.

The FNWTC is certified ISO 9001, Version 2008.

✔

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

2016 Training on "Water - Irrigation and Agriculture"

Since 2013, IOWater has been proposing a catalogue specifically addressed to professionals in irrigation and agriculture, with 33 training modules, divided into 38 sessions on the topics:

- **Discovery of the jobs,**
- **Security,**
- **Groundwater,**
- **Irrigation: design and sizing, management, operation,**
- **Natural environments: regulation, management, analysis, restoration,**
- **Water in agriculture: agricultural practices, treatment and reuse of agricultural effluents.**

Precise management of water resources, reuse of agricultural effluents, control of land application ... are matters that require specialized skills and well trained and qualified professionals.

In 2017, **IOWater** is developing its offer for farmers and project managers of the Chambers of Agriculture and proposes **3 new training courses** in its catalogue:

- **Discovery of the agricultural sector,**
- **How to obtain the certification of phytopharmaceutical products (Certiphyto),**
- **Renew its "Certiphyto".**

✔

EUROPE - FRANCE

"Towards our 100,000th trainee!"

The "Water" Catalogue for 2017

The "Water" catalogue for 2017 regroups 341 training programs divided into 467 training courses split into 19 major main headings:

- Discovery of trades,
- Regulation and service management,
- Personal safety,
- Metrology and analysis,
- Drilling and pumping,
- Drinking water production,
- Drinking water supply,
- Domestic systems, health protection and rainwater,
- On-site sanitation,
- Sewerage and stormwater drainage,
- Urban wastewater treatment,
- Treatment of sludge and odors,
- Maintenance, energy, automation and remote management,
- Swimming pool and bathing waters,
- Rivers and water bodies,
- Groundwater,
- Water in agriculture,
- Water in industry,
- Decentralized cooperation.

In 2017, 14 new training programs are proposed in the catalogue.

Q **26 qualifying training programs,** divided into the different headings, are offered. These programs can, upon request, be adjusted to make a customized training program according to the needs, lasting several months or even a year or two.

IOWater continued to digitize its training offer, proposing remotely accessible contents and digitized educational supports in a growing number of modules, including:

- Potabilization of water - module 1: conventional processes,
- Hydraulic study - level 2: pumping and distribution,
- Regulations for stormwater drainage,
- Master Plan on Stormwater Drainage,
- Storage Basins and Alternative Techniques - Module 1: Design and sizing,
- Storage Basins and Alternative Techniques - Module 2: Construction,
- How to obtain the certification of phytopharmaceutical products (Certiphyto),
- Renew its "Certiphyto".


The FNWTC at La Souterraine

The effort also focuses on a modernized pedagogy in the training sequences: animations and exercises in the form of games, scenarios and visits in 3D animation,...

Finally, according to current events, **IOWater** is maintaining the organization of its **"Water Days"** of information, exchange and feedback throughout the year.

During the year, there will also be a 1.5-hour webinar focusing on current topics.

✔

Training on "Waste - Environment" in 2017

In its catalogue "Waste - Environment" 2017, IOWater proposes 52 training programs organized in 60 training courses on the topics:

- Discovery of the "waste" sector,
- Management of a "waste" utility,
- Technical management of waste,
- Treatment and recovery,
- Maintenance and automation,
- Safety at work,
- Environment: air, sites and soils, transportation,
- Sustainable Development.

Q **A new training program** is proposed in the catalogue, as well as **two IOWater qualifying courses,** which can, upon request, be adjusted to make a customized training program.

In its training offer, **IOWater** is developing, at the same time, its skills and its support and training capacities for manual or mechanical sorting operators and industrial maintenance operators. ✔

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

IOWater-FNWTC's complete training offer can be consulted on the website:

www.iowater.org/nwtc

Information: Fax: +33 5 55 11 47 01 - E-mail: nwtc@iowater.org

EUROPE – FRANCE

The French National Water Training Center

On the cutting edge of drinking water quality control


Training in Albi

From 2013 to 2015, the Adour Garonne Water Agency entrusted **IOWater** with the organization of training days for technicians and elected representatives of small communities that have supplied water.

In 2016, **IOWater** was again chosen to lead this program in the Departments located on the territory of the Agency. This exemplary operation was jointly organized and disseminated by the Regional Health Agencies (ARS), the National Public Administration Center (CNFPT), and the Departments themselves.

These days focused on the knowledge of the main elements that allow the supply of good quality water: protection of the resource, basic operations on supply, knowledge of assets and interpretation of analyses.

In 2015 and 2016, the same program, due to its success in Adour Garonne, was developed after a call for tenders on the territory of the Rhine Meuse Water Agency, still with a great success with the Municipalities as the need is great.

Since the autumn of 2016, and for 3 years, a similar program is being carried out by the ARS Provence-Alps-Riviera, throughout the South-East Region.

✔

Training becoming more and more international

The training of IOWater's French National Water Training Center (FNWTC) is attracting more and more foreign students.

In 2016, the **FNWTC** received more than 100 foreign students for its training courses on the catalogue. These water professionals mainly come from:

- **Sub-Saharan Africa** (a strongly increasing number) with countries such as Mali, Gabon, Democratic Republic of Congo, Guinea, Togo, etc.
- **North Africa,** including Algeria as part of the capacity building plan of the staff of consulting firms, but also Tunisia and Morocco.
- **Europe** with Switzerland and Belgium.
- **Haiti** in the Caribbean region,
- **Quebec,** where the first activities began in 2015.

FNWTC is thus increasing its partnerships with public and private organizations from the whole world.

This historic tradition leads to developing more and more profitable cross-activities with **IOWater partners,** often resulting from **Training Plans defined with the Human Resources Development departments:**

- **These training plans partly include training in France.** Technical managers of water companies but also of private enterprises (consulting firms, manufacturers, suppliers) who are trained in France, benefit from the FNWTC's inter-company training: use of educational units, rich exchanges with other participants and development of their contact networks.

  This approach helps to broaden their field of vision and, at the same time, to think up with the **IOWater's trainers** the possibilities of implementing some modules directly in their own country. The French trainees welcome these training sequences with foreign students, perceiving this as an enriching human experience.


Training on pumping in Central Africa

- **These training plans also include intra-company training in the countries.** Using the first step of inter-company training in France, the already trained executives develop, in a second step, **an on-site training on targeted topics to make the greater number of staff members of their company benefit from new useful knowledge,** and this in a context of programs adapted to local needs. **IOWater** ability to develop practical work and case studies directly in the facilities of its foreign partners is a major and widely appreciated asset.

✔

EUROPE – FRANCE

Audits and Studies

EDF

A new testing platform for Chinon Nuclear Power Plant


Test module for the installation of 5 automatons

EDF-Ciedre has decided to acquire a new experimental platform installed on the site of Chinon Nuclear Power Plant, which will allow validation tests to be carried out and to select, among the materials offered by the suppliers, the most reliable water quality measuring automaton and the best adapted to the needs and specifications defined by the Company.

It is designed to test five devices simultaneously to measure temperatures, flow rates, pH, conductivity and free chlorine.

EDF entrusted IOWater with the overall design, sizing, construction and selection of equipment that meets demanding operating conditions and metrological criteria.

The platform is operated by a programmable logic controller.

In addition, IOWater has developed a specific acquisition system under "LabVIEW" environment, capable of automatically collecting, validating and archiving data.

✔

Charente-Maritime "RESE"

Help in subscriber management

"RESE" is the direct management body of the Charente-Maritime Water Syndicate (SDE). It operates drinking water supply in 364 Municipalities and sanitation in 141.

"RESE" has about 145,000 customers in drinking water supply and 70,000 in sanitation.

"RESE" is sending more than 400,000 invoices per year (2 invoices / year / customer).

In 2014, "RESE" decided to replace its old software and find a new computerized solution to manage the entire customer relationship.

The "Anemone" productivity software of the INCOM Company was selected. The commissioning began in 2016 with the establishment of the first invoice of the year.

Harmonization difficulties have arisen in the use of the new software with the Accounting Agency in charge of consolidating receipts and keeping accounts.

"RESE" has wished for IOWater's assistance in finding an optimized solution and in establishing a precise definition of what to expect from the software in these fields.

The mission entrusted to **IOWater** had a threefold objective:

- Audit the practices of the Accounting Agency and propose the necessary adaptations;
- Establish the specifications according to the needs of the Accounting Agency;
- Assist the community in the reliability of financial flows by coordinating the actions of the supplier and of the Accounting Agency.

The solution that has been developed allowed managing all the relations between the customer management service and the Accounting Agency on issues as varied as:

- Processing of unpaid invoices, customer follow-up, triggering of bailiff actions,
- Management of modern means of payment: monthly payment, direct debit at the payment due date;
- Drafting of statement reports and management reports specific to the Accounting Agency,
- The treatment of anomalies.

✔

Advice to industrialists

IOWater is an independent, recognized and experienced partner to advise industrialists and **provide them with an assessment, technical, economic and regulatory assistance, to advise them how to manage their process water, treat and recover their effluents in the best economic and technical conditions.**

Our skills

- **Study of the context:** Regulatory framework - Market study - Bibliographic study (best available techniques, references, documents) - Inventory of research programs.
- **Characterization of effluents:** Sampling and analysis campaign - Analytical methods - Laboratory treatability tests.
- **Assessment / Audit:** Technical and economic recommendations - Tailor-made training and advice.
- **Development of pilot treatment:** Feasibility study - Specifications - Design (descriptive, detailed techniques, plan) - Order of materials, construction, delivery, reception - Realization - Tests (experimental protocols, test conduct and accompanying, interpretation of results).
- **Lasting collaboration:** Qualification, validation of the process - Recommendations, areas for improvement, preliminary design, optimization of operation - Communication - Knowledge transfer & Training.

In 2016, **IOWater** worked on 20 consultancy projects for industrialists.

Our customers in 2016

AREVA, AVEYRON INGENIERIE, CEA, Chevron, CRODA, EDF, EXOFOR, Soufflet, Isigny Ste Mère, PROCAP, Rousselot, Total

✔

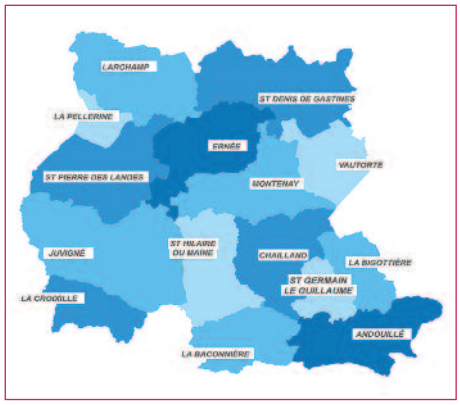
Information: Fax: +33 5 55 11 47 01 - E-mail: nwtc@iowater.org

EUROPE – FRANCE

Audits and Studies for the French Municipalities

Ernée Community of Municipalities

Transfer of "Water and Sanitation" responsibilities



The Ernée Community of Municipalities (ECM) gathers 14 Rural Municipalities in Mayenne and has 20,000 inhabitants.

With the implementation of the new French Law, elected officials decided to transfer the drinking water supply and sanitation responsibilities from the Municipalities to the ECM on 1st January 2018.

IOWater is providing consultancy and expertise to carry out this transfer.

IOWater has thus undertaken to:

- **Define a community service project** to provide good service at the lowest cost;
- **Establish a financial strategy** for the future service, based on the current financial capacities and financing needs of the new service;
- **Propose a gradual convergence of all tariffs for drinking water supply, community and on-site sanitation;**
- **Ensure the legal reliability of the actions needed for the transfer;**
- **Accompany the establishment of the new community service.**

Launched in August 2016 by an analysis of the situation, **IOWater proposed a community project at the end of 2016.**

✔

The Haute Bourbre Syndicate

Optimization of water and sanitation services

The Haute Bourbre Syndicate for Water and Sanitation (SMEAHB) gathers 17 municipalities, manages 7,500 subscribers to the drinking water supply service, 2,700 subscribers to community sanitation and the supplemental users of on-site sanitation.

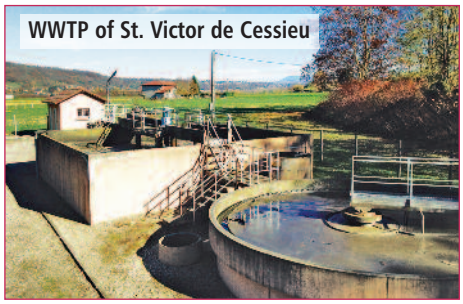
Given the specificities of the territory, the Syndicate manages important technical assets:

- **For DWS:** 27 reservoirs, 16 pumping stations and a network of more than 400 km;
- **For sanitation:** 17 wastewater treatment plants and a sewage network of more than 70 km.

"SMEAHB" mandated IOWater to carry out a functional analysis of its services in order to propose areas for improvement.

IOWater's work, which was carried out over a period of 6 months (February to September 2016), was organized in two phases:

- **Firstly,** a functional analysis of the current operational structures of the Syndicate's drinking water supply and sanitation utility,
- **Secondly,** the drafting of recommendations to promote an organization able to meet the current and future needs of the service in line with its specificities, making its operation more reliable and respecting the level of quality wished for by the users.


WWTP of St. Victor de Cessieu

✔

Vienne-Briance-Gorre Syndicate

Energy efficiency of pumping stations


SVBG pumping station

The Vienne-Briance-Gorre Water Syndicate (VBG) gathers 46 municipalities and is dedicated to the production and supply of drinking water to 91,000 inhabitants.

The **International Office for Water (IOWater) has proposed a support mission for the modernization of the pumping station managed by VBG.**

The purpose of this modernization project is to optimize energy consumption while maintaining optimal operation for mesh and secure supply networks.

IOWater is helping VBG in its technical choices and carries out monthly measurements campaigns on the parameters of energy consumptions, flows and pressures for a period of one year, in order to validate the strategic choices made.

✔

EUROPE – FRANCE

Audits and Studies for the French Municipalities

City of Blois

Establishment of a new water utility


Blois

The City of Blois has decided to return to direct management of its drinking water supply utility.

Aware of the challenges to be met, **the City of Blois wished to benefit from technical assistance from IOWater to help it set up its new utility.**

This assistance was multifaceted:

- **Firstly,** to improve the skills of the staff,
- **Then,** to develop subscriber management software,
- **Finally,** to benefit from a tailor-made advice according to the problems that will arise as and when the drinking water utility is taken over.

Regarding Customer Relationship Management (CRM), **IOWater** provided the following services:

- **Analysis of information processing processes,**
- **Establishment of specifications** for the selection of the supplier,
- **Assistance** in evaluating the solutions offered by the software provider,
- **Participation in strategic meetings,**
- **Advice** on request,
- **Technical and regulatory training.**

This assistance enabled to start as planned, on 1st October 2016, with an operational water service to the maximum satisfaction of its users.

✔

Perpignan-Mediterranean

Direct management of water supply and sanitation services

The Perpignan-Mediterranean Community of Agglomerations "CAPM" has 36 municipalities and more than 260,000 inhabitants.

The gradual transfer of water management from the Municipalities to Perpignan-Mediterranean "CAPM" has led to an important development of its DWSS services.

To help it in this approach, **Perpignan-Mediterranean chose IOWater to:**

- **Carry out the functional analysis of current water supply and sanitation technical services** so as to identify, assess and prioritize its strengths and weaknesses;
- **Propose a short-term action plan** capable of eliminating possible dysfunctions;
- **Identify and define the human resources** necessary to take charge of the missions entrusted to the service;


Perpignan

- **Propose a master plan for the evolution of the organization** capable of covering the current and future needs of technical water supply and sanitation services,
- **Establish a detailed financial audit of the service expenditures and revenues and develop a funding strategy.**

✔

Asset management of drinking water supply networks and structures

An inventory and comparison of asset management tools and an assessment of their inputs and limitations, based on experience feedback, were carried out under the **IOWater** - ONEMA / AFB Multi-year Convention.

In a first step, the contextual, regulatory and technical challenges of the asset management of drinking water supply networks and structures were described at the national level. The asset management tools used were then analyzed.

The advantages and limitations of the asset management approach were highlighted with feedbacks from Local Authorities.

Recommendations for managers were made to amplify the positive impacts of such an approach from an environmental (reduction of water losses), economic and social point of view (customer satisfaction with the quality and quantity of the supplied water, cost efficiency, etc.).

✔

www.iowater.org

The water world on the Web

7,900,000 visitors in 2016!

EMWIS

SEMIDE
EMWIS

Better management of knowledge on water in the Mediterranean

1st SWIM-H2020 Steering Committee - Brussels - September 2016

The WIS, indispensable tool for sustainable water resources management

The establishment or strengthening of **Water Information Systems** is a solution underlined at the COP22 in Marrakech in November 2016.

The Mediterranean Water Knowledge Platform, promoted by IOWater, IME, EMWIS and MENBO, was presented as a pilot action for adaptation to climate change at the COP21 in Paris at the end of 2015.

Mobilization for research and innovation in the water sector

PRIMA, the Partnership for Research and Innovation in the Mediterranean Area, with a provisional budget of € 225 million, is structured around an integrated program for a 10-year period starting in 2018.

A support and coordination action was initiated in 2016 to define the priorities, content and modalities of the calls for projects to be launched.

EMWIS is one of the three partner networks, alongside CIHEAM and EMUNI, for this action.

PRIMA kick-off Conference
Rome - October 2016

Support to European cooperation programs on Water and the Environment

The European Union has renewed its regional cooperation programs in the water and environment sectors in the Mediterranean.

The **EMWIS** Technical Unit is part of the support team of the **SWIM-H2020** program for Sustainable Water Integrated Management and Horizon 2020 Initiative for a Cleaner Mediterranean (2016-2019) for the Southern and Eastern Mediterranean countries.

In 2016, **EMWIS** was selected to be part of the support team, with the Austrian Environment Agency, CEDARE and ZOI, for Phase II of the program for the implementation of Shared Environmental Information Systems (SEIS) in the countries of the European Neighborhood.

Other projects on innovation in the Mediterranean area:

WEAM4i — Water & Energy Advanced Management for Irrigation

Life ANADRY

demEAUmed

SAID — SMART WATER MANAGEMENT WITH INTEGRATED DSS

SWOS — Satellite-based Wetland Observation Service

✔

"EUROMED"

Sharing experience in the Mediterranean in the areas of water and sanitation

EUROMED

Since 2012, the city of Nice and now the Nice Riviera Metropolis (NCA) have been chairing the Euro-Mediterranean Cities Network (Euromed), aiming at sharing innovative practices between the cities of the Mediterranean basin on various issues: adaptation to climate change, urban planning, energy efficiency,...

Under an agreement with NCA, **IOWater** contributed to the action of this network on the theme of water management in order to promote the emergence of effective solutions and the setting up of cooperation projects.

A questionnaire was drawn up to identify the main concerns of the Mediterranean cities and to highlight the best experiences to share.

It emerged that **the drafting of Master Plans for Sanitation and Stormwater Management is a major challenge.** For this, a film was produced to present the stakes, objectives and key steps of the implementation of such a Master Plan.

This film will be available on an exchange platform which will also gather case studies prepared by partner cities of the **Euromed network** and will offer a space for linking communities for the setting up of cooperation projects.

Finally, at the annual meeting of the Euromed Network, **IOWater** was in charge of organizing and facilitating a workshop on water management in the context of climate change, held in Nice on 3 November 2016.

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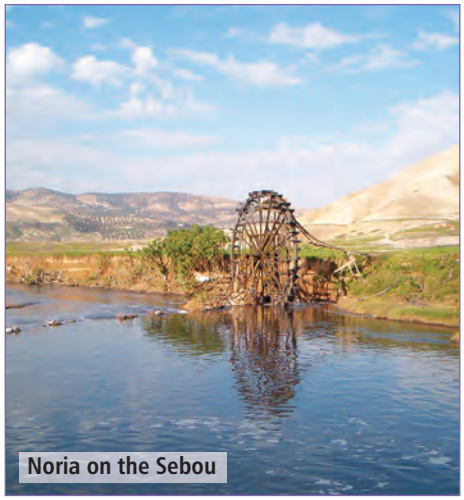
www.emwis.net

Morocco

European Twinning Project on Governance and Integrated Water Resources Management: Working with IWRM!



Noria on the Sebou

The Delegate Ministry for Water at the Ministry of Energy, Mines, Water and Environment (MEMEE) of the Kingdom of Morocco is the beneficiary of **the twinning project on "Governance and Integrated Water Resources Management in Morocco" funded by the European Union.**

France, together with Spain and Romania, has been responsible for its implementation since its start in October 2015.

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

In concrete terms, this twinning project aims at providing the teams in charge of planning in the Ministry with organizational and technical tools, related to the implementation of this Directive, for **the drafting of Basin Management Plans in particular.**

These plans make it possible to coordinate the actions to be implemented, based on a shared vision, elaborated within the Basin Committees, involving all water stakeholders and the population.

The twinning project provides methodological support to the development of a pilot Management Plan for the Sebou Basin.

The actions carried out in this test basin will be capitalized in a guide and by inter-basin working groups so that they can be implemented in the other Moroccan basins.

The mid-term conference on the twinning project took place on 15 September 2016 and allowed assessing the actions carried out in the specific context of the promulgation of a new Moroccan Water Law (36-15).

The twinning project was presented in various side events during the COP 22 in Marrakech, showing how **the Basin Management Action Plans can contribute to the adaptation to climate change.**

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Meeting of twinning experts in Morocco

Ms. Samira El Haouat, Director General of Sebou ABHS at the COP22
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Royaume Du Maroc
Ministère délégué auprès du Ministre
de l'Energie des Mines de l'Eau et de l'Environnement
chargé de l'Eau

SUEZ - France
AGBAR - Spain

In June 2016, the IOWater's National Water Training Center (FNWTC) welcomed for the first time a group of French trainees from SUEZ Water France and Spanish participants from "Aguas de Barcelona" (AGBAR).

This training course focused on the topic of renewable energy in drinking water production and wastewater treatment plants in the context of adaptation to the effects of climate change.

This meeting also aimed at sharing French and Spanish experiences in energy saving and production in the water sector and bringing together the teams of SUEZ Water France and AGBAR.

✔

Tunisia

Support to public water resources management policies for rural and agricultural development (PAPS-Water)

IOWater is participating in the Program for Support to Public and Sectoral Water Resources Management Policies for rural and agricultural development (PAPS-Water) in Tunisia, funded by the European Union, as part of a Louis Berger/ IOWater/ SCET/ CCM Consulting group of companies, led by Louis Berger.

In 2015 and 2016, **IOWater** has worked on the topic of capacity building of Tunisian stakeholders in the field of IWRM, which concerns all the organizations under the responsibility of the Ministries of the Environment and Agriculture. Its role was to organize and coordinate all the training and communication activities carried out under the project and mobilize many short-term experts intervening in different fields according to the expressed needs.

✔

Evaluation of the National Program on Water Saving in Irrigation (PNEEI)

In 1995, the Tunisian Ministry of Agriculture and Water Resources launched the first National Program on Water Saving in Irrigation (PNEEI).

IOWater, in association with SCET Tunisia and Louis Berger, was selected through an international invitation to tender to **evaluate the PNEEI under the Program for Support to Public Water Resources Management Policies for rural and agricultural development (PAPS-Water) funded by the European Union.**

The study has two components:

- The technical and financial assessment at national and regional level (part 1);
- An agro-economic analysis of results on main crops, in standard farms and irrigated areas, supplemented by detailed recommendations for better water use.

A synthesis is also available to decision-makers.

✔

Water saving in irrigation, a necessity to reduce pressure on resources

Towards the establishment of participation and arbitration mechanisms for the Tunisian water sector

The AGIRE project, carried out by **GIZ** since 2013 in the Center of Tunisia, meets the needs of the Water Balance Planning Department of the Ministry of Agriculture and Water Resources to **set up participatory mechanisms and new instruments for water resources planning and monitoring in pilot areas.**

IOWater has been selected to carry out a bibliographic study of international best practices in participation and arbitration in the water sector, used in Spain, Morocco, Mexico and Portugal. It concludes with recommendations adapted to the Tunisian situation.

✔

Study visit in the South-West of France

Upon the request of the Tunisian Ministry of Agriculture and Water Resources (MARH), **IOWater organized, from 21 to 26 March 2016, a study visit on the allocation of water resources in a deficit situation, groundwater management and complex system of interconnected reservoirs in the South-West of France.**

Study visit in France

A delegation, including 13 Tunisian officials from MARH, the Regional Agricultural Development Agency (CRDA), the National Water Supply Company (SONEDE) and the Drinking and Irrigation Water Supply Company (SECADENOR), was received by all the authorities, managers and users of water resources in the Region.

This study visit was part of the process of arbitration of the Nebhana system (Governorate of Kairouan) initiated and financed by **GIZ.**

✔

Algeria

National Environmental Information System

The institutional twinning arrangement between France, Austria and Algeria for the improvement of operational abilities and the implementation of a National Environmental Information System by **the National Observatory of the Environment and Sustainable Development (ONEDD),** was completed in March 2016 after 18 months of work.

IOWater contributed to this project with the choice of indicators related to the water sector, the architecture of the information system, and finally with the establishment of a geocatalogue for the inventory and availability of data.

✔

Palestine

Support to the Palestinian Water and Sanitation Sector

The Capacity Building Program for the Palestinian Water Sector is funded by GIZ and supervised by the Palestinian Water Authority (PWA).

IOWater is part of the ICON/IOWater/GCT Consulting consortium, which was selected to implement this project.

The objective is to improve the skills of the personnel of the Palestinian drinking water supply companies, in terms of technical mastery but also of good management.

Two long-term experts are mobilized in Palestine to coordinate actions, and trainers from the Mediterranean region and from **IOWater** are mobilized to carry out the training in Arabic.

The main activities of this project are:

- Analysis of the existing and sector-specific training offer;
- Identification of the training needs and proposal of an adapted 2-year training plan;
- Realization of thematic training courses;

Staff of Palestinian water services

- Organization of seminars and study visits;
- Support to the Palestinian Union of Water Supply Services in its actions for the capacity building of water company staffs.

In 2016, this project carried out several training sessions on various topics, such as customer management, management and maintenance of drinking water supply and sewerage systems, search for funding, use of sludge, etc.

Workshops for exchanges among Palestinian water and sanitation services were also organized, so that they can share their problems but also their successes and thus facilitate the emergence of easily adaptable solutions.

✔

Implementation of training sessions

Equipment of sludge treatment facilities Nablus WWTP

As part of the decentralized cooperation activities of the French Adour Garonne Water Agency and of projects of the French NGO HAMAP, **the IOWater's National Water Training Center (NWTC) has conducted since 2013 several training sessions every year in Palestine and in its centers in France on topics such as the design and operation of wastewater treatment plants, in order to improve the skills of the Palestinian Water Authority (PWA) and of Palestinian municipalities.**

As a continuation of this collaboration, while the number of wastewater treatment plants is increasing significantly in Palestine, **IOWater** carried out two training sessions in Ramallah in August 2016, on:

- **Sludge treatment** and impact of sewage systems on the operation of wastewater treatment plants;
- **Choice and sizing of wastewater treatment plants** (primary treatment, activated sludge, biological discs, membrane biological reactors, reed bed filters, trickling filters).

✔

AGENCE DE L'EAU ADOUR-GARONNE

Support to the water reform

As part of a wide-ranging institutional reform project in the water sector, launched in December 2009, **the Palestinian Water Authority (PWA)** has contracted with PricewaterhouseCoopers (PWC) to help it in implementing the planned reforms.

PWC entrusted the **International Office for Water** with:

- **The revision of the Transboundary Water Resources Management Strategy** prepared by PWA in 2013;
- **The proposition of different possible scenarios** for the creation of transboundary water management institutions;
- **The development of tools for an overall Water Demand Management Policy (WDM),** which will show the benefits of such a policy and give orientations for a management plan as well as an implementation method taking the constraints into account and relying on a list of alternative indicators for monitoring.

✔

سلطة المياه الفلسطينية
PALESTINIAN WATER AUTHORITY

Analysis of the corrosion and odor problem in a sewerage system

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

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International Office for Water - 21, rue de Madrid - 75008 Paris - FRANCE
Tel.: +33 1 44 90 88 60 - Fax: +33 1 40 08 01 45 - Email: iowater@iowater.org - Web: www.iowater.org