

# ANNUAL REPORT 2019



**CAPACITY BUILDING FOR BETTER WATER MANAGEMENT**

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# WELCOMING MESSAGE

**Y**ou have hereafter the OiEau's activity report in its "new formula": a new graphic identity, a new organization of the sections, more space given for our partners' words. It reports on a particularly dynamic year 2019 for all our professional activities.

Our unique range of skills is at the service of a wide variety of partners and customers, in France, in Europe and around the world. As part of the major international environmental objectives, such as the Sustainable Development Goals or the Aichi Biodiversity Targets, the OiEau's missions have been based since the beginning on our operational culture and our capacity for innovation.

Today, the increasing use of digital solutions, for training or knowledge improvement, the setting up and implementation of complex, multi-stakeholder, transboundary projects, the relationships forged at high level in many countries, our ability to mobilize national and international networks in response to the challenges of the present, such as climate change or the preservation of biodiversity, illustrate the active participation of OiEau in the evolution of French and international techniques and debates.

This past action is now subject to the new view imposed by the international health crisis at the time of writing this message. Because the COVID-19 epidemic and its human and economic consequences impact not only the OiEau projects and its functioning, but above all the life of several billion people on the planet. Our values and our missions, it seems to us, will emerge strengthened, because sustainable water resource management will itself emerge confirmed as a vital necessity everywhere on the planet.

How can we always better mobilize useful human skills, as closely as possible to needs? How to better share information? How to further strengthen the robustness of organizations? How can we better cooperate internationally? How can better water management contribute more to the recovery of the environment? So many renewed challenges to which OiEau is ready to make its contribution in the world of today and tomorrow.



**Pascal BERTEAUD**  
President



**Eric TARDIEU**  
Managing director



# OiEau in brief

## CREATION

The International Office for Water was established in 1991. It was born from the merger of 3 organizations: the Water Institute or Water Foundation (Limoges); the International Training Center for Water Resource Management (Sophia Antipolis) and the French Association for the Study of Water (Paris).

## MAIN OBJECTIVE

Development of skills for better water management in France, Europe and around the world.

## STATUTE

Non-profit Association under French Law. State-approved by Decree of 13 September 1991.

## WORKFORCE & LOCATIONS

Nearly 140 employees spread over 4 locations in France. 45,000m<sup>2</sup> of educational units in Limoges and La Souterraine (France).

## FUNCTIONING OF BODIES

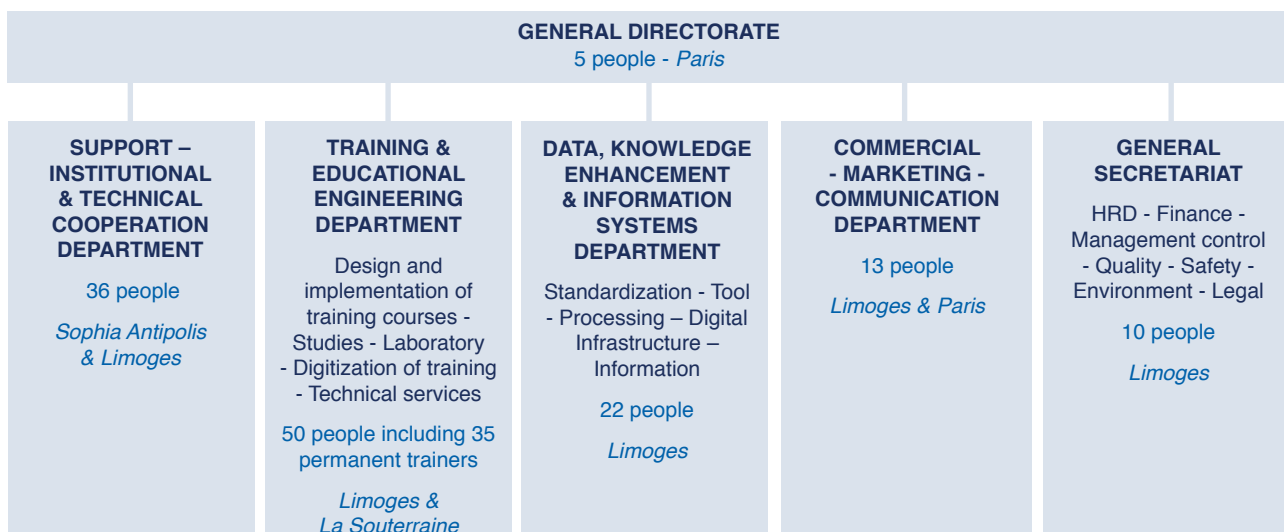
The **Board of Directors** is made up of 28 members representing various types of structures: international organizations, the French public sector, federations of local elected representatives, research institutions, private companies, representatives of French Ministries (Foreign and European Affairs, Agriculture, Foreign Trade, Ecological and Inclusive Transition, Industry, Health). Their appointment is pronounced by their respective colleges in a General Assembly. In 2019, it met on 13 June. The meeting of 19 December was postponed until January 2020, due to a transport strike in France.

The Board of Directors convened two **extraordinary General Assemblies** on 30 April and 13 June. An **Ordinary General Assembly** also took place on 13 June.

The **President**, Mr. Pascal BERTEAUD, represents the Association in all acts of civil life.

The **Managing director**, Mr. Eric TARDIEU, was appointed by the Board of Directors on 1<sup>st</sup> July 2017.

## ORGANIZATION OF THE TEAMS



# OiEau around the world

## 27 EU countries

|                |         |             |          |
|----------------|---------|-------------|----------|
| Austria        | Denmark | Ireland     | Poland   |
| Belgium        | Estonia | Italy       | Portugal |
| Bulgaria       | Finland | Latvia      | Romania  |
| Cyprus         | France  | Lithuania   | Slovakia |
| Croatia        | Germany | Luxembourg  | Slovenia |
| Czech Republic | Greece  | Malta       | Spain    |
|                | Hungary | Netherlands | Sweden   |

## 6 Mediterranean countries

|         |         |           |
|---------|---------|-----------|
| Algeria | Lebanon | Palestine |
| Egypt   | Morocco | Tunisia   |

## 6 European countries outside the EU

|            |         |         |
|------------|---------|---------|
| Armenia    | Belarus | Moldova |
| Azerbaijan | Georgia | Ukraine |

## 1 country in North America

Canada

## 10 countries in Latin America & the Caribbean

Bolivia  
Brazil  
Chile  
Colombia  
Cuba  
Ecuador  
Haiti  
Mexico  
Peru  
Suriname

## 24 countries in Africa

|                          |                              |                   |
|--------------------------|------------------------------|-------------------|
| Angola                   | Democratic Republic of Congo | Mauritania        |
| Benin                    | Equatorial Guinea            | Niger             |
| Burundi                  | Gabon                        | Nigeria           |
| Burkina Faso             | Guinea                       | Republic of Congo |
| Cameroon                 | Guinea-Bissau                | Rwanda            |
| Central African Republic | Kenya                        | Senegal           |
| Chad                     | Madagascar                   | Tanzania          |
| Côte d'Ivoire            | Mali                         | Togo              |
|                          |                              | Zambia            |

## 10 countries in Asia & Central Asia

|          |            |
|----------|------------|
| Cambodia | Malaysia   |
| China    | Thailand   |
| Laos     | Vietnam    |
| Myanmar  | Kazakhstan |
| Nepal    | Kyrgyzstan |

**&**  
**150**  
partner organizations

## FRANCE Mainland & Overseas

All mainland Regions  
Guadeloupe  
Guyana  
Martinique  
Mayotte  
New Caledonia  
Reunion



## OUR VALUES

OiEau is a non-profit and State-approved association. The people's general interest is at the core of its practices, regardless of the type of activity carried out or partnership established. In 2019, all employees reaffirmed the common values that drive us.

The favored values by order of importance:

- 1  
**General interest & Public utility.**
- 2  
**Independence & Neutrality from private interests.**
- 3  
**Innovation & Performance.**
- 4  
**Pride in implementing skills.**
- 5  
**Protection of the Environment and Biodiversity.**
- 6  
**Sense of knowledge sharing & networking.**
- 7  
**Participatory water management for inclusion of all stakeholders.**
- 8  
**Interculturality & Openness to others.**

\* Survey conducted from 06/25 to 07/05/2019.

## OUR MISSIONS

OiEau covers small and large water cycles. It puts its technical, operational, institutional, legal and strategic expertise at the service of all water stakeholders. And this, at all levels, from a local authority up to national and transboundary policies.

### In the field of Water and related activities, OiEau aims to:

- **Facilitate exchanges** between decision makers, designers, managers, industrialists, trainers, researchers and users concerned, to better face their problems together, coordinate their actions and disseminate their information.
- **Develop skills and partnerships** between French and foreign public and private organizations.
- **Carry out projects and programs of common and collective interest** to better meet the demands and needs of the International Water Community.

### OiEau carries out its missions:

- **Worldwide**, as part of cooperation projects on the different continents.
- **In Europe**, to promote a concerted approach to the management of water resources and aquatic environments, on a continental scale.
- **In France**, to strengthen and multiply the actions of various public and private stakeholders in the sector.



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# OUR AREAS OF EXPERTISE

IN FRANCE AND WORLDWIDE



Continuing training for water and environmental professionals.



Use of water-related knowledge & information systems.



Technical and institutional support – Cooperation.



Networking of water stakeholders.

# OUR PRIORITY STRATEGIC ORIENTATIONS

1

Supporting Public Policies in France.

2

Being a vector in the changes in the water sector.

3

Strengthening the international dissemination of our skills.

INTERNAL DEVELOPMENT

Develop stronger synergies between our 4 areas of expertise



# THEY TRUST US

A large variety of French and international partners and clients request OiEau to design and implement projects combining one or more of our 4 areas of expertise.

## French & Foreign Institutional Stakeholders

In France, OiEau is a partner of general interest for ministries and their operators, such as the French Agency for Biodiversity, under the supervision of the Ministry of Ecological and Inclusive Transition, and the Ministry of Agriculture and Food.

These missions are linked to the management of environmental data, to their promotion through their dissemination, to the facilitation of stakeholder networks, to the participation in and organization of events (COPs, World Water Forum).

OiEau champions the French model of water management, its values and accomplishments.

At the international level, OiEau regularly supports, in cooperation with French institutional stakeholders, all kinds of water resources management structures, either international (Transboundary River Basin Organizations), national (Ministries in charge of water), regional or local, for better governance based on integrated resource management in river basins.



## Donors - Development Agencies

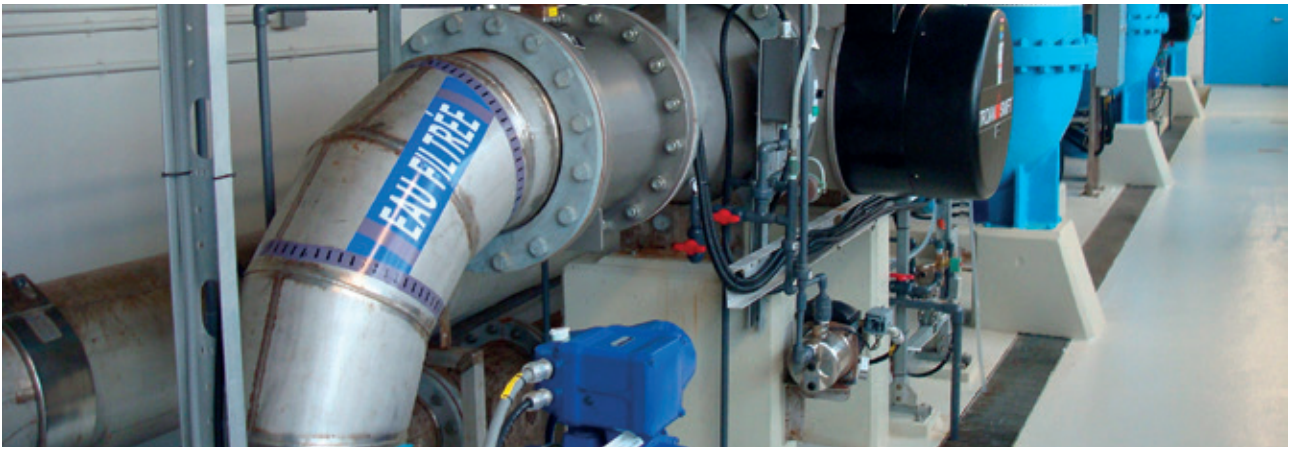
Privileged funders of international actions, educational engineering or technical and governance support, institutional donors and their beneficiaries find in OiEau a broad and multidisciplinary spectrum of expertise, adapted to sectoral skill development programs for water and sanitation services or Integrated Water Resources Management.

The French Development Agency, German or Swiss cooperation, UNICEF, the World Bank, African Development Bank, Inter-American Bank, European programs... allow us working on very diverse projects (creation of sectoral training structures, development of project incubators, design of national technical regulations, Information Systems). Our associative values allow us facilitating consultation with NGOs...

## Water Agencies (WAs) - Regional Health Agencies

Loyal partners and sponsors, the WAs and the Regional Health Agencies, use the OiEau's expertise on attractive and topical issues (training on water health security management plans, development of training platforms on nature-based solutions). The WAs also support us in organizing and monitoring international cooperation activities on all continents.





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## Industrial leaders

**C**hemical, agro-food industries, major energy stakeholders initiate strong environmental, energy and ecological transitions. Technical expertise, technological and regulatory watch, specialized job skills training, support for innovation through the establishment of OiEau-developed, built and operated pilot and test units for new techniques, are among our usual activities with these industries.

## Private and public operators - equipment suppliers & distributors

**T**hey are the historical customers of vocational training in the water, sanitation and waste sectors. The quality of short continuing training courses, the evolution towards multi-modal (blended-learning) and digital training, the evolution of the themes covered allowed, over the years, quick returns on investment in continuing and professional training. Long-term partnership agreements are thus signed with these essential stakeholders.

## Scientific partners

**F**rench and European public research institutes, universities, Resource and Transfer Centers are partners in innovation projects carried out by the European Union. We find our place there as coordinator or technical partner and in dissemination of innovation. The creation of a "living-Lab" on our technical sites also allows, with renowned scientific partners, to study the functioning and the efficiency of new processes.

## Stakeholders in higher education and research

**O**ur skills in vocational training, competent use of technical educational tools and pedagogical engineering capacity are recognized and sought for by those involved in basic-qualifying or work-linked training. Pooling effective means of acquiring technical skills has become a challenge in responding to the Vocational Training Reform in France. Among the fields of activity of the OiEau Training Center (IWTC): collaborative agreements and jointly developed work-linked qualifications.

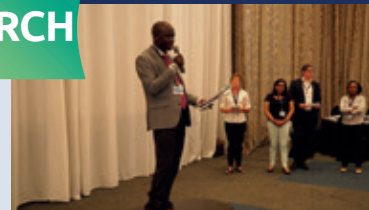
# SOME 2019 HIGHLIGHTS

30 - 31  
JAN



**LOCAL WATER  
MANAGEMENT  
EXHIBITION**  
*Rennes - France*

4 - 8  
MARCH



**AFRIALLIANCE  
STEERING  
COMMITTEE**  
*Accra - Ghana*

30 SEPT  
3 OCT



**INBO WORLD GENERAL  
ASSEMBLY**  
*Marrakech - Morocco*

26  
SEPT



**MEETING OF FRENCH-  
SPEAKING TERRITORIAL  
LEADERS**  
*Limoges - France*

10 - 11  
OCT



**PARTICIPATION IN SOPHIA  
BEARHDAYS**  
*Sophia Antipolis - France*

26 - 27  
NOV



**STEERING COMMITTEE OF  
THE EUROPEAN "EUWI +  
EAST" PROJECT**  
*Paris - France*

**25  
APRIL**



**STEERING COMMITTEE  
OF THE CHINA - EUROPE  
WATER PLATFORM**

*Budapest - Hungary*

**16  
MAY**



**VISIT OF THE MINISTER FOR  
WATER AND SANITATION OF  
BURKINA FASO**

*OiEau in Limoges & La Souterraine -  
France*

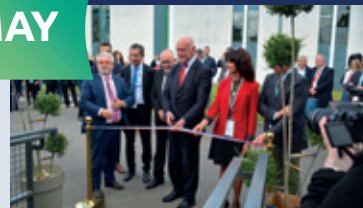
**20 - 21  
JUNE**



**KICK OFF MEETING OF THE  
9<sup>TH</sup> WORLD WATER FORUM**

*Dakar - Senegal*

**29  
MAY**



**INAUGURATION  
OF THE NEW OiEau DIGITAL  
FACILITIES**

*Limoges - France*

**11 - 13  
DEC**



**SHF (FRENCH HYDROTECHNICAL  
SOCIETY) - UNESCO CONFERENCE  
ON "DROUGHTS, LOW WATER  
LEVELS AND WATER DEFICITS"**

*Paris - France*

# INSTITUTIONAL AND TECHNICAL SUPPORT - COOPERATION

In this field of expertise, OiEau aims to provide strategic and operational assistance to modernize the governance of water management in hydrographic basins, at local, regional, national and transboundary level in France and in the world. The promotion of new and truly sustainable development and the integration of all stakeholders are at the core of our practices.



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« *The entire world is interested in the experiences developed in France and in Europe. OiEau listens to all stakeholders to understand their specific problems, analyze legal, institutional, cultural issues, etc., in order to offer responses adapted to the context. OiEau facilitates the real implementation of actions which are in line with the Sustainable Development Goals.* »

**Ms Laronde**

Director - Institutional and Technical Support Cooperation Department - OiEau

**In 2019, 110 ongoing cooperation projects were:**

**A wide range of expertise:**

- **Audit - Consulting**
- **Networking of stakeholders**
- **Assistance to the contracting authority**
- **Implementation of regulations**

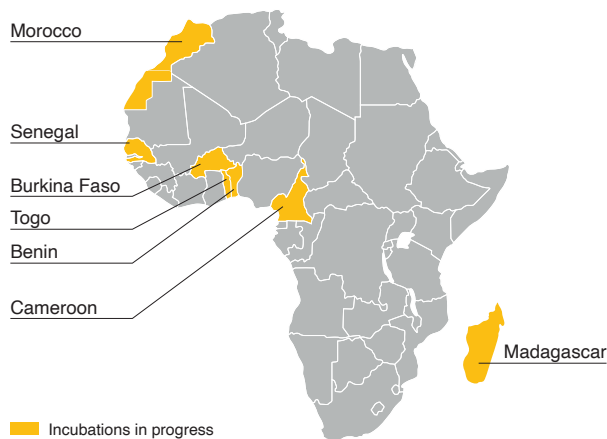
- **Establishment of Information Systems, etc.**

...and used by many stakeholders: ministries, local authorities, water and sanitation utilities, national and transboundary basin organizations, donors, beneficiaries, etc.



# "100 Water & Climate projects for Africa"

Since 2017, OiEau has been involved in the "100 Water & Climate projects for Africa" initiative, resulting from the incubation platform of the Global Alliances for Water and Climate established to bridge the gap between donors and project leaders.



In 2019, OiEau thus supported 11 field operators, in cooperation with stakeholders, to transform their ideas into innovative and large-scale projects, eligible for climate funds: this is the "incubation" goal.

With the financial support of the 6 French Water Agencies and the New Aquitania region, they will prioritize the use of Nature Based Solutions (NBS).

**« By supporting this incubator in Madagascar, the Rhone-Mediterranean-Corsica Water Agency (AERMC) wishes to mobilize Climate Funds to increase the resilience of ecosystems and guarantee the sustainability of populations' access to good quality water. » M. TOURON, International manager - AERMC.**

## The European Water Framework Directive (WFD), a benchmark for States that are not members of the European Union

With the European Union Water Initiative + (EUWI +), an EU-funded project, Armenia, Azerbaijan, Georgia, Moldova, Ukraine and Belarus, are moving towards applying the main WFD principles. They therefore opted for integrated management to protect and share water resources, with a view to sustainable development.

Austria and France are implementing this ambitious project with the Organization for Economic Cooperation and Development (OECD) and the United Nations Economic Commission for Europe (UNECE). Thus, the Austrian Environment Agency and OiEau, on behalf of the French Ministry for Ecological and Inclusive Transition, help in the strengthening of governance and technical

know-how of the various national public bodies in the water sector. At the end of 2020, 8 of the 11 pilot basins will have their 1st Management Plan.

This cooperation helps consolidate expertise, institutions and joint action between stakeholders, while carrying out awareness-raising activities for the general public.

**« The European Union Water Framework Directive is used all over Europe to implement river basin management. This is a policy document for Georgia. » Ms Makarova, Ministry of Environmental Protection and Agriculture – Georgia.**



The fundamentals of a management plan. ©OiEau

# Brazil: Public Private Partnerships (PPP) in the water and sanitation sectors



Regulation of urban solid waste in PPPs in Brazil: Participants of the closing training session © MDR, SPPI

The privatization of public services is often presented as being THE solution. However, the PPP allows keeping control of the public service, by delegating management to the private sector.

The French Development Agency therefore decided to finance (via the Technical Expertise and Exchange of Experience Fund - Fonds d'expertise technique et d'échanges d'expériences- FEXTE) a technical cooperation program in Brazil, as part

of a partnership between the Brazilian and French Ministries of Finances.

Implemented by "Expertise France" and coordinated by OiEau, it aims to improve the governance of PPPs at the municipal level. It also supports the development of infrastructure projects in the following priority sectors: urban solid waste, water, sanitation, street lighting and urban mobility.

OiEau is coordinating the mobilization of Brazilian and French partners and helping capitalize on the precious lessons learned from this project.

**« This partnership has enabled the launching of two feasibility studies for street lighting and sanitation projects. This study on waste regulation is the first in this field, offering solutions to sectoral, financial and legal issues, local taxation, and intermunicipal cooperation. » Ms Devidal, Expertise France.**

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## From participatory planning to real achievements: the case of the Stung Sen in Cambodia

Since 2012, the Cambodian Ministry of Water Resources (MOWRAM) has been developing a pilot project in the Stung Sen River Basin, a tributary of Tonle Sap Lake, benefiting from technical assistance from OiEau and funded by the French Loire-Brittany and Rhine-Meuse Water Agencies.

According to **Mr. LIM Puy**, Vice-president of the Tonle Sap Authority, **« the project is in its infancy, the river basin was chosen by the members of the basin committee, its characterization allowed identifying the issues related to water use and priorities: access to drinking water, risks linked to droughts and floods and environmental protection. »**

So practical actions have been carried out by NGOs, including 7 drinking water production

plants funded by the French Water Agencies.

In 2019, the 4<sup>th</sup> phase of the project began with the goal of assessing, with the basin committee, the activities undertaken in the 2016-2020 period and initiating a new planning cycle.



Mr. Lim Puy, Vice-President of the Tonle Sap Authority © TSA

# Pilot facilities & tests: at the core of the partnership with INRAE

As part of the Oriented Pipe Renewal Project, OiEau provides its leak detection unit and enriches it with new functionalities to meet the needs of the "Water Stewardship in Structures" team INRAE Bordeaux (new sections, calibrated leaks, instrumentation structure to study the effectiveness of reducing water losses, etc.).

INRAE Bordeaux has entrusted OiEau with the establishment of a mobile pilot facility on a trailer for quantifying water leaks, to carry out field tests.

INRAE Montpellier commissioned OiEau to modernize its Platform for Research in Science and Technology for Irrigation: improvement of the test bench dedicated to measuring water distribution under irrigation sprinklers. 4 modules produced by OiEau in 2015 were completed by new ones, manufactured and tested by our technical services, then delivered and put into service in Montpellier. Mobile and connected via WiFi to a supervisor and coupled with additional measurements (drop size, wind speed and direction, spraying rate, etc.), they allow an industry to characterize

the water distribution of its irrigation sprinklers according to ISO 15886-3.

It is the largest measurement bench of this type in the world!

**« We appreciated the availability, the multidisciplinary expertise as well as the quality support provided by OiEau throughout the construction of our bench. » Mr. Froment, Technical Manager of the Platform - INRAE Montpellier.**



Measurement bench during test . ©OiEau

## Inter Laboratory Tests (ILE): an increased partnership with AGLAE



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In 2019, OiEau and AGLAE (Association Générale des Laboratoires d'Analyses et d'Essais - General Association of Analysis and Testing Laboratories) combined their resources and expertise to organize the 1<sup>st</sup> ILE samplings in all types of water.

These tests were carried out in La Souterraine, at the OiEau training center, supplemented by tests in the municipal swimming pool and wastewater treatment plant and in the Saint-Pardoux Lake.

The OiEau site has real capacities for taking samples while meeting many constraints: access authorizations, beaconing, personal protective equipment, equipment, representativeness of sampling points, in situ measurements, coordination of the various stakeholders. These ILEs gathered French and European participants (Germany, Belgium) and revealed various practices depending on the participants, while demonstrating that the differences were not significant.

Other ILE projects are in preparation, with the objective of a biannual frequency, as from 2020.



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# Our Technical Support Missions in the Industrial Sector



In 2019, industry once again actively requested OiEau to carry out technical support assignments for optimizing water treatment processes.

Requests came from a wide diversity of sectors such as energy, metallurgy, chemistry, paper mills and food processing industry.

The needs were also most varied: they covered strategic issues as well as operational expertise and advice, even research and development (tests and pilot units), and obviously skill assessments and the design / implementation of training plans.

In 2019, OiEau thus studied the more economical and sustainable use of water resources (reuse, etc.), Natural Water Retention Measures, or even Eco-engineering, Nature-Based Solutions, life cycle analyses for various companies.

More commonly, expertise and advice include analysis of malfunctions, regulatory changes, diagnostics of the design of treatment units and their operation, technical and economic optimizations (reagents, energy, etc.) or the characterization of effluents (hard COD, etc.).

## Three examples of missions in 2019

### **VOLVO TRUCKS**

#### **A problem:**

- Savings in water and reagents at the source & additional treatment of effluents for water recycling.

#### **Actions:**

- Diagnostic of the wastewater treatment plant;
- Characterization of in and outflow effluents;
- Recommendations on the best available techniques.

### **TOTAL Group**

#### **Operational and decision support tools:**

- Methodological guide for water REUSE with creation of a decision support matrix;
- Tailor-made monitoring tool dedicated to water issues related to the Group's activities;
- Water data management in connection with the Group's geographic information system.

### **EDF**

#### **Ecocombust project**

#### **A problem:**

- How to give a second life to coal power plants? A more virtuous energy production model for generating electricity from biomass and waste wood.

#### **Actions:**

- Bibliographic search;
- Treatability tests;
- Customized training;
- Technical support;
- Recommendation report.



# IWRM, at the core of the OiEau - French Water Agencies' international cooperation



Integrated Water Resources Management (IWRM) is the process promoting coordinated development and management of resources (water, soil and associated) to maximize economic and social benefits, without compromising the sustainability of vital ecosystems

IWRM is based on the stakeholders' real appropriation of a project, of three tools: governance, regulation and knowledge management to jointly protect resources and meet the needs of the population.

Convinced of IWRM effectiveness in France and in the world, OiEau and the Water Agencies (WAs) have made it the core of their international partnership. Thus, in 2019, with the financial support of the WAs, OiEau continued its role as a strategic operator in South America, Africa and South East Asia, by supporting 16 projects for the implementation of the IWRM model.

In a spirit of cooperation and experience sharing, the WAs make available to OiEau their technical expertise on issues such as Nature-Based Solutions, sustainable funding mechanisms and local planning tools.

This relationship of trust between OiEau and the WAs allows continuous communication on

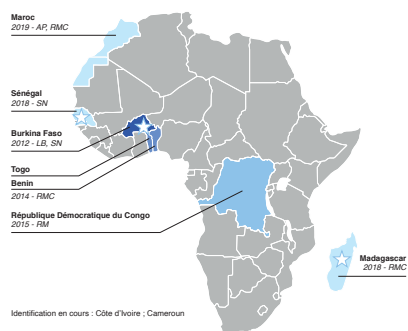
the progress of projects and, above all, the multi-country capitalization of the knowledge acquired, for a collegial dissemination of good practices.

**« IWRM can - and must - use new tools for monitoring environments and the impact of human activities which, today, benefit from new technical and scientific possibilities. In addition, the involvement of the civil society in the consultation process about water use guarantees a long-term sustainable development of the territories and promotes local democracy. Also, IWRM must involve people in their daily lives and use their knowledge of the environment for the benefit of water resources and the community. In addition, the transversality and interdependencies between public energy and food policies must be highlighted and addressed by inter-ministerial approaches. Prospective visions and shared challenges of climate change can be good levers to promote these links. »** Mr. Choisy, Managing director - Adour-Garonne Water Agency, and reference for the international action of the Water Agencies.

## 2005-2019: Long-term institutional partnerships

### Africa

7 partner countries



### Latin America

6 partner countries



### South East Asia

3 partner countries



# DEVELOPMENT OF KNOWLEDGE AND WATER INFORMATION SYSTEMS

Information has encountered and is still encountering deep changes linked to the advent and the quick evolution of new technologies. This revolution is accompanied by great challenges: the challenge of collecting, processing and enhancing data; challenge of knowledge sharing and transfer; challenge of the establishment, management and interoperability of Information Systems and other digital media... And above all, the challenge of making them decision-making tools for good governance of water resources and their environment. OiEau, established 29 years ago from the merger of 3 organizations including the French Association for the Water Study, has accompanied these changes and is today at the forefront of innovations to meet the needs of stakeholders in public and private sectors, in France and worldwide. In a spirit of general interest, OiEau is committed to producing collective intelligence, a real source of performance and creator of value.

« *OiEau is daily facing the challenges of data management, e.g. when providing the Permanent Secretariat of “SANDRE” \*. In addition to the technical and operational aspects, we know that this tool is a vector for sharing and promoting knowledge, for better water governance. We are doing here a work of public utility.* »

**Ms Debray,**  
Geomatics specialist - OiEau

\* See page 23

## A wide range of expertise

- **Audit - Analysis – Advice.**
- **Modeling, design, installation and hosting of IT tools.**
- **Capitalization and dissemination of intellectual contents.**
- **Strategic watch.**
- **Thematic platforms. Multilingual terminology bases.**
- **Production of educational tools: enriched book, videos...**
- **Stakeholders networking.**
- **... used by a wide variety of stakeholders: ministries, local authorities, water and sanitation utilities, etc.**

# Information Systems for the control of wastewater treatment in the European Union

Wastewater is a major source of pollution of fresh and marine waters and a risk to health and the environment. For more than 5 years, OiEau has supported the European Commission (EC) in the modernization of the Information and Data Processing System Websites per country, a linked European site and a set of functions for standardizing and automating part of the processing have been established.

The Urban Waste Water Treatment Directive of 21 May 1991, known as the UWWT Directive, requires Member States of the European Union to ensure that agglomerations are equipped with a system for collecting urban wastewater and that these waters benefit from appropriate treatment before their discharge into the environment.

Every two years, these States must provide the EC with data on the sanitation situation. In the event of non-compliance, these data are used in infringement procedures.

In 2012, the Commission called for modernizing the water information system to target compliance with European water Law and make access to data and results easier.

To meet this challenge, OiEau has developed the UWWTD SIIF (Urban Waste Water Treatment Directive - Structured Information and Implementation Framework) web tool. It allows processing and disseminating the data collected from Member States in order to show the status of the Directive implementation, for each European country, agglomeration and treatment plant. OiEau produced the Country Situation Assessment Report and the European synthesis, for the 10th report in 2019.

Today, SIIF is mainly used by the EC and the government departments responsible for reporting. Tomorrow, it could allow collecting data directly from the operators of wastewater treatment plants, to view other associated data, such as the register of discharge authorizations, and is to be generalized to other Directives.

<https://uwwtd.eu/>

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## EMWIS: water governance and knowledge sharing in the Mediterranean

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

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

In June 2019, the workshop on achieving the Sustainable Development Goal on Water (SDG6) in the Mediterranean concluded that it was necessary to integrate the NWIS into the official production of indicators.



© UpM

**« Only political decisions based on data can have a long-term impact in the Mediterranean region. »**  
Mr. ABADI, DG - Water & Environment Division - UfMr.

# The reference portal

[www.documentation.eauetbiodiversite.fr](http://www.documentation.eauetbiodiversite.fr)



Since its establishment, OiEau has focused its expertise on the sharing of knowledge drawn from documentation, which is entirely digitalized today. This activity is fully in line with the will of the public authorities to give a wider scope to Science and an easier, copyright-free, reusable and interoperable provision of public documentary resources.

The tools developed by OiEau include the Water and Biodiversity Partnership Documentary Portal, established in 2009 with the support of the French Agency for Biodiversity (OFB). Centralizing more than 86,000 scientific and technical documentary resources, and regularly enriched, this Web portal is a benchmark in terms of sharing with very diverse audiences (mainly documentation professionals, researchers, engineers, technicians in the fields of water and biodiversity). This grey literature, free of copyright, comes from more than twenty organizations with varied know-how and expertise (Water Agencies, Ifremer, INRAE, Pôles relais, Parc national des Ecrins, Parc national de la Réunion, BRGM, Water Boards), federated in a network with OFB and OiEau joint facilitation.

A new identity and a more fluid layout of the portal's home page were established in 2019. Thanks to close collaboration between these contributors, the selection and promotion of some documents were optimized. For example, a new service allows users to customize their own document selections.

In view of the portal's transition to the era of interoperability and Semantic Web, document meta-data have been the subject of an in-depth work. An intelligent and dynamic link with the "Water and aquatic environments" glossary has been set up in the various portal's documentary records. Likewise, a link to the thesaurus was made possible.

Any visitor can thus benefit from reliable and expert-validated definitions on water-related issues.



**86.856**

documentary records



**57.936**

linked documents

**2.000**

followers to  
Twitter account



**27**

contributors

**9 thematic**

zooms  
published



**655**

scoops on the Scoop.It  
page of the network



# Towards Local Water Observatories



When the European INSPIRE Directive on the dissemination of geographic information (2007), the French Digital Law (2016) and the General Data Protection Regulation (GDPR) of 2018 encourage, even oblige, French public authorities to integrate digital technologies for knowledge sharing, OiEau provides them with technical and operational support to comply with these regulations.

In the context of the French national digital transformation, local authorities, and especially inter-municipal syndicates, are increasingly faced with the challenge of managing and harmonizing their information systems, dedicated to responsibilities in the water and sanitation sector, either being community or on-site systems

In addition, the "NOTRE" Law of 2015 (New Regional Organization of the Republic) accelerates the transfer of "Water and Sanitation" responsibilities to groups of municipalities.

These new responsibilities require that these groups use reliable information systems that jointly meet their needs and the expectations of their users.

With its 30-year experience in this field, OiEau regularly supports local services in the structuring and organization of these information systems as well as in the development of interoperability and knowledge sharing actions.

For example, in 2019 OiEau worked with the Besbre Valley SIVOM (Allier), the Vienne Water SIVEER (Vienne) and, the Alsace-Moselle Water and Sanitation Syndicate in developing their respective information system, based on 4 major issues:

- **Scientific mediation and knowledge sharing**
- **Analysis and use of data**
- **Data organization and software package development**
- **Documentation and Information monitoring.**

Local authorities are increasingly aware of the importance of having a consistent and reliable Information system in their area OiEau makes its national experience available to these local authorities.

**« In a context of digital transformation on a regional or local scale, especially impelled by the NOTRE law in France, OiEau has the skills needed for good management of digital data on water and its environment. OiEau is supporting all water stakeholders - local water syndicates in particular - in setting up information systems based on knowledge capitalization and exploitation. Expert knowledge developed over more than 25 years in France and abroad. »** Mr. Meunier, Director - Data, Knowledge and Information System Department - OiEau.

# Kazakhstan - Kyrgyzstan: shared management of Chu-Talas

In some transboundary river basins, such as those of Chu-Talas, shared by Kazakhstan and Kyrgyzstan, the distribution of water resources is particularly sensitive and can become a source of tension.

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

While drawing on the skills and processes of the institutions involved, the actions led by OiEau contributed to the digitalization and automation of data sharing and use. Access to information for decision-makers in each country has thus gone from exchanges via telephone and fax to consultation on a tablet of data and indicators on the resource and water abstractions.

As **Mr. Nurbek**, Deputy Director of VodkhozRBO for the Chu Basin in Kyrgyzstan, says: « ***The actions carried out by the project make our lives easier for resources management and decision making as regards their allocation.*** »



Kyrgyz expert using online tablet maps. ©OiEau

## The OiEau experience acclaimed at the 1<sup>st</sup> Global workshop on data exchange in transboundary basins

Transboundary basins are home to over 40% of the world's population. Data sharing is therefore essential for effective cooperation.

At the end of 2019, representatives from more than 70 countries gathered at the United Nations headquarters in Geneva for the 1st Global Workshop on this issue.

It was organized by the United Nations Economic Commission for Europe (UNECE), with various partners, such as the International Network of Basin Organizations (INBO), whose permanent secretariat is provided by OiEau. It was opened by **Ms Algayerova**, UNECE Executive Secretary, who recalled how data exchange is « ***a prerequisite for developing a common understanding of the status of transboundary waters.*** » and that « ***we must build together a stronger resilience to climate change, based on factual data and scientific goals.*** »

The recommendations presented by INBO relating to the necessary organizational adaptation of data sharing to the objectives, tasks and capacities of basin organizations; the crucial importance of relying on effective national information systems and the essential development of synergies between stakeholders at local, national and transboundary level in data production, management and development were particularly appreciated.



4 and 5 December 2019 - Geneva: Workshop organized with the World Bank, the World Meteorological Organization.

©OiEau

# SANDRE repositories extended to the marine environment and biodiversity



OiEau has provided the Technical Secretariat of SANDRE (National Service for Water Data and Common Repositories) since its establishment in 1992, today with the support of the French Agency for Biodiversity (OFB). Its role is to define a common language and the framework for exchanging water data as a fundamental component of knowledge.

SANDRE intends to resolve technical constraints, allowing water stakeholders to disseminate water data, making the later usable and comparable. Thus, the contributors massively feed the French Water Information System (WIS), defined by the National Plan for Water Data, aquatic environments and public water and sanitation services (SNDE), revised in 2018.

In 2019, in collaboration with the PatriNat mixed service unit (Natural Heritage), IFREMER, the Forum of Atlantic Marshlands (Forum des Marais Atlantiques - FMA), the Federation of Conserva-

tories of Natural Environments (FCEN) and INRAE, OiEau worked on the SANDRE repositories, applying them to new Information Systems on Marine Environment (MEIS) and on Biodiversity (BIS). These repositories define the acquisition of data on wetlands, coastal water quality and biota chemistry.

Significant work with the National Institute of Geographic and Forestry Information (IGN), the Water Agencies and the BRGM was also carried out to develop the new French hydrographic reference system. At the same time, OiEau with the Navigable Waterways of France (VNF) and the Central Service of Hydrometeorology and Support for Flood Forecasting (SCHAPI) specified the data of the hydraulic networks related to hydrometry and vigilance on flooding.

Finally, OiEau has launched new services enabling citizens to contribute, online, to the construction of the SANDRE repositories.

## Key figures in 2019:

# 1,036,463

Number of indexed objects



User satisfaction

# 44,882

Number of certificates issued

## Re-certification of ISO 9001:2015

# STAKEHOLDERS' CONTINUING TRAINING ON WATER, SANITATION, WASTE AND ENVIRONMENT

In a context of climate change, water pressure is constantly increasing, the quality and quantity of water supplies are degrading, and the environment is usually heavily impacted. At the local level, under the aegis of political leaders, professionals in these sectors are the first involved in the efficient management of this vital resource and in the protection of their areas. The development of their skills and knowledge is therefore a central assignment of OiEau, which thus participates in the operational sharing of solutions, and and the citizens who compose those. Our training programs are continuously adapting to the reform of vocational training and to new events: improving system yields, health security, biodiversity, pollution control, governance of services, etc.

« *OiEau is committed to constantly innovating on emerging topics and using means such as technological learning platforms and HI-TECH tools. Professional gestures on these platforms and the development of educational materials in the form of tutorials or courses integrating animations, videos and interactive documents for example, allow us meeting varied expectations.* »

Mr. Gachelin  
Permanent trainer – OiEau.

+ 40 years  
of experience

35 permanent  
trainers

 350  
training programs

& 600  
sessions per year

6,000   
people trained per year

 All levels:  
workers, technicians,  
executives

 Face-to-face,  
distance and  
digital training

45,000 m<sup>2</sup>  
of educational units for  
work situation scenarios



# Development of a technical and scientific partnership with Frans Bonhomme

For almost 15 years, OiEau has been training staffs from the private Frans Bonhomme Group, the French leader in distribution specializing in public works, outdoor development, on-site sanitation and in the building sector.

These theoretical and practical training courses are intended for various profiles, such as sale - warehouse operators, sedentary or itinerant sales representatives, point of sale managers, sales managers, area managers, etc.

Many of them take place in the educational units of OiEau Training Center, thus allowing staff to work in actual situation.

In 2019, OiEau and Frans Bonhomme worked together to define a reinforced partnership, in order to split practical training courses between the two entities. An important joint decision was taken on this occasion: to jointly start the production of digitized modules.

This joint work resulted in the signing of a Framework Convention defining the outlines of this new technical and scientific cooperation, in the fields of water, sanitation, ecological engineering, aquatic environments, biodiversity and circular economy, in February 2020, in the new DWSS Frans Bonhomme unit, in Châteaubourg, near Rennes.



Signing of the agreement by Eric TARDIEU, OiEau's DG and Pierre FLECK, President of the Frans Bonhomme Group. ©OiEau

**« The Frans Bonhomme Group is very pleased with this partnership with OiEau. Skill improvements and professionalization of teams are the key points of our strategy, in order to provide our customers with the best expertise in all of our jobs. »,** said Mr. Fleck, President of the Frans Bonhomme Group.

**« I am delighted with this scientific and technical partnership between two complementary structures in their skills and know-how in the fields of water, sanitation, biodiversity and circular economy. I salute the opportunity it represents in terms of development of face-to-face and distance training adapted to learners of all levels, of efficient and innovative educational engineering and of advice that meets the expectations of various stakeholders such as local authorities, public and private operators and industries. »,** added Mr. Tardieu, OiEau's MD.



OiEau educational units for "Drinking water supply systems" and "Sewage systems". ©OiEau

# Digital Training: OiEau, a key in the field

Since 2015, OiEau has integrated the digital challenge in one of its historical expertise, training.

We use the latest technologies and cutting-edge innovations to offer new training formats, going beyond the traditional face-to-face.

## We propose

### Blended-learning training

Face-to-face combined with distance training sessions, to mobilize learners before and after these sessions and optimize time, face-to-face.

*« I was able to make my specific requests known to the trainer beforehand. He thus adapted the training content to my needs. »*

Ms B – Consulting firm

### 100% digital training



Accessible online, from our e-learning site or on customers' websites, with password access.

### An e-learning site\*

Launched online in 2015, where all our digital contents are made available to our learners, before, during and after their training session.

\*Usable on computer, tablet, smartphone...

### Contents in various formats

Produced by our team of dedicated professionals. At the instigation of OiEau, or to respond to specific requests from customers or partners.

#### • The enriched book - e-book\*



This dynamic support allows you to integrate menus, various media (video, audio), many animations and interviews in order to deal with an issue in a didactic and non-linear way. Disseminated in a digital version and available as files, it can be downloaded and stored for reading on a screen.

\*See p31 the enriched book on "Water catchment areas"

#### • Online training - e-learning



©OiEau

All documents (videos, quizzes, articles, etc.) and media are gathered on a website to allow the trainee's distance learning at his convenience.

#### • The virtual visit



©OiEau

Thanks to cameras with a 360 degrees view, accessible via virtual reality headsets, we can, for example, visit installations in the water sector (catchments, pumping, drinking water treatment, wastewater treatment, etc.). *« The virtual visit is a real contribution to discovering facilities that are not commonly accessible or distant from the training site. An experience always highly appreciated! »* Mr. Gachelin, Trainer – OiEau

#### • Filmed tutorials:



©OiEau

Videos of our trainers during the showing of complex technical gestures are shared in order to provide advice and concrete and precise explanations. *« After the face-to-face training, I was able to independently review the technical gestures from my workplace. »* Ms R., Water Syndicate

#### • Face-to-face training, filmed and broadcast



©OiEau

Live or accessible via streaming, from the digital classrooms of our Training Center. *« This allowed me to follow an interactive live training course while avoiding travelling far from my home and my family. »* Mr. J – Association of municipalities.

# OiEau educational expertise developed at international level

Since its origin, OiEau has been developing its educational engineering skills in France and all over the world. In 2019, OiEau implemented three projects in Algeria and Haiti with financial support from the French Development Agency (AFD).

## In Algeria

An audit and support mission to the National Institute for Equipment Improvement (INPE), in partnership with SEURECA, the Mediterranean Water Institute and the ISGP company.

### Our services

- Audit of the training activity and training of INPE executives.
- Definition of training equipment.
- Implementation of a quality approach.
- Creation of an information space.
- Definition of the strategic positioning of the INPE in Algeria and abroad.

« *OiEau's capacities and know-how in the field of training on water and the quality of the deliverables produced* are promising [...] and allow us to foresee a follow-up into real projects. », declared **Mr. DAMECHE**, Managing director of INPE.



Training on "Management of Water Training Centers" at INPE. ©OiEau

A technical support mission to the Algerian Water Training Center, in partnership with the Marseilles Water Company.

### Our services

- **5 educational kits:** asset and client management, desalination...
- **3 practical work handbooks:** drinking water production, layout of pipe networks, etc.
- **4 training sessions** for trainers in Algeria



©OiEau

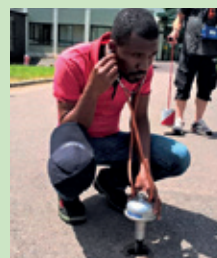
## In Haiti

In 2019, the "Youth Employment Competence" project for the National Vocational Training Institute of Haiti (INFP), in which OiEau is involved with CRESFED, has taken a decisive step.

For 3 weeks, trainers from the Pilot Center for Vocational Training in Port-au-Prince (CPFP) were trained in France, in our Training Center in Limoges. They were able to take full advantage of our unique educational units.

### This partnership has also enabled the production of:

- 11 modules for continuing education.
- 4 basic training courses.
- 5 draft projects for educational units.
- Identification of training partners in Haiti.
- 1 funding and build-up plan for the water training sector.



Practical work in OiEau educational units by CPFP trainers . ©OiEau



# Mali: A long-term operational cooperation

Initiated in 2014, the close cooperation between OiEau and the Malian Drinking Water Management Company (SOMAGEP) has helped this national company to implement solutions to meet the major challenges related to the supply of drinking water in Mali. The development of the skills of water stakeholders and the supply, operation and maintenance of innovative and high-performance equipment are at the core of the established system.

## A Learning Platform to Meet Multiple Needs

As part of an OiEau donation to SOMAGEP, the first learning platform dedicated to the operation of variable speed drives was installed in January 2020, by an OiEau trainer. At the same time, 4 future internal trainers were trained in facilitation techniques and in the use of this didactic bench, allowing learning in real working situation. The engineers decided to use this platform as a test bench and to diagnose the problems encountered by operators. This complementary use provides effective remote assistance solutions for service continuity in a country where traffic is complex.

Several SOMAGEP objectives have thus been achieved: meeting urgent needs for operating new plants and training their workforce, which has doubled in 4 years.

After several months of implementation, OiEau will audit the current and future trainers, and the certification of their skills.



## Tripartite cooperation in insecure areas

Several SOMAGEP centers are located in areas that are sometimes isolated, where insecurity is an additional challenge to be met, both for the technical assistance of the Central Directorate and for the development of know-how to better exploit and keep the systems operational.

Thanks to the historic partnership between OiEau and the International Committee of the Red Cross (ICRC), an emergency training plan was developed. The ICRC provides its know-how and resources to ensure the logistics and the organization of sessions in priority centers identified by SOMAGEP. OiEau designed training modules on the topics of drilling, pumping and maintenance.

A test session including 2 modules (drilling and pumping) that was carried out in November 2019 allowed validating the model and refined the sizing of this unique project, for the next sessions.

Without the partnership logic that underpins it, this program, which is unmatched at present in Mali, would not have been possible.



Since 2014, 48 training sessions were carried out and 587 people were trained in Bamako; 16 sessions and 35 people were trained at the OiEau training center in Limoges - La Souterraine ©OiEau



# Permanent investments to optimize our educational units



OiEau educational units are a major asset for working in actual situation, integrated in many of our training courses. They are constantly adapting to the technological changes.

In 2019, thanks to the support of the Loire-Brittany and Adour Garonne Water Agencies (WAs), OiEau is continuing the renovation of its unit dedicated to the treatment of wastewater by activated sludge to meet the new challenges of energy efficiency, the removal of micropollutants, advanced purification, in order to achieve treated water qualities compatible with the reuse of wastewater for irrigation and discharges into sensitive bathing areas.

It was supplemented by tertiary treatments (mechanical filtration on a filter drum, UV disinfection, ultrafiltration, filtration on a bed of activated carbon), sensors, automata, remote management equipment and energy meters, for the optimization of the energy consumption.

OiEau is continuing to build its capacities on stormwater management, thanks to a unit presenting various alternative techniques: ditches, trenches, porous pavement, floodplains, permeable paving, green roofs, etc.

## Views of the “Stormwater management” educational unit



©OiEau

## Views of the educational and testing unit for treatment by activated sludge



©OiEau

# FACILITATION & DEVELOPMENT OF NETWORKS OF WATER STAKEHOLDERS

Since its establishment, OiEau has developed a French and international network of partners and customers with varied profiles: ministries, international organizations, local authorities, water and sanitation utilities, national and transboundary basin organizations, industries, research centers, donors, universities, etc.

This is why, OiEau has been entrusted over time with the facilitation or the technical secretariat of a dozen communities, both in France and in Europe or at international level.

Our role? Sharing and enriching information and experiences on common themes, setting up projects, jointly organizing events. Sharing is at the core of our values of general interest to enable participation, creativity, efficiency and innovation, on a collaborative basis.

« *Organizing professional networks is part of our DNA! OiEau facilitates the sharing of experiences and the emergence of field projects, coordinates the production of collective expert work or organizes events to promote and disseminate best practices. It is a real added value for our members.* »

**Mr. BOINET**  
Project Manager - INBO\*

\* See page 32

## Facilitated networks in which OiEau participates

- Network of documentalists contributing to the Water and Biodiversity partnership documentary portal (see p. 20)
- Network of facilitators of SAGE and environment contracts (see p. 31)
- Network of Water Catchment Area stakeholders (see p. 31)
- Network of stakeholders in watercourse conservation and restoration
- Water in the City, the community aid service for issues related to drinking water, collective and on-site sanitation
- Network of stakeholders in wetlands
- AWIS, the Pan-African portal for Water Documentation and Information)
- International Network of Basin Organizations (INBO - see p. 32)
- Global Alliances for Water and Climate (GAfWaC)
- OECD Water Governance Initiative (WGI)
- Global network of pilot basins working on climate change (UNECE / INBO)
- International Network of Water Training Centers (INWTC)

# An enriched book to learn all about the protection of drinking water catchments

In France, many activities and regulations are implemented to improve or preserve the abstraction of drinking water. OiEau regularly contributes to this issue\*.

In 2019, we published an original educational and interactive tool which, drawing on various media (videos, audio, animations), illustrations and testimonies received from stakeholders, provides information on approaches to protecting catchments.

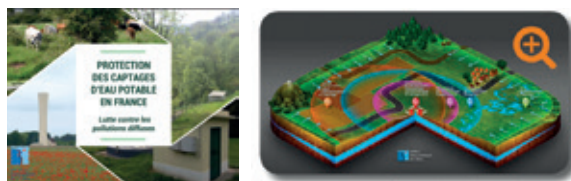
This tool aims to clarify and disseminate essential knowledge for better preservation of water resources: protection devices, regulations, committed stakeholders, available tools, etc.

Produced with the financial support of the French Agency for Biodiversity (OFB), this book is in-

tended for stakeholders, directly or indirectly involved in the preservation of water resources in France. It offers various levels of reading depending on the reader's knowledge of the issue.

Available in English, it can be viewed and downloaded free of charge from <https://aires-captages.fr/livre-enrichi>.

\*This book is the second of this kind produced by OiEau, after the enriched digital book on the 2017 "SAGEs" accessible on: <https://www.gesteau.fr/actualite/un-livre-numerique-enrichi-sur-les-sage>



Various catchment protection zones

## OiEau is facilitating the community of SAGE stakeholders and environment contracts

While the 2019 French Water Conference encouraged the implementation of Water Development and Management Plans (Schémas d'Aménagement et de Gestion des Eaux - SAGE), OiEau has actively participated in the facilitation of the network of stakeholders involved in these integrated water management tools, through its Gest'eau Resource Center, with the support of the French Agency for Biodiversity.

The main objective of Gest'eau is to help SAGE facilitators. It thus offers a range of resources, centralizes information from each SAGE and local contracts in order to allow having an overview on the French national scale. It promotes links between facilitators through the sharing of experiences and web conferences.

**« Gest'eau gathers all the guides and tools needed for facilitating the SAGEs. It also allows exchanges with other facilitators in order to enhance their experiences and simplifies access to the productions of other SAGEs to draw good ideas from them. » Ms Guigo, Facilitator of the "SAGE" of Marque-Deûle - Nord-Pas de Calais.**

193 "SAGE" information sheets

288 sheets environment contract

2,900 subscribers to the "Gest'eau" Newsletter

9,300 documents

2 400 followers. Twitter account @gesteau

890 subscribers to the "GEMAPI" Newsletter

"SAGE" situation map © Gest'eau





# The International Network of Basin Organizations (INBO)



Established in 1994, INBO has 192 member organizations, based in 88 countries and organized into 7 regional networks.

OiEau has provided its Permanent Technical Secretariat (technical and institutional support,

training, data and information systems) since the beginning.

INBO main task is to promote Integrated Management of Water Resources (IWRM) and aquatic ecosystems as well as the strengthening of basin organizations to meet the challenges of biodiversity conservation, sustainable development and adaptation to climate change.

To fulfill this task, INBO is developing exchanges of experience and twinning projects, organizing events and implementing partnerships (e.g. OECD on water governance; UNECE on transboundary cooperation and adaptation to climate change).

## 2019 Highlights

### The World General Assembly - Marrakech International Summit on Water Security

30 Sept. - 3 Oct. - Marrakech (Morocco)

400 participants from 62 countries, including 10 Ministers, shared their experiences in basin management. The addressed issues were: international and transboundary cooperation, rural development, adaptation to climate change and funding.

The INBO 2019-2021 action plan, comprising 7 priorities, was adopted during a statutory session:

- Water information systems.
- Adaptation to climate change.
- Strengthening of governance.
- Intersectoral coordination and environmental conservation.
- Increasing the city-basin dialogue.
- Participatory basin management.
- Development of partnerships.



Transfer of the INBO World Presidency (2019-2022) from Dr. Barrios Ordoñez (CONAGUA, Mexico) to Dr. Amara, Minister for Water of Morocco.



© Riad TABIBEN - RIOB

### The Europe-INBO International Conference

17-20 June - Lahti (Finland)

150 participants from 30 countries gathered for a better implementation of the European Water Directives: revision of the Water Framework Directive, recovery of water quality, sea-basin interface, sustainable agriculture, etc. Proposals were presented to the European Commission at the end of the conference.



Mr. Jokelainen, new Finnish President of Europe-INBO: **"Transboundary cooperation will be a priority of this mandate"**



Group work and debate - Workshop on Nature-Based Solutions. © RIOB

### General Assembly of the African Network of Basin Organizations (ANBO)

INBO actively participated in the General Assembly of the African Network of Basin Organizations (ANBO), 2-5 July in Tunis.

- **Themes:** groundwater, climate change and funding.
- **Challenge:** defining a roadmap for an action plan 2020-2024.



The President of ANBO, Mrs. Enaw, was reappointed. ©ANBO



# Spatial hydrology: an innovative data collection tool



Since 2014, OiEau has been leading, with the French Development Agency, a working group on spatial hydrology for monitoring water resources by satellite, gathering the National Center for Space Studies and the Research Institute for Development.

In this context, a first phase of cooperation was initiated in 2016 with the International Commission of the Congo-Ubangui-Sangha Basin (CICOS) and AFD support, for monitoring the Congo River. The work undertaken has allowed establishing, with the BRLi consulting firm, a Hydrological Information System as well as post-activity services with the “Compagnie Nationale du Rhône” (National Rhone Company).

Hydrological monitoring of rivers is fundamental for the sustainable management of water resources and associated ecosystems, especially in the context of climate change. However, in some regions of the world, the hydrometric stations are few and often tend to decline, especially due to their geographic isolation and maintenance cost.

Measuring water depths by satellite (spatial altimetry), with increasingly fine resolutions, therefore appears to be a promising technology to supplement field data.

**« Being aware of the challenges linked to knowledge of the resource, the working group on spatial hydrology is responsible for reconciling scientific and technical visions with the users’ needs, especially in regions most vulnerable to climate change. Our group now extends its activities to other basins such as those of the Niger and Senegal rivers. The working group draws on French expertise and gathers the following institutions: AFD, CNES, IRD, INRAE, CLS, CNR, BRLi and OiEau. »** Mr. Brachet, Executive assistant - OiEau



Virtual stations showing water depths measured by satellite in the Congo Basin accessible from the CICOS HIS (May 2019). ©OiEau

## Short-term prospects for spatial hydrology, seen by Mr. Maisongrande - Land & Hydrology Program Manager - CNES

*“The global monitoring of water resources is a major societal challenge for which space techniques have a determining role to play. The French-American Surface Water Ocean Topography mission planned for 2021 will aim to collect the needs of hydrologists in a single satellite and will provide a compendium of hydrographic data unprecedented on a planetary scale”.*



15<sup>th</sup> Meeting of the working group on spatial hydrology for future activities in the Niger and Senegal River Basins (Paris, 12/10/2019). ©OiEau

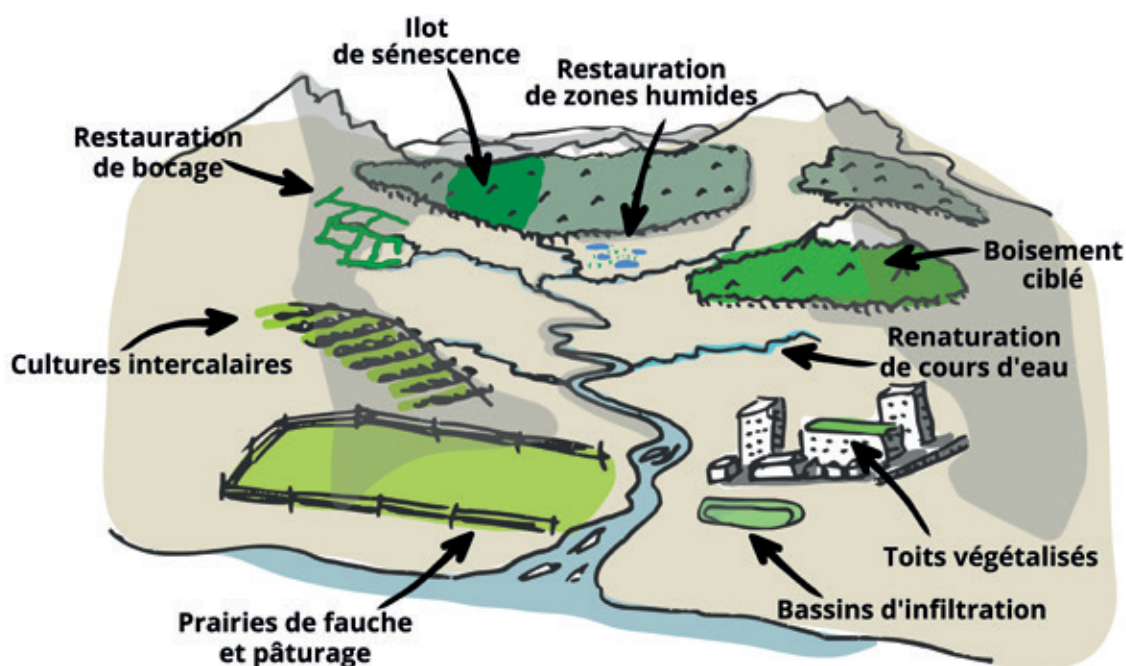
# OiEau is trying to combine water and biodiversity

For a long time, OiEau has been working for the preservation of aquatic flora and fauna, in particular by promoting integrated water resource management, involvement in the animation of networks of aquatic and wetland managers, etc. In order to go further and provide the best possible support to its partners on this subject, OiEau is making sure that biodiversity is increasingly integrated into its 4 pillars of action. Thus, the range of professional training courses on this theme is being enriched every year. The data related to aquatic biodiversity are integrated into information systems (IS), then valorised in connection with water data. Internationally, biodiversity is now systematically taken into account in projects and is the subject of workshops in international networks. In addition, OiEau has been contributing for about ten years to the development of multifunctional solutions such as natural water retention measures (NWRM), which are beneficial for both water and biodiversity. For example, as part of a project coordinated by OiEau in China, the country's largest artificial wetland (22 km<sup>2</sup>) was created in the Zhou River basin to protect the water quality of the Yuqiao reservoir, a source of drinking water for the 15 million inhabitants of Tianjin. In Africa, it is the incubation projects "100 Water & Climate Projects for Africa" (see p13) which this year offered the opportunity to draw on nature to preserve water and anticipate the effects of climate change.

## New feedback in France

In 2019, OiEau drew up 10 feedback reports on NWRM projects carried out in metropolitan France to assess the benefits obtained: fauna and flora, aquatic and wetland habitats, water quality and quantity, landscape, etc. These 10 feedback reports, accessible on Eaudoc (<https://www.oieau.fr/eaudoc>) and on the international platform "Natural Water Retention Measures" ([nwrn.eu](http://nwrn.eu)) dedicated to these measures, are a precious resource for project owners who wish to carry out actions to benefit water and biodiversity. Proof of the enthusiasm of project owners, 140 people took part in the Technical Day co-organized by OiEau at the Ministry of Ecological and Solidarity Transition.

**« Both flora and fauna cannot do without water of sufficient quantity and quality. The actions carried out in favour of biodiversity must therefore be combined with efforts on water. Through its activities, OiEau ensures this coherence, so that water resources benefit from progress related to biodiversity, and vice versa. »** Mr. Fouillet, Ecologist - OiEau.



The NWRMs are articulated and combined in the catchment area © OiEau 2019



# OiEau, facilitator of exchanges

OiEau regularly organizes study visits of foreign delegations to France, in order to share the French experience in water management, on the scale of large and small water cycles.

In 2019, delegations from Korea, Moldova, Nepal, etc. were welcomed, with specially designed programs, according to their expectations and the profile of their members.

Thanks to our 45,000m<sup>2</sup> of educational units in Limoges and La Souterraine, we propose technical visits, coupled with exchanges with our large network of partners (regional stakeholders, emblematic organizations in the sector, institutions, etc.).

## Ecuadorian delegation – Dec. 2019



Visit of the Upstream Seine Wastewater Treatment Plant (SIAAP) by an Ecuadorian delegation made up of representatives of public bodies in the water sector and Managing Directors of water and sanitation companies ©OiEau

## Central and Eastern European Delegation Nov. 2019



In front of the premises of the Artois-Picardy Water Agency. © OiEau

EUWI+ project (see p 13): Meetings of official representatives and experts from Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine with the French Ministries of Ecological and Inclusive Transition, Europe and Foreign Affairs and Solidarity and Health. Study visits to water stakeholders. Workshops on French water policy in connection with European Directives, France's involvement in transboundary cooperation in water management, INBO (see p 32), quality control of drinking water, etc.

## Chinese delegation – Sept. 2019



Mr. Vatin & Mr. HU  
© Seine-Normandy Water Agency

Visit of a delegation from the Hai River Commission (China), led by its Director General Mr. HU. In Paris, institutional meetings with Water Agencies, the Ministry of Ecological and Inclusive Transition, the Seine Normandy Basin Committee and technical training on Water Law Enforcement provided by the French Agency for Biodiversity. In Nice, exchanges on the prospects for cooperation, as part of the work of the Europe-China Water Platform and a technical visit (water and energy), as part of the Var River's SAGE (Water Development and Management Plan).



Training on Water Law Enforcement provided by the AFB at the Seine-Normandy Water Agency ©OiEau

## Burkinabé delegation – May 2019



A declaration of intent was signed for the enhancement and strengthening of institutional and technical cooperation between the Burkina Ministry and OiEau. ©OiEau

In Paris and then in Limoges, Mr. OUEDRAOGO, Minister for Water & Sanitation of Burkina Faso accompanied by a delegation composed of the Permanent Secretary for Integrated Water Resources Management and the MD of the Nakanbé Water Agency, met the Seine-Normandy and Loire-Brittany Water Agencies and the officials of the Region New Aquitaine. The institutional and technical cooperation initiated over 10 years ago and the incubation of development projects were at the core of their discussions.



There was a visit of our training center and our educational units in Limoges and La Souterraine. ©OiEau

# SOME CROSS-CUTTING PROJECTS

**B**etter water management often requires complex links between different scales (local, national, international), between political and technical approaches, between different areas of expertise (water and biodiversity for example). OiEau regularly mobilizes its ability firstly to transform these complex needs into funded projects and secondly to combine its varied skills (technical expertise, training, facilitation, governance, data management) in operational support to areas and organizations concerned, both in France and in Europe or at international level. This section presents some emblematic current examples.

« *The current challenges of water management are complex and require combining different skills: it is essential to support our partners by providing them with sound and independent advice in their strategic approach and in the implementation of operational tools. Our experts know how to create bridges between them to propose transversal solutions answering each problem raised.* »

Ms Perabout  
Commercial Attaché – OiEau





# Peer-to-peer: sharing to improve the implementation of European Directives

As part of the common European strategy for implementing the Water Framework Directive (WFD), OiEau provided the Secretariat of a consortium responsible for extending the Peer Review Mechanism launched in 2015 and funded by the Directorate-General for Environment of the European Union.

The Peer-to-Peer project aimed to develop mutual learning between experts from Member States basin organizations (peers) in order to improve the implementation of the WFD and Floods Directive.

Its principle: organizing review visits of European experts, upon request from the authorities. These experts gave their opinions on the quality of the management plans (water resources and flood risks) and proposed areas for improvement.

In addition to the field assignments, OiEau, as Secretariat, organized webinars on various topics such as: non-point source pollution and nitrates modeling; assessment of the status of non-permanent rivers; the presentation of the European Drought Observatory and how the basin authorities can use it; the application of ecosystem

management for aquatic ecosystems to stop and reverse the decline in biodiversity; water scarcity and drought management, etc.

For the Jucar Water Authority in Spain (Confederación Hidrográfica del Júcar - CHJ), « **participating in this process has been enriching. It is an opportunity, within the European Union, to share on issues on which each State has progressed and to draw lessons from them. It is also an opportunity for Member States to establish contacts that facilitate collaboration and communication.** »

- 9 basin authorities have requested a Peer review
- 30 experts, 7 field assignments to Europe
- 45 EU experts have expressed interest
- 7 webinars, 400 participants from 30 countries

## OiEau is training local stakeholders on Water Safety Management Plans



At the Water Meeting in Rennes in 2020, OiEau led the focus on "PGSSE", ©OiEau

The health safety of drinking water is one of the priorities of the local authorities and operators in charge of its production. The Water Safety Management Plans (Plans de Gestion de la Sécurité Sanitaire des Eaux - PGSSE) aim to permanently guarantee water health, by applying a general prevention and anticipation strategy. This involves risk assessment and preventive management, covering all stages of the water supply, from the water intake to the consumer's tap.

Several Regional Health Agencies (ARS) of New Aquitania, Occitania, PACA (Provence-Alps-Riviera) regions... that support the People in charge of Water Production and Distribution (Personnes Responsables de la Production et Distribution de

l'Eau - PRPDE) in their health security approach, have naturally turned to OiEau which offers expertise, both in enhancing knowledge and vocational training, but also in independent support to "PRPDEs".

As the "PGSSEs" are growing rapidly in France, the actions carried out by OiEau in this area are expected to gain momentum in other regions.

« **We, a small syndicate, often lose perspective. [...] The "PGSSE" can help us define where we should act, how to orient us. The "PGSSE" seems to me to be a tool for confidence in the future.** » Mr. Cuny, President of SIAEP - KARST Charente.

- In 2019, in France:
- 12 training sessions
- 35 acculturation meetings
- 5 web-conferences
- 12 technical days
- 1,500 people trained



# Guyana Plateau: sharing water and biodiversity



Carried out by OiEau and the Guyana Water Office (OEG), the BIO-PLATEAUX project aims to better understand the water resource uses and associated impacts in the transboundary Maroni (Guyana / Suriname) and Oyapock (Guyana / Amapa-Brazil) river basins. Its main issue? The establishment of an observatory allowing better sharing of information on water and the biodiversity of aquatic environments between Guyana, Brazil and Suriname.

Started in 2019 with the organization of a unique conference, in the presence of the President of the Guyana Region, the French Minister for Overseas France, two Ministers from Suriname and the Governor of the Amapa State.

On this occasion, 140 scientific, technical and administrative stakeholders from the various territories met for the first time. They were thus able to discuss their expectations, their expertise and their roles in the implementation of preparatory work for the creation of the shared observatory whose expected benefits are multiple: improving the preservation of the biodiversity of aquatic environments, building capacity through training on Integrated Water Resources Management, developing the use of space technologies, reducing costs through economies of scale,

developing decision support tools.

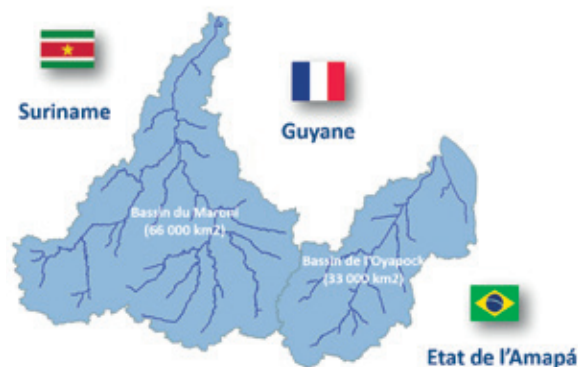
Launched under the Interreg Amazonia Cooperation Program and coordinated by the Guyana Local Authority, BIO-PLATEAUX is financed by the European Union, the Directorate for the Environment, Planning and Housing of Guyana, the National Center for Space Studies and the OEG.

The OEG, OiEau, Amapa Agency and Anton de Kom University (Suriname) are the operational partners of the project.

According to **Mr. Chow-Toun**, Project Manager at the OEG, « **Year 2019 was the starting point for the project. For the OEG, this was historic because it allowed establishing contacts and partnerships with counterparts in Suriname and the Amapa State. This project had been in the making for 8 years; it was thanks to the links with OiEau and the effective implementation of the initiative that these contacts were able to take place.** »



Signing of the Cayenne declaration by the project partners in the presence of the competent ministerial and local authorities ©OiEau



Map of the Maroni and Oyapock River Basins. ©OiEau

# Against water crisis in Guadeloupe: an ambitious project, initiated in 2019



Guadeloupe has one of the largest water reserves in the world. However, it is facing a real water crisis. The cause? The fragility, uneven distribution and poor management of this resource which impact the daily life of the inhabitants.

7,000 m<sup>3</sup> of water available per capita. It is 2.5 times more than in continental France. The reserves fed by very significant rainfall represent a resource that, in theory, is reliable, perennial and almost ideal.

91% of the resource comes from Basse-Terre, including 75% from surface waters. The remainder comes from often poorly protected or unprotected catchments. Clearly established bacteriological or pesticide contamination makes it difficult for the inhabitants to accept water services.

## Failing Infrastructure

The operation and status of the drinking water supply system means that we must speak of a "water crisis". Leaks, obsolescence or lack of meters, illegal connections, lead to a loss of more than 60% of the volumes produced and to very uneven financial conditions for the utilities.

Water cut offs cause a lack of tap water for sometimes several days a week and make customers angry. The public drinking water supply service has not the necessary quality and fairness. The recovery of water bills is faulty and the efficiency of the water utilities management is limited.



## Training and Governance: The 2 Main Components of the Project



The Guadeloupe Water Authority (OEG/GWA), a key stakeholder in the Island, has selected OiEau and Ernst and Young (EY) group to initiate a proactive approach to support the local authorities in the management of this crisis.

Since July 2019, OiEau and EY, under GWA control, have carried out joint and complementary actions for the development of financial models, training and technical support for operators, thinking about a new governance method and participation in a specific working group on leaks.

After an audit of water production plants, OiEau has also provided a training session for technicians on leak detection. WGA has acquired specific detection equipment which OiEau will soon use to build the capacities of the various people involved in this process, which has received support from the Region.

**« The Human Resources component is essential in this project. It will allow elected officials and public intermunicipal cooperation bodies to jointly build the future organization for providing Guadeloupeans with a public utility supplying quality water. »**

Ms Rivet, HRD Expert – OiEau



OiEau was able to develop and perpetuate many partnerships with the private and public sectors. Despite the sharp drops in subsidies over the past two years and the heavy reforms in the field of training, the association has managed to bounce back: activity has progressed, reaching an unprecedented level (almost € 16 million in operating income).

OiEau can rely on a highly qualified workforce made up of national and international experts. Most employees have a permanent employment contract.

### Statutory missions

OiEau's activity products are distributed according to its main statutory missions:

- Educational Training and Engineering (ETE)
- Facilitation of Stakeholders' Networks (FSN)
- Data, Knowledge and Information Systems (DKIS)
- Technical and Institutional Support (TIS)

## € 15.7 M

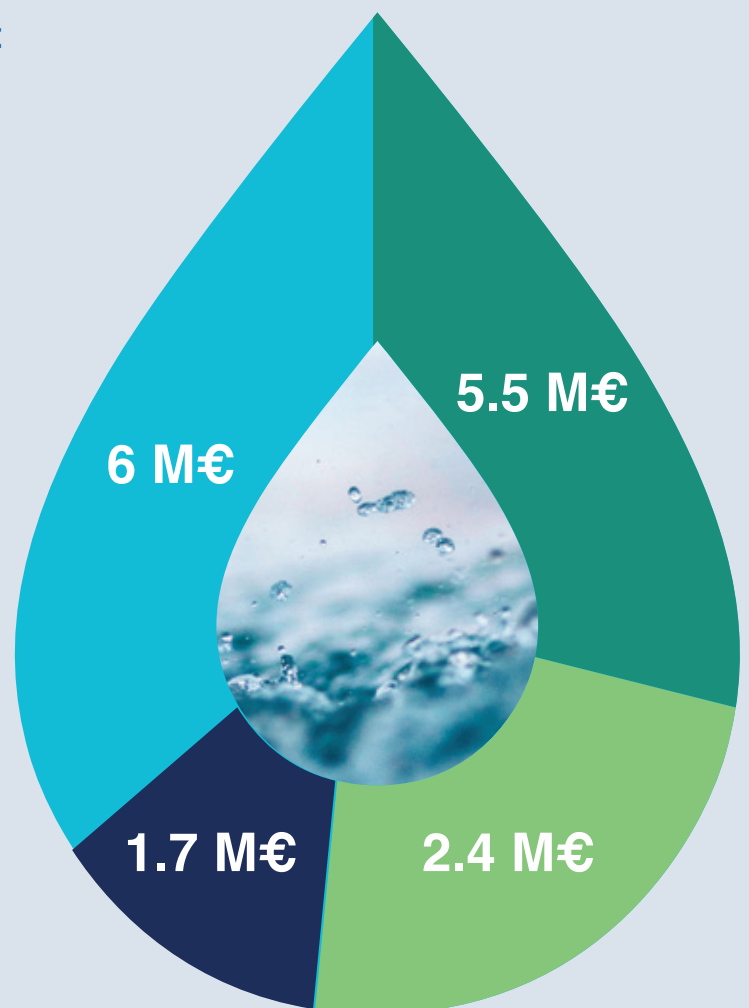
### REVENUE FROM ACTIVITIES IN 2019

This is the highest figure since OiEau's establishment.

## 142

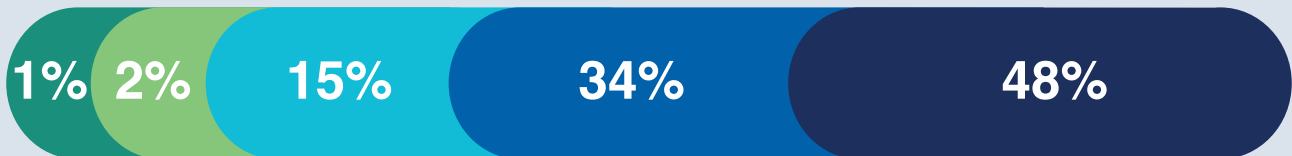
### EMPLOYEES AT THE END OF THE FINANCIAL YEAR

This staff is the largest since OiEau's establishment.



### The main families of products

OiEau's activity products can also be broken down according to the major accounting families of products. This allows observing the share of subsidies but also the distribution of commercial revenues between French and international levels (nationality of the donor):



- Contributions
- Other products
- Subsidies
- International operating revenues
- French operating revenues

### Large expense items

For OiEau, the significant expenditures are Purchases and Consumption, Payroll, Taxes and Depreciation. Their evolution since last year is the following one (in % of Operating Products):

|                                   | 2019   | 2018   |
|-----------------------------------|--------|--------|
| <b>Payroll</b>                    | 56,8 % | 59,2 % |
| <b>Purchases</b>                  | 34,5 % | 32,6 % |
| <b>Depreciation and provision</b> | 4,5 %  | 3,3 %  |
| <b>Taxes</b>                      | 4,1 %  | 5,4 %  |

## The stakes

The drop in subsidies required finding compensation from new competitive markets. This led the association to structure itself differently and to reassign and then train its staff.

Thus, the strong increase in operating revenues did not immediately translate into a net income, which came out with the budget balance at the end of the fiscal year (+ € 12k).

In the future, the association must continue to

develop its commercial activities in order to cope, unfortunately, with decreases in public funding.

It must also take care to maintain a suitable margin on its projects.

It will have to continue the reassignment of some of its staff in order to respond to new markets and commercial partnerships. It will be able to count on its strong adaptability and on the solid synergies generated by its statutory missions.

# PROSPECTS

## Training: a booming sector

The water professions are constantly evolving with the dissemination of new technologies, taking new challenges into account.

OiEau is, for example, involved in a study on "The water of the future - challenges and prospects for companies in the sector", published in 2019 by the Directorate General of Companies and the French Water Sector. It gives eleven solutions to meet the challenges of the sector, including new means of collecting, exploiting and enhancing data, more sustainable networks, the reuse of treated wastewater, ecological engineering for stormwater management and water purification and energy efficiency of structures.

At international level, the water professions are also evolving. In 2018, OiEau carried out a study on "Vocational training and the water and liquid waste sector" for for Agence Française de Développement (AFD), to identify the challenges at international level. There are obviously old challenges that are insufficiently taken into account as well as new ones, regarding both health and environment (global warming, urban and demographic growth, wastewater treatment), as well as utility management (dense areas, rural areas, stormwater drainage, flood risk management, infrastructure optimization, energy consumption, performance of facilities, economic balance of services), or service to users (access to drinking water and sanitation for all, prevention of water-borne diseases, interactions between water and town planning).

Faced with these future needs in jobs and required skills, the training to be delivered can be adapted, including via the use of digital training tools (see P. 26).

In France, the reform of vocational training has led OiEau to strengthen, in particular, the design of training curricula with certification (Work in Confined Spaces, Work near Networks) or qualifying (chlorine, water sampling, connection checks, swimming pool water, polyethylene welding, rainwater harvesting...).

Professional courses (sampler, treatment plant operator, network agent, etc.) or Professional Qualification Certificates (PQC) are becoming increasingly important. OiEau not only delivers eligible modules (technical sales managers in building materials) but is now approved as an "Assessment Body" by several PQCs (scheduler, technician or operator in industrial maintenance) for water and sanitation companies.

**« For better recognition of the professions, for better taking evolutions into account, OiEau has considerably adapted and diversified its offer and will continue to do so, to meet all the new challenges. »**, is confirming **Mr. Pronost**, Director of Training and Educational Engineering - OiEau.





# On the Way to the 9<sup>th</sup> World Water Forum (WWF), in Dakar in 2021...

Every 3 years, the World Water Forum gathers stakeholders from the sector, under the leadership of the World Water Council. This 9<sup>th</sup> forum will be held in Senegal from 22 to 27 March 2021. Mr. Abdoulaye SENE, Co-President of the International Preparation Committee, presents some of the challenges of this great event.



© Riad TABIBEN - INBO

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

This world needs peace. Otherwise, the future of Humanity is at risk.

We therefore wanted to focus on water security, which is a key issue in many countries around the world. We wanted to emphasize the conflicting potential of sharing and protecting the resource, multi-level governance or, merely, access to water.

In connection with the challenges of climate change, this issue must help us build peace, and above all ensure development. This is what motivated Senegal to propose this theme.

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

This Forum will remain a global forum, but with an African key.

We are going to create an exchange platform on some themes, with a great diversity of stakeholders who will be able to dialogue in working groups focused on specific issues.

Up to this date, the political, citizen and thematic processes have been parallel. We think that this was not necessarily the right way to build adapted responses, in a collaborative way.

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

Until now, the Forum had not the legitimacy that allowed reporting results internationally. This time, we want the WWF to have a Summit of Heads of State. This will lead to a very strong political declaration that will commit States and international organizations to concrete measures. Senegal will be able to bring these results to the United Nations, and make sure that these collectively constructed results can enrich the Global Agenda.

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

We hope that development projects can be issued before the Forum to produce positive effects as close as possible to the populations. In Africa, water needs are urgent and above all multiple. We want the dynamics of preparation for the WWF to lead to concrete field results.

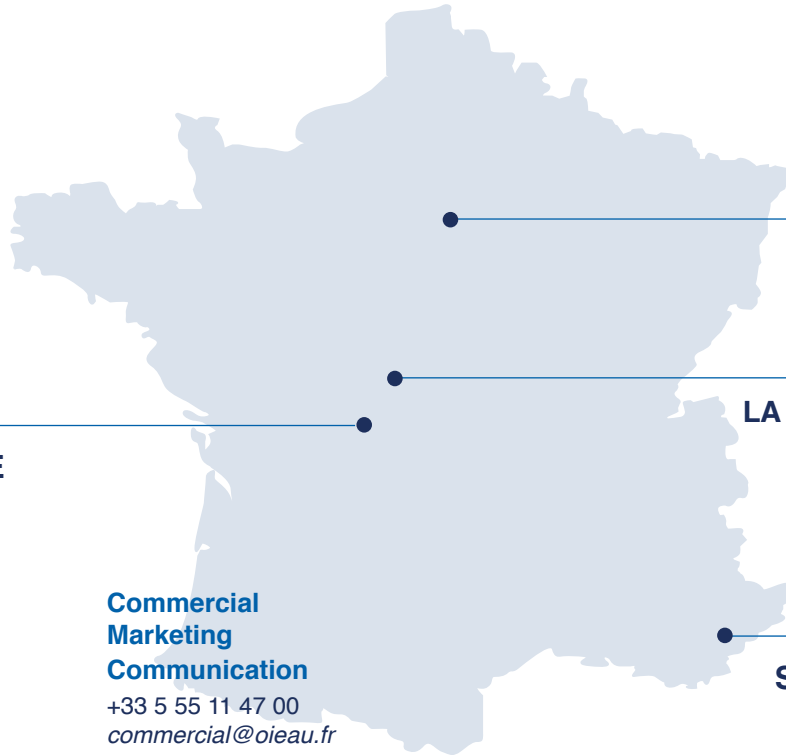
Interview made during INBO GA (See p. 32) in Marrakech (Morocco) – October 2019

## *OiEau and the WWF*

"Senegal has requested France's partnership and its President has identified OiEau as one of the French institutions that can organize and ensure France's participation in the WWF.

In addition, the Organization for the Development of the Senegal River (OMVS) has signed a strategic partnership with Senegal. Together, we have adopted the principle that OiEau supports it scientifically and technically, to fully assume the responsibilities and missions expected from it.

Thanks to its expertise and commitment, OiEau is therefore a major stakeholder for us."



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