




SOLUTIONS BOOKLET

from French water stakeholders

french
water
partnership



partenariat
français
pour l'eau



The purpose of this booklet is to display the solutions implemented by French water stakeholders at a national and/ or international scale. These solutions address the top priority issues of the French Water Partnership.

The participation of French stakeholders is highlighted through the use of pictograms representing the six colleges of the French Water Partnership.



Government and Public Institutions



NGOs, non-profit Organizations and Foundations



Local Authorities and Parliamentarians



Economic Stakeholders



Technical, Scientific, Research and Training Organizations



French and International Individuals



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WATER AND GOVERNANCE

Establishing an effective, efficient and widely accepted governance

In a context of major economic, demographic and climate changes, growing competition between water uses and the enduring frailty of access to water resources tend to provoke “water crisis”, which are often crisis of governance. Governments must adapt to stricter requirements with limited financial and human resources. Today they may find themselves faced with a loss of trust from citizens who are better informed and interested in having a significant influence on political decisions.

The members of the French Water Partnership are highly active on the international level in promoting an effective, efficient, transparent governance that is widely accepted by society, from a management at the appropriate scale (international, national or regional scale; basin or sub-basin scale) to a management of local public drinking water and sanitation services.

Ensuring equity among users, regions and generations & recommending rules for the implementation of appropriate solutions to the great challenges of our time.



The recommendations of the FWP are based on :

- A number of studies resulting from the Lisbon Charter for public policies and the regulation on drinking water, sanitation and waste management services recently adopted by the IWA (International Water Association)
- Guidelines provided by the OECD, which worked with the International Office for Water (OIEAU), along with the Scientific and Technical Association for Water and the Environment (ASTEE) as well as a number of other members of the French Water Partnership to prepare their "principles for water governance" based on the preparatory work carried out at the 6th World Water Forum in Marseille, France, in 2012.
- Actions of NGOs whose aim is to promote, among other things, transparency and civic participation in the management of water and services. An example of a particularly active network is the Butterfly Effect NGO Coalition.

They cover the following points:

- **Involvement and equity of stakeholders** : map all the key stakeholders and their motivations and interactions; define and implement systems of water governance and strategies that strengthen equity among users, regions and generations; set in motion a process with stakeholders to enable them to contribute to the decision-making process and to implement solutions;
- **Effectiveness** : set up a legislative and institutional framework clarifying the roles, responsibilities and resources to establish and implement public policies; encourage tighter bonds between the various levels of government and administration and, in particular, among the water, energy, agriculture and spatial planning sectors through genuine cross-sectoral coordination; ensure sufficient capacities for institutions in the field of water at every level of government as well as for operators, users and all stakeholders;
- **Efficiency** : produce, update and share performance indicators in order to guide, assess and improve public policies and water management; adopt mechanisms that help mobilize and catalyze the necessary financial resources; identify and remove barriers to innovation (whether technical, economic, social, political or cultural) and provide an interface between science and public policies;
- **Transparency** : develop integrity and transparency in the policies led and governance systems with the goal of making them easier to assess; evaluate public policies and share the results with the public to identify areas of improvement and adjust them when necessary.



IMWR : INTEGRATED MANAGEMENT OF WATER RESOURCES

Moving towards a Democracy of Water through National or Transboundary Basins

Water knows no administrative boundaries in the world.

263 rivers and lakes in the world are shared by at least two countries.

Water is plentiful throughout the world, but overused and polluted by human activities. It has become a fragile resource both in terms of quality and quantity, with clashes over different uses (agriculture, drinking water, energy, tourism, shipping, etc.).

To handle this situation, France chose an innovative management approach in 1964 : a solidarity-based management system at the hydrological basin scale which brings together all stakeholders within the basin, both large-scale and small-scale. This was a revolutionary innovation at the time and served as a model at the European level before being exported widely.

This management mode is at the heart of all actions recommended by the French Water Partnership

The members of the French Water Partnership support this approach, which must be adapted to fit the context of each situation :

- Taking into account the geographic reality of resources in accordance with the "water knows no administrative boundaries" principle allows for a more balanced approach between upstream and downstream levels and between quantity and quality ;
- Each basin has its own "water parliament" to promote dialogue among various actors, to take better account of the various types and uses of water, to ensure the consistency of water policies with other policies (agriculture, energy, health, etc.), to promote the importance of ecosystems and to allow for a shared vision of strategies and funding priorities ;
- The organizations within each basin must have sustainable financing mechanisms that enable them to cover all their needs, i.e. the costs of managing and monitoring resources (data acquisition, planning, cooperation among users, etc.), the costs of building and operating facilities and, finally, the basin organization's own operating costs. The various sources of funding may include taxes (contributions from the government or governments in the case of transboundary basins), water use charges (hydroelectricity, irrigation, shipping and flood prevention), payments for project management activities or services and transfers from the international community ;

Transboundary management of watercourses as recommended in the 1997 United Nations Convention, which entered into force in August 2014, allows for the implementation of coherent policies for the integrated management of water resources and environmental protection within the scope of sustainable development.



Solution

Franco-Chinese cooperation on the pilot project in the Hai River basin and the Zhou River sub-basin



Stakeholders

Seine-Normandie Water Agency

(MAIN FUNDER),

International Office for Water (IOWater)

(TECHNICAL COORDINATOR),

the Greater Paris Sanitation Authority (SIAAP) and the Local public basin institution of Seine Grands Lacs (EPTB Seine Grands Lacs)

The project

Establish an integrated system to manage the waters of the Zhou River.

Challenges

Untreated wastewater and agricultural nonpoint source pollution put at risk the pilot Zhou River basin and the drinking water supply of Tianjin, the country's 4th largest city. It was therefore time to take stock of the situation, to set up a group to coordinate the management of water and to produce a relevant action plan to improve water quality in the basin.

Strengths

The Seine-Normandie Water Agency, the International Office for Water, the Paris Urban Area Wastewater Treatment Union and the Local public basin institution of Seine Grands Lacs gathered together to offer their Chinese colleagues an extensive range of tools including a WFD (Water Framework Directive) planning method, water development and management plans and training on technical subjects such as ecological engineering and the calculation of concentration and mass balance.

The first two project phases were highly successful and are a testament to French know-how, which made it possible to help coordinating multiple players and provide an integrated solution.

This Franco-Chinese cooperation began in 2011 and will assume its full scope in 2015 with recommendations for concrete actions that will only need to be implemented.

BENEFICIARIES

Hai River Water Conservancy Commission,
Water Board of the City of Tianjin
and Hebei Province

TO FIND OUT MORE

www.oieau.fr

www.eau-seine-normandie.fr



WATER AND CLIMATE

Moving towards the sustainable management of water resources in a context of global and climate changes

Climate change is not an isolated issue and must be addressed in conjunction with a number of other global changes : expanding population, urban sprawl, changing consumption patterns, etc.

Have a look at our Climate publication “Water and climate, acting for the future”, available on our website, www.partenariat-francais-eau.fr under the “Climate Change” section.

Natural resources, including water, are strongly affected by climate change. A global temperature increase of more than 2°C compared to the pre-industrial era would be an alarming development and could lead to major disasters. Although our understanding of these impacts is becoming clearer, there is still uncertainty surrounding water-related issues in certain regions of the world.

In the face of climate change, **the members of the French Water Partnership** have initiated actions to mitigate and adapt to the effects of greenhouse gases. The water sector can make a positive contribution to developing solutions for these impacts.

In order to do so, they promote :

- **the integrated management of water** resources to combat climate change through mitigation and adaptation as well as the implementation of synergies among policies on water, food security, energy and the environment ;
- a management based on a balanced approach between **a more efficient and sensible use of available resources** in order to meet various needs while taking into account environmental requirements and the mobilization of new conventional water resources (surface water or groundwater) as well as non-conventional resources (reuse of wastewater, use of rainwater, aquifer replenishment, desalination, etc.) ;
- the inclusion of water in preventive plans and measures in response to natural disasters, so as to protect the populations most at risk in the Post 2015 Hyogo Framework adopted by the Sendai Conference ;
- **increased funding** at the international, regional, national and local levels for actions relating to water and climate change ;
- **the involvement and ownership** of these measures by the local population.

Solution

The Water Development and Management Master Plans covering three French basins.



Stakeholders

The Adour-Garonne, Rhône-Méditerranée-Corse and Seine-Normandie Water Agencies



The project

Update the Water Development and Management Master Plans (SDAGE) according to any uncertainties caused by climate change. The Adour-Garonne Agency provides funding to a SDAGE based on an innovative study (Garonne 2050) that involves users. This study incorporates the impact of climate change as well as forecasts of demographic, energy and agricultural changes. The resulting scenarios vary according to political decisions, regulation of uses and the extent to which resources have been safeguarded. Likewise, the Seine-Normandie Water Agency developed forward-looking models for the 21st century by combining consumption forecasts and climate and water scenarios at the basin scale. These models were developed as part of the PIREN-Seine program (interdisciplinary environmental research program) and were based on the Explore 2070 study. They were used to draw up the SDAGE for 2016-2021. The Rhône-Méditerranée-Corse Water Agency prepared a plan for enabling its Rhône Méditerranée basin to adapt to climate change. Concrete recommendations included: Removing waterproof ground coverings, eliminating water wastage and restoring the river to its rightful condition.

BENEFICIARIES

The residents and users of the Adour Garonne, Rhône Méditerranée and Seine Normandie basins

TO FIND OUT MORE

www.eau-adour-garonne.fr
www.eaurmc.fr/climat.html
www.aesn.fr

Challenges

Ensuring the ability to adapt to climate change in order to share water resources more effectively.

Strengths

The method is:

- participatory : the general public has several months to view the document and share their opinions on it ;
- representative : the basin committees that prepare the SDAGEs are made up of local actors ;
- innovative : the SDAGEs are on the cutting edge of adaptation to climate change ;
- Visionary : the SDAGE combine short and long-term strategies, as required for climate adaptation.

Solution

Integrated water resource management project in the Dong Nai basin (Vietnam)



Stakeholders

Asconit Consultants,
International Office for Water (IOWater)

The project

The Dong Nai river basin represents 17% of Vietnam's surface area and extends over 11 provinces in the northern Mekong Delta, a region recognized as one of the most vulnerable to the impacts of climate change. As part of the integrated water resource management project in the Dong Nai basin, which was coordinated by IOWater, ASCONIT Consultants conducted a pre-feasibility study to set up a water quality monitoring system for the river.

Challenges

Providing an approach for the integrated management of water resources (IMWR) in the Dong Nai basin that can be replicated in the country's other catchment areas.

Strengths

Gaining a better understanding of the quality and management of water is a necessity in a region that is vulnerable to climate change.

The proposed solution consisted of a framework program for monitoring water quality. The aim was to move beyond the fragmented management approach for existing networks that is used currently. Forty-five monitoring stations were proposed in addition to the 102 existing stations.

PARTNERS

SCE, EnvirOconsult

BENEFICIARY

Ministry of Natural Resources and Environment (Vietnam)

TO FIND OUT MORE :

www.asconit.com

www.oieau.fr



Solution

Impact of global changes on the supply of drinking water for the Montpellier Urban Community



Stakeholders

Geology and Mining Research Institute (BRGM)

The project

The Lez Spring supplies drinking water to the 340,000 residents of the Montpellier Urban Community in southern France. This very large reservoir of groundwater is subject to climate change, which should result in a decrease in the quantity of water even as the population is projected to grow over the coming years. It is therefore essential to anticipate the crossed impacts of climate change and rising water demand on the water levels and flow rates of the Lez River reservoir.

Challenges

Ensure sufficient water supplies for the residents of the Montpellier Urban Community and consider an increase in water abstraction for a population that may grow to 390,000 people by 2030.

Strengths

The Intergovernmental Panel on Climate Change (IPCC)'s climate change scenarios were used to explore future changes in the water resources in this karst reservoir. Groundwater flow was modeled. The use of the digital model made it possible to simulate the impacts of climate change on water resources and to anticipate future crises.

PARTNERS

Health Regional Center, Hérault Regional Direction for Territories and Sea, Hydrosociences, G-Eau, Biotope, Tétis

CLIENTS

Rhône Méditerranée Corse Water Agency, Hérault Regional Council, Montpellier Urban Community

TO FIND OUT MORE

www.brgm.fr/lez-exemple-gestion-multiusage-eau-ressources-qualite-risque



Solution

The SWOT program (Surface Water Ocean Topography Mission)



Stakeholders

The French National Center for Space Studies (CNES) and the National Aeronautics and Space Administration (NASA)

The project

Only limited quantities of freshwater are available on our planet. In an era of climate change, it has become important to understand all the characteristics of freshwater. Climate change affects sea levels. The SWOT mission will allow for satellite monitoring of the world's freshwater surface levels in the same way as sea levels. It will also make it possible to analyze the impacts of climate change. In the frame of French Future Investment Program (Programme d'Investissements d'Avenir), CNES has received funding to develop the space system SWOT (Surface Water and Ocean Topography) in cooperation with NASA.

Challenges

To better understand the water cycle at the regional scale in order to support the sustainable management of water resources, to better manage inland navigation, to permit more accurate weather and climate forecasts and to better model flooding.

Strengths

The SWOT mission will provide, among other things, very accurate data on water levels. This recent program constitutes a major technological breakthrough in the field of space altimetry.

PARTNERS

The Canadian Space Agency (CSA) and United Kingdom Space Agency (UKSA)

TO FIND OUT MORE

The world's site of reference in the field of altimetry : www.aviso.altimetry.fr/swot



FOOD SECURITY

Feeding the planet while managing water resources in a sustainable way

A few facts :

Three thousand liters of water per day : this is the average quantity of water used to grow plants and required to feed one person.

2.6 billion rural residents (including 600 million people suffering from hunger) directly depend on agricultural water and feed 7.3 billion individuals.

In southern Mediterranean countries, 290 million people will experience shortages by 2050 (compared to 64 million people today). Wheat imports in the sub-region have increased twenty-fold over 50 years (FAO).

Agriculture cannot exist without water, and a lot of water (rainwater and irrigation) is needed to ensure the security of our food. However, according to the FAO expectations, production would need to increase by 60% come 2050 in order to feed nine billion people. A better water management is a necessity to ensure the universal right to food, to meet global food needs without deforesting the planet, to ensure higher incomes for vulnerable rural households and create jobs. It is also needed to spread sustainable farming systems everywhere in the world, to adapt successfully to climate change and to avoid forecasted crisis.

Water is unevenly distributed, mobilized and recycled throughout the world. Many productive systems are impacted by rural poverty and their sustainability is threatened. Due to climate change and its effects on water and agriculture, food insecurity threats and social instability are rising in the countries at risk. In certain areas, in particular in sub Saharan Africa, mobilizing water resources will be essential and must be done according to an integrated approach. Priority must once again be given to agriculture and rural development to avoid new food crises, all the while managing water resources in a necessary sustainable manner.

To do this, **the members of the French Water Partnership** recommend using all available tools (demand and supply) in a simultaneous and integrated manner. This requires :

- **Ensuring the success of the transition to ecological farming** for better water conservation and to restore the quality of soils, prevent erosion and desertification, produce more with fewer external resources (ecological intensification ; conservation and precision agriculture) and reduce pollution ;
- **Increased mobilization of water resources where possible and necessary and progress in terms of efficiency and sustainability** : surface water storage and aquifer replenishment, transfers and use of non-conventional water sources ; **management of water demand** ;
- **Support for small-scale farming** to ensure access to water and a better use of local water, provide environmental services and boost productivity and rural incomes ;
- **Multi-scale regional governance of water and regional projects** that empowers rural communities and aims at strengthening food and water security ;
- **A new culture of innovation** (agronomy, technology, governance, etc.).

Solution

SCAMPIS - Development of micro-irrigation systems



Stakeholders

Agronomists and Veterinarians Without Borders

The project

Market gardening is threatened by water stress and climate change in Madagascar. Agronomists and Veterinarians Without Borders works to promote market gardening in eight districts in the central highlands and in two districts on the east coast of Madagascar in order to strengthen the population's resilience to climate change.

Challenges

These problems are emphasized by local constraints : lack of infrastructure, shortages of services and funding, lack of social security, etc. This context causes farmers to leave portions of their land idle.

Strengths

The solution: equipping farmers with low-cost micro-irrigation kits and establishing a local network of craftsmen and distributors capable of making and disseminating the kits and providing after-sales services.

- The expansion of drip irrigation kits manufacturing allows local populations to be included in the project and will contribute positively to the local economy ;
- Micro-irrigation allows for higher yields over larger tracts of land, resulting in water savings ;
- It better protects soil and the environment and thus has a potential to mitigate soil damage.

PROJECT START

2009

LOCATION

CENTRAL HIGHLANDS
AND EAST COAST OF
MADAGASCAR



END DATE

2012

ASSOCIATE PARTNERS

LOCAL PARTNERS

Fafafi (NGO), OP CDAM (Agricultural Development Center of Manjakan Driana)

KEY FUNDERS

Coopernic, International Fund for Agricultural Development (IFAD), French Agency for Development (AFD)

BENEFICIARIES

More than 60 market gardening communities and 16% of the country's agricultural households (approximately 9,288 beneficiaries)

TO FIND OUT MORE

www.avsf.org



Solution

The regional sustainable agriculture project (PRAD) in the Languedoc-Roussillon region of France



Stakeholders

the Regional Prefecture of the Languedoc-Roussillon, the Languedoc-Roussillon Region and its water and agriculture stakeholders

The project

The purpose of the regional sustainable agriculture projects (PRADs) is to provide guidelines for the government's local agricultural policy while taking into account the specific characteristics of regions as well as all economic, social and environmental issues. The Languedoc-Roussillon PRAD, approved in March 2012, highlights the specific nature of the Mediterranean climate, which justifies the storage of excess winter rainfall for agricultural use in the spring. Water storage needs have been dramatically magnified by climate change. The project notes that evapotranspiration has increased by 20 to 30% over thirty years in the plains. In order to adjust to these changes, the Languedoc-Roussillon PRAD has made it a priority to incorporate the aridity index in zoning criteria, support the efforts to adapt plant material and ensure access to available water resources. This involves sustaining water supplies, in particular through the AquaDomitia project (transfer of water from the Rhône) and by building 50 reservoirs per year.

TO FIND OUT MORE

<http://draaf.languedoc-roussillon.agriculture.gouv.fr/Le-Plan-Regional-de-l-Agriculture>

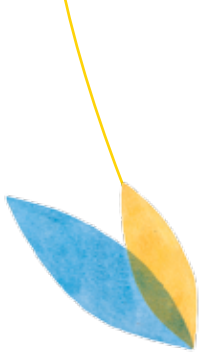
Challenges

Successfully adapting agriculture to climate change and preserving jobs and production.

Strengths

A vision that takes into account the specific characteristics of the region and the intersecting challenges of food and water safety as well as climate change. Actions that focus on the sustainable management of water resources by acting both on supply and demand.





WATER AND ENERGY

Moving towards a better management of water for energy and energy for water

At the global level, energy demand is projected to increase by one third by 2035, with demand for electricity expected to grow by 70% over the same period (IEA, 2013).

At the same time, global water demand is projected to increase by 55% come 2050. This is mainly due to growing demands from manufacturing, thermal electricity generation and domestic use.

Water and energy, two fast-growing sectors, are essential to each other. At the global level, the energy sector is, after agriculture, the second largest user of water: hydroelectric power generation, cooling of thermal power plants, extracting and refining oil and gas products, etc. In turn, energy is essential to the entire water use cycle, from extraction to transportation and treatment.

Despite their close interdependence, the international community does not yet have a framework for the shared analysis of interactions between energy and water. Better integration of energy and water management policies would be required in situations of vulnerability brought about by this interdependence.

In this context, **the members of the French Water Partnership** are working on an integrated approach for the water and energy sectors that is compatible with sustainable development. Their recommendations are as follows:

- **Promote coherence between water and energy policies** through adequate planning and the creation of governance bodies at the basin scale by involving all actors and integrating issues related to the supply of drinking water, sanitation and energy as well as those related to the environment, agriculture and tourism;
- **In both sectors, promote a rational approach to water use (in terms of quantity and quality) for the energy sector (water footprint) and a rational approach to energy use for the water services sector (energy efficiency)** through the use of strict monitoring mechanisms;
- **Develop sustainable hydropower that is inclusive of different uses** and allows for optimizing these uses in a concerted fashion.

Solution

Concerted effort around the Sarrans dam (France)



Stakeholders

Electricité de France (EDF), the French government, Institutional actors, tourist offices, activity providers, accommodation providers, hiking federations

The project

From April to October 2014, EDF conducted a full technical examination of the Sarrans hydropower dam by draining all water from the reservoir (the 8th largest reservoir in France), which extends over the departments of Cantal and Aveyron.

TO FIND OUT MORE

www.edf.com

<http://www.sarrans-vidange2014.com/>

Challenges

- Inspecting, monitoring and intervening on the sections of the Sarrans dam that are usually underwater in order to improve the drainage and flood discharge capacity of the dam. This technical examination had not been carried out since 1979, although underwater checks had been performed on a regular basis since that time. The operation was prepared more than two years in advance by EDF in association with public bodies and mobilized more than 25 million euros.
- Integrating this large-scale action into the local economy and economic development: how should the public be informed? What should be done with fish and sediments during the period when the dam is empty? How can this action be transformed into an event to promote tourism, the local economy and the infrastructure around the Sarrans dam?

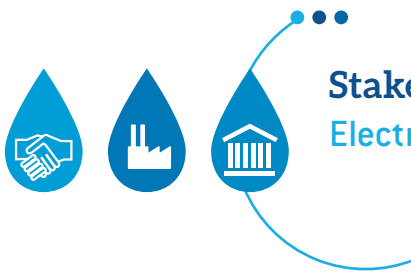
Strengths

EDF and local decision-makers set up three groups to work on these subjects, gathering around thirty relevant actors. The concerted efforts of local actors resulted in innovative solutions for improving water quality, improving living conditions for fish, protecting wildlife habitat and supporting economic development and tourism.

An information campaign helped the residents of the departments of Cantal and Aveyron to gain a sense of ownership in the initiative, which they turned into a local event.

Solution

Electricity and water for a school and a vegetable garden in Burkina Faso



Stakeholders

Electricians Without Borders (ESF)

The project

The village of Kassakongo had neither a water distribution network nor an electricity grid. The nearest electricity grids were located 8km from the village and the public electricity utility has no current plans to expand the grid to Kassakongo. In cooperation with three Burkina Faso-based associations in charge of schooling, market gardening and animal husbandry activities, respectively, the NGO Electricians Without Borders worked to provide access to drinking water and light for villagers living in Kassakongo.

Challenges

Facilitating access to drinking water and electricity for the villagers of Kassakongo in cooperation with three Burkina Faso-based associations.

Strengths

The installation of eight solar panels on the roof of the primary school, the construction of a water tower with six solar panels used to power a pump and the creation of a vegetable garden have yielded results. Today the village schools have improved significantly and the vegetable garden is used to provide children with a more balanced diet.

A partnership agreement was signed with local associations, management committees were set up within each association and a worker was trained in maintenance operations, ensuring the follow-up and long-term maintenance of facilities.

PARTNERS

Amitiés & Solidarités Universelles, Electricité de France (EDF), Nexans, the public electricity distribution network in France (ERDF), the Aquitaine Region, Legrand

BENEFICIARIES

2,000 people

TO FIND OUT MORE

www.electriciens-sans-frontieres.org





WATER AND BIODIVERSITY

Humanity and aquatic biodiversity : a clear interdependence

The increased speed of land development, climate changes and the globalization of trade are threatening biodiversity.

Biodiversity is essential to support the functions needed for all life forms. It provides raw materials, helps to maintain the quality of water, air and soil and serves as a highly valuable form of cultural heritage.

The need to reconcile human development with the preservation of natural environments is now generally accepted by all actors. However, biodiversity – especially aquatic biodiversity – is deeply threatened. Over a few decades, rapid land development and the expansion of industry and intensive farming have altered these environments through the loss of natural shorelines, the distribution of contaminants in ecosystems and increased pressure on water resources.

Preserving aquatic ecosystems is not only a clearly stated environmental issue but also a public health issue as well as an economical and social one.

Using the EU Water Framework Directive as a benchmark, **the members of the French Water Partnership** call upon the international community to take action in favor of a high quality of water and aquatic ecosystems and :

1. Support the implementation of the Convention on Biological Biodiversity, the aim of which is to :

- restore the good ecological status of aquatic environments;
- stop the loss of wild and domestic biodiversity;
- restore and maintain its ability to evolve;
- induce each signatory country to develop a national strategy for biodiversity.

2. Support for research to improve knowledge of biodiversity and an appeal to environmental engineering as a technically mature solution. The acquisition of new knowledge on how ecosystems operate and the interactions between ecosystems is needed in order to increase mastery of this knowledge and expand environmental engineering, which is a field of engineering for and by the living;

3. Identifying and implementing sustainable funding and incentive mechanisms such as payment for ecosystem services based on voluntary arrangements between suppliers and purchasers and the financial support based on usage-based payment administered by water agencies at the basin level.

Solution

Freshwater fish study in a context of climate change: overview and adaptive measures



Stakeholders

International Office for Water and Aquatic Environments (ONEMA)

The study

Experts have reported declines in habitats favorable to cold water species such as trout and an increase in habitats favorable to species that live in temperate freshwater bodies, such as chub. This study makes an assessment of today's situation and outlines possible paths for adaptation to climate change.

TO FIND OUT MORE

From the "Comprendre pour Agir" / Understand to better act, series of publications from ONEMA : "Freshwater Fish Study in a context of Climate Change : Overview and Adaptive Measures"
www.onema.fr

Challenges

Fish cannot always adapt to climate change, which can result in a risk of local extinction of certain species. A reduction in the average size of individual fish has also been noted.

Strenghts

Approximate the EU Water Framework Directive (WFD) and :

- restore ecological continuity ;
- respect water regimes ;
- limit the warming of water ;
- maintain water quality.

Solution

Environmental engineering applied to aquatic environments: the PhytoRET project (France and Germany)



Stakeholders

The hydrology and geochemistry laboratory of Strasbourg (University of Strasbourg ENGEES; CNRS), the Institute for Hydrology in Freiburg and the University of Luneburg in Germany



The project

The project fits within a regional context of long-term protection of the Rhine aquifer and the Rhine from pollution caused by pesticide residues in surface water. The various actors involved studied the degradation and retention of organic contaminants including pesticide residues or inorganic contaminants such as copper in wetlands following ecological purification.

Challenges

Preserving surface water by reducing pesticide levels to achieve the good ecological status of water set by the EU Water Framework Directive (WFD).

Strenghts

Tests of the most effective ecological extensive processes to facilitate pesticide degradation.

Implementation of results for a sustainable use of water retention structures.

Definition of methods for managing water retention structures by bringing together the relevant actors, local government entities in the Rhine basin, environmental professionals, scientists, etc.

PARTNERS

The Rhin Meuse Water Agency, the Alsace Region, the Rouffach high school

TO FIND OUT MORE

<http://www.astee.org>

READ MORE

The collective work overseen by ASTEE (Scientific and Technical for Water and the Environment association) and supported by ONEMA:

"Environmental Engineering: Why and How?"

By drawing on a variety of experiences, this work, which is intended for decision-makers involved in the management of water and aquatic environments, helps to clarify the concepts and practices of the new field of environmental engineering.

AVAILABLE FOR DOWNLOAD

<http://www.astee.org/production/ingenierie-ecologique-appliquee-aux-milieus-aquatiques-pourquoi-comment/>



EMERGENCY, RECONSTRUCTION AND DEVELOPMENT

Preventing and responding to water-related crises: from Emergency to Reconstruction and Development

Climate change provokes and exacerbates water-related crises.

Water, the source of life, is also a source of tragedy. The frequency and consequences of crises (natural hazards such as floods and droughts, conflicts, human related crises such as conflicts, accidents and pollutions as well as epidemics such as cholera) have worsened in terms of the number of people affected as well as the duration of crises.

During these crises, the supply of drinking water and sanitation services, which are essential for life and human health, may be disrupted or even interrupted, with dramatic consequences for the victims. The entire international community must take better account of these crises in order to limit their impact. The response to these crises must take into account: prevention, response, reconstruction and development. Due to their long term expertise, water stakeholders have an important role to play in recognizing these challenges and adapting policies and practices.

The members of the French Water Partnership push for :

- **Strengthening prevention measures to water related crises**, enhancing notably the resilience of the most exposed and at risk populations.

The renewal of the Hyogo Framework for Action at the conference in Sendai, Japan, from March 14 to 18, 2015, will be an important prerequisite for developing risk prevention action plans for each country, in particular for water-related natural hazards ;

- **Providing an immediate response by improving the coordination among the various actors** to ensure access to drinking water, sanitation and hygiene services to all individuals affected by the crisis.

The adequacy of the response depends on the ability of all actors to mobilize quickly, in compliance with the basic principles of aid relief, and to coordinate closely in order to respond to a variety of contexts and types of crises ;

- **Linking prevention, to emergency response, reconstruction and development.**

- Preparing for the end of the crisis from the first day, in particular in the choice of infrastructure and procedures for allowing affected populations to access water and sanitation services ;

- Ensuring suitable funding for the transitional period between emergency and development ;

- Establishing cooperation and dialogue between emergency and development actors ;

- Strengthen the creation of multi-actor partnerships in reconstruction and development.

Solution

"WASH in Nut" strategy. Integration of a minimum WASH (Water, Sanitation and Hygiene) package in malnutrition treatment programs (Burkina Faso)



Stakeholder

Action Against Hunger (ACF)

The project

As the leading risk factor for children under age five, malnutrition is responsible for the deaths of more than 40,000 children every year in Burkina Faso. Water-related illnesses are very common in this region, which is deeply affected by water stress. They contribute to worsening the nutritional status of populations. In response to alarmingly acute malnutrition rates and several field studies, ACF-France implemented a program in 2008 to strengthen the prevention, screening and treatment of acute malnutrition in children under age five and pregnant and nursing women in eastern Burkina Faso, in particular in Tapoa Province.

Challenges

Helping to reduce poverty and prevent malnutrition in a sustainable manner with local solutions in the Tapoa Province, Burkina Faso.

Strengths

In addition to the core malnutrition treatment and prevention activities, ACF chose to implement the "WASH in Nut" strategy. This strategy sets concrete, comprehensive targets for addressing malnutrition in mothers and children, from health care infrastructure to communities. Developed by UNICEF in 2012 in partnership with humanitarian actors such as ACF, this program aims to reduce diarrheal disease in children in an effective manner and to gain an objective view of knowledge about the link between water, sanitation and hygiene and their impact on treating malnutrition.

START DATE

2008

LOCATION

TAPOA PROVINCE,
BURKINA FASO



TO FIND OUT MORE

<http://www.actioncontrelafaim.org/fr/content/aligning-casestudies>

Solution

Integrated reconstruction, urban development and economic development project for the Christ Roi district



Stakeholder

SOLIDARITES INTERNATIONAL (SI)

Project

SOLIDARITES INTERNATIONAL (SI) has worked since 2010 in the Christ Roi district, where post-earthquake emergency activities were put in place to assist populations in sites for displaced persons. Since 2011, sustainable interventions within the framework of an emergency reconstruction and development-based approach have been implemented in order to help displaced people return to the district.

Challenges

The aim of the project is to make sustained improvements to living conditions in the Christ Roi district. Housing and access to core services are the primary challenges. Sanitary conditions in the area are particularly fragile at the individual level (sanitation; access to drinking water) as well as the district level (public drainage systems; waste collection). Solidarités International supports and coordinates the reconstruction, urban and economic development activities in the district. A development plan and a sanitation plan were drawn up and form a framework for setting up activities.

Strengths

Thanks to a community-based approach, which was used to facilitate the validation of each step of the project and ensured that it was widely accepted by residents, it has been possible to identify the project's true needs. The close ties developed with the Haitian authorities were also one of the primary guarantees of the success of this multi-stakeholder project.

PROJECT START

DATE

JANUARY

2013

LOCATION

CHRIST ROI DISTRICT,
PORT-AU-PRINCE, HAITI

DATE DE FIN
DU CHANTIER:

DECEMBER

2015

PARTNERS

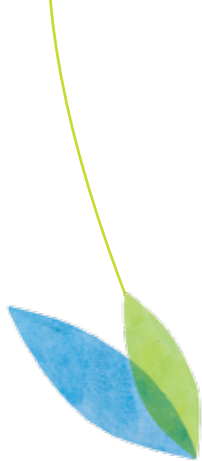
Architectes de l'Urgence (Emergency Architects Foundation), Entrepreneurs of the World, and GRET

BENEFICIARIES:

The 20,000 residents of the Christ Roi district in Port-au-Prince, Haiti

TO FIND OUT MORE

<http://www.solidarites.org/fr/nos-missions/haiti/notre-action>



WATER AND SUSTAINABLE CITIES

Sustainable water and cities: solutions to address global changes

Cities are central to social and environmental changes.

2015 is a key milestone for the international community, which has to both tackle development goals and respond to climate change. Cities are at the center of these environmental and social challenges notably regarding their water and sanitation services, urban planning, and informal settlements.

In this context, France has supported the development of :

- the International Guidelines on Decentralization and Access to Basic Services for All, adopted by the Governing Council of UN-Habitat. Access to basic services for all is both the main indicator and the purpose of effective decentralization ;
- the Third Report of the Global Observatory on Local Democracy and Decentralization (GOLD III). This global report aims to establish a diagnosis of the provision of services and the role of local authorities in different regions of the world. It recommends investing in basic services to reduce inequality and promote development.
- *ISO/TC 224 standards* that provide relevant guidance for good governance of water and sanitation services.

To address these challenges and support local authorities in sustainable urban development, **the members of the French Water Partnership** call for :

- **Regional and local authorities must become the driving force for democratic urban governance**

For sustainable and coherent territorial development strategies, in particular in terms of resource management and access to basic services, local and regional authorities must be recognized and strengthened. This translates into a transfer of skills and resources, the development of local taxation and the establishment of institutional frameworks to promote partnership initiatives;

- **Strategic city planning should promote a greater integration of services**

French stakeholders take a view of urban development that is founded on a search for balance between developing a productive city, an inclusive city and insuring environmental protection, corresponding to the three components of sustainable development. The regions of the future will increasingly rely on short supply circuits by balancing local resources with local needs. Synergies exist between water, sanitation, waste and energy services that can be developed within a framework promoting circular economy ;

- **A shift is needed in the scale of funding for sustainable infrastructure**

The proportion of vulnerable households is growing steadily in urban areas (notably informal settlements). In order to ensure the fairness of services as a whole, mechanisms for solidarity should be placed at the center of pricing policies. More broadly, funding these services cannot be the sole responsibility of users. Additional funding (grants, solidarity, increased value of property, etc.) is needed in order to finance infrastructure. In addition, although the technology exists to deliver socially and environmentally effective services including the involvement of various users, this technology should no longer be funded on a project basis but rather by setting up structural, sustainable funds.

Solution

Reuse project in California



Stakeholder

SUEZ environnement

The project

To manage droughts in southern California, and specifically in the Los Angeles region, by creating a cutting-edge plant to recycle wastewater.

Challenges

Reducing local dependence on water imports and preserving natural water resources with the goal of ensuring a reliable and safe supply of water to the region.

Strengths

United Water, the American subsidiary of SUEZ environnement currently operates the Edward C. Little Water Recycling Facility, a cutting-edge plant that reuses treated wastewater for non-domestic purposes and produces five different qualities of water for uses as varied as watering gardens, irrigation, water supply to boilers and cooling towers in refineries and the replenishment of groundwater resources. Each day it produces 150,000 m³ of recycled water. As a result, the Edward C. Little Water Recycling Facility made it possible to reduce the imports of drinking water by 60 to 80% of total demand. In 2014 the West Basin Municipal Water District renewed its trust in SUEZ environnement by signing a five-year service agreement.

PARTNERS

United Water (subsidiary of SUEZ environnement) and West Basin Municipal Water District

CLIENTS

300 clients including the agriculture sector, municipal authorities and industrialists (Chevron Nitrification Facility, Exxon-Mobil Nitrification Facility)

TO FIND OUT MORE :

www.suez-environnement.com

Solution

Shanghai-Pudong: twelve years of innovation



Stakeholder
VEOLIA

The project

Pudong exemplifies the demographic expansion that characterizes our century. Each week, one million people move to China's large cities, which account for 2% of the planet's surface but represent 75% of energy consumption. In Pudong, VEOLIA implements the most innovative technology in drinking water network management to serve over 3.6 million people under a public-private partnership with the Pudong water service. The partnership manages the entire drinking water system for this financial and commercial district.

BENEFICIARIES

3.6 million residents of Pudong

CLIENT

the Pudong water service

TO FIND OUT MORE

www.veolia.com

Challenges

Addressing the challenges of demographic growth in the city of Shanghai, which has seen its population double over five years and now has 23 million residents requiring access to drinking water and sanitation services.

Strengths

Implementation of the latest generation of treatment technology, real-time monitoring of 4,470 kilometers of network, creation of an ultra-modern water movement control center...the list of innovations goes on and on. The water movement control center in Pudong benefits from the latest network management tools. It can monitor the 4470 kilometers of the drinking water distribution network on a 24h basis thanks to 400 measuring instruments which locate and visualize leaks and pollutions. The Personal Digital Assistant (PDA) completes this program. With just a few clicks, the operators in charge of the network can access 3D views of all facilities and corresponding data. These operators supply to the VEOLIA client data on the time of interventions, team location, images of the progress of maintenance carried out on works and emergency management activities at any time.



UNIVERSAL ACCESS TO DRINKING WATER

Making access to drinking water an effective right for all

1.8 billion people still drink water contaminated by fecal matter.

The members of the French Water Partnership support the 2010 United Nations General Assembly declaration which recognizes the right to drinking water and sanitation as a human right.

Yet despite this declaration, this right is far from being a reality for all human beings. According to the WHO and UNICEF (JMP 2014 report), 1.8 billion people currently consume water contaminated by fecal matter.

The question therefore remains as to how this right should be implemented, particularly as issues differ significantly between countries, and urban and rural areas.

The members of the French Water Partnership ask for :

- **The effective implementation of the human right to drinking water**

Above and beyond official recognition, the human right to drinking water must be implemented effectively by each State, in particular via the establishment of an appropriate legislative and regulatory framework, the interdependent sharing of costs so that prices are affordable for each category of users and user participation in water management.

- **The involvement and reinforcement of local actors (local authorities, civil society and private operators) in the implementation of local public water services**

The responsibilities of various public authorities, service managers and users should be specified. In order to be effective, their collaboration can be based on contractual agreements. A monitoring and regulation mechanism provided by the public authorities will be able to ensure good governance of services. In addition, the focus should be on cooperation among the different types of actors in the sector (public authorities, operators and users) and the effective involvement of citizens so as to enable a good management of water services.

- **Mobilization of sustainable funding that meets the population's needs**

Access to drinking water is financed primarily by three types of funding (the 3 Ts): tariffs, taxes and transfers. This type of funding can be completed through innovative means of financing coming from decentralized solidarity mechanisms (for instance the 1% solidarity mechanism as mentioned in the Oudin- Santini law in France) or other types of funding.

Equalization payments aiming to balance the gaps between the richest and poorest populations can be envisioned so as to insure access to drinking water services for the poorest populations, at an affordable price.

- **Improvement of monitoring databases for the sector**

Monitoring indicators and systems must be improved in order to communicate the extent of real needs in terms of access to drinking water and ensure the effective follow-up and assessment of progress.

Solution

Access to drinking water in rural schools in Morocco



Stakeholder

Secours Islamique France (Islamic Relief France)

The project

In this region of Morocco, schools in a number of rural douars (villages) have no basic infrastructure, particularly with regard to access to drinking water and toilet facilities. Islamic Relief France acted in 2014 in response to this situation.

Challenges

Solving all problems related to access to drinking water and toilet facilities in schools and villages in the town of Gourrama. Reducing the risks of waterborne diseases and the problem of girls dropping out of school.

Strengths

New facilities for the local population achieved convincing results :

- Installation of public taps ;
- Development of protected wells ;
- Construction of sanitary facilities ;
- Development of campaigns to train and raise awareness among teachers.

PROJECT START
FEBRUARY

2014

LOCATION

MOROCCO, IN THE TOWNS AND PROVINCES OF MERZGHERYANE, TAMELKANTE, GOURRAMA AND MIDELT



END DATE
AUGUST

2014

PARTNERS

Secours Islamique Maroc (Islamic Relief Morocco)

BÉNÉFICIAIRES

1024 direct beneficiaries, including 692 students

TO FIND OUT MORE

www.secours-islamique.org



Solution

Fight against Cholera in the Democratic Republic of Congo



Stakeholders

French Development Agency (AFD), the VEOLIA Foundation ,
the Artelia Foundation, the EDF Foundation

The project

Uvira in South Kivu remains a bastion of the infectious agent of cholera. This is partly due to a lack of access to clean water, forcing people to use water contaminated by human activities. The project is based on the conduct of a rigorous impact study led by the London School of Hygiene & Tropical Medicine and a contribution of the French Development Agency up to € 6 million. The French Development Agency will also manage a grant of € 2.5 million delegated by the European Commission.

Challenges

Eradicate cholera in Uvira thanks to a sustainable access to drinking water and an improvement of hygiene practices. This project is part of the French commitments regarding children and maternal health.

Strenghts

This project will concern 150 000 people. It will contribute to reinforcing the capacities of exploitation of the local public establishment Regideso. It will also raise awareness of hygiene preventive measures for local populations.

PARTNERS

The Regideso, London School of Hygiene and Tropical Medecine, OXFAM Great Britain, and the European Union.

BENEFICIAIRES

150 000 persons

TO FIND OUT MORE

[http://www.afd.fr/home/projets_afd/
Eau_assainissement/publications_secteur_eau](http://www.afd.fr/home/projets_afd/Eau_assainissement/publications_secteur_eau)
www.fondation.veolia.com



SANITATION

Sanitation must be a global priority : from access to treatment and reuse of wastewater

One billion human beings are reduced to defecating in the open air (OMS-UNICEF 2014)

Even though the world had set as an objective for 2015 to reduce by half the percentage of population that does not have access to basic sanitation, today 2.5 billion people still do not have access to sanitation (WHO-UNICEF, 2014).

Access to toilets for all is a priority that needs to be carried out alongside measures to manage domestic wastewater. In developing countries, around 90% of wastewater is released in the environment without any treatment thus polluting habitats and the resources for the supply of water and ecosystems (PNUE-UN Habitat ; Sick Water, 2010).

The consequences of this delay are enormous in terms of public health, gender equality, preservation of aquatic environments and economic and social development.

To improve this situation, **the members of the French Water Partnership** call for :

- **Access to basic sanitation for all must remain a global priority**, as set out in the 2010 United Nations General Assembly declaration recognizing the human right to drinking water and sanitation ;
- **Sanitation facilities must always be accompanied by hygiene promotion campaigns**. It is not enough to improve sanitation facilities ;
- **The various steps of the wastewater chain must be taken into account in the implementation of international actions, from collection to treatment and reuse**. Initiatives should take into account the following four issues :
 1. Developing access to collective and non-collective sanitation and hygiene services ;
 2. Collecting and discharging wastewater ;
 3. Treating wastewater and run-offs ;
 4. Recycling and reusing effluents and sludge in accordance with local uses and needs ;
- **Local actors must be involved and strengthened**. Local authorities play a key role in the implementation and improvement of local public water and sanitation services. Each local authority should develop its own strategy, drawn up in cooperation with all local actors in accordance with local demands and needs.. Collaborations should be established with different families of actors (local authorities, associations, private companies and users), together with training and technical support ;
- **The introduction of sustainable funding** that is supplied locally is essential for the viability of the system. The application of the "3 Ts" (tariffs, taxes and transfers) is a particularly important step ;
- It is important to improve **monitoring systems to assess sanitation access and management of wastewater**.

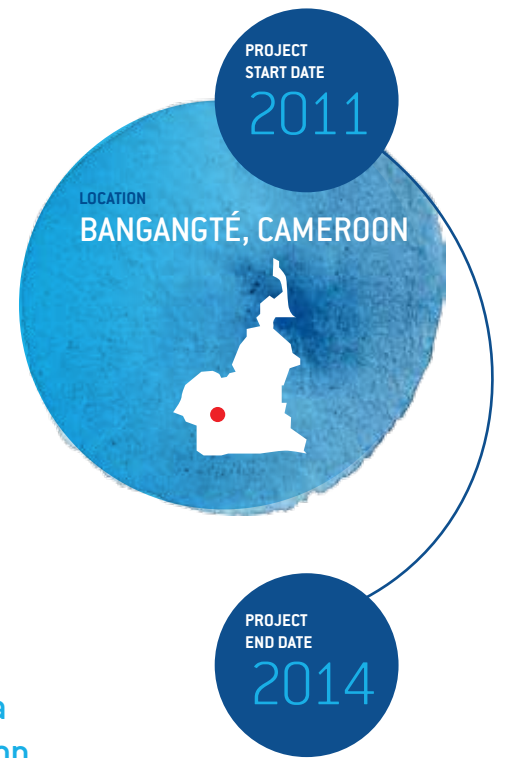
Solution

Community project management in the water and sanitation sectors in Cameroon



•••Stakeholders

Seine-Normandie Water Agency, Veolia Foundation, the Greater Paris Sanitation Authority (SIAAP)



The project

Improving public water and sanitation services is an absolute priority in Cameroon. Only 44% of the population has access to drinking water and 34% to sanitation. Extensive infrastructure funding programs were undertaken beginning in the 1980s, but because of poor maintenance many of them have been discontinued. Since 2011, the town of Bangangté, together with its partners, has implemented a program to improve the conditions of access to water and sanitation for the people of the region. Above and beyond the very significant investment in rehabilitation and building infrastructure, the goal of this project is to improve the skills of local technical services in a sustainable manner and to invent a suitable management model adapted to the context.

PARTNERS

International Association of Francophone Mayors (AIMF)

BENEFICIARIES

110 000 people

TO FIND OUT MORE

www.international.siaap.fr
www.aesn.fr

Challenges

This large-scale program fulfills the primary objective of the decentralization process initiated by the government of Cameroon in 2010: improving the quality of public services provided to the population. This process is linked to a sectorial policy that is intended to be open to local initiatives and provides for transferring the promotion, funding and governance of water and sanitation systems to towns and urban communities.

Strengths

This major program has achieved results in terms of sanitation as well as infrastructure management: Seven drinking water networks were rehabilitated, fifteen ecological blocks of latrines were installed in the town's schools and markets and environmental education committees were set up in schools. This program allowed for the establishment of a public water and sanitation service in Bangangté.

LOCATION
FRANCE

Solution

Seine Morée wastewater cleaning plant SIAAP - France



Stakeholders

the Greater Paris Sanitation Authority (SIAAP)

Project

The Seine Morée plant is used to ensure that wastewater is cleaned very thoroughly while limiting the use of chemical reagents. The plant is in charge of the treatment of the wastewater of six municipalities in the north east of the department of Seine Saint Denis, near Paris. This covers 200 000 habitants. Its construction is part of an integrated vision of wastewater and sanitation management.

Challenges

Achieving the goals of the European Union Water Framework Directive and contributing to the renewal of the Morée, a small stream that crosses the site on which the plant is located.

Strengths

- Using highly innovative technology based on biological treatment and membrane separation of sludge ;
- The Seine Morée plant produces high-quality discharges that can be used for watering and industrial uses ;
- 99% of suspended matter, 95% of carbon pollution, 97% of phosphorous pollution and 70% of nitrogen pollution are removed ;
- The plant architecture meets the very latest environmental requirements.

CLIENTS

six municipalities in the northwestern part of the Seine-Saint-Denis department (Aulnay-sous-Bois, Sevran, Tremblay, Vaujours, Villepinte and a part of Blanc-Mesnil and the Roissy-Charles de Gaulle airport).

BENEFICIARIES

200 000 residents

TO FIND OUT MORE

www.international.siaap.fr



DECENTRALIZED COOPERATION IN ACCESS TO WATER AND SANITATION

An innovative mechanism of international solidarity for universal access to drinking water and sanitation

In 2012, over 250 local government entities in France (regional councils, general councils, cities, large urban areas and water and sanitation unions) as well as the six Water Agencies committed to provide 28 million EUR in aid (2012 Review ; pS-Eau, AFD).

Under the legislative framework of the Thiollière Act (2007) and the Oudin Santini Act (adopted in 2005), the members of the French Water Partnership have pursued decentralized cooperation initiatives with their partners in developing countries.

More broadly, they work to develop decentralized solidarity mechanisms at the international scale, between regions and between local authorities, by combining forces with their European and international partners.

According to **the members of the French Water Partnership**, cooperation among local authorities is an innovative tool for:

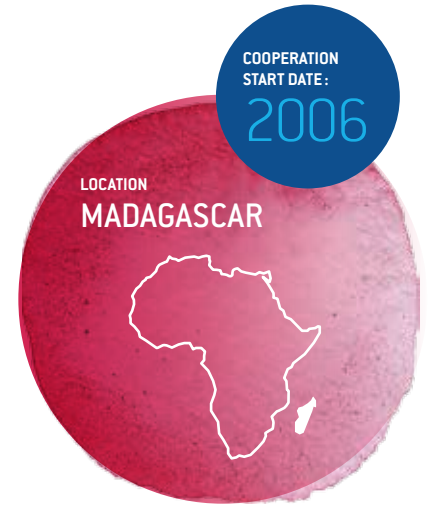
- **Strengthening cooperation among regions and the exchange of expertise [among developed countries, among developing countries and between developed and developing countries].**

Decentralized cooperation allows local authorities in developed countries to provide support to local authorities in developing countries and to promote exchanges between professionals in developed and developing countries, helping to strengthen and improve the management of water and sanitation services in these towns. This type of cooperation can be expanded to promote exchanges among developing countries themselves, thus fostering strong, lasting diplomatic ties among regions and local authorities;

- **Strengthening local authorities' capacities in water management through the effective decentralization of water and sanitation services.**

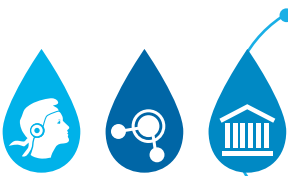
Decentralized cooperation seeks to strengthen the role of local authorities in order to foster the management of services in a local, participatory and sustainable fashion;

- **Ensure access to drinking water and sanitation for all, with the support of innovative financing mechanisms :** The Oudin Santini law allows French local authorities to earmark up to 1% of their revenue from water and sanitation services for international solidarity initiatives within the same sector. Local authorities can bring in other financial partners, in particular Water Agencies, in order to expand and diversify these sources of funding.



Solution

Decentralized cooperation initiative by the Grand Lyon Métropole in the Haute Matsiatra region in Madagascar



Stakeholders

Grand Lyon Métropole, Rhône-Méditerranée-Corse Water Agency, National School for Public Works in Lyon, University of Fianarantsoa.

Project

In a region where half of the population has no access to drinking water, the Grand Lyon Métropole has been working alongside its partners since 2006 to facilitate access to drinking water and sanitation and to help towns in the region of Haute Matsiatra to shoulder their responsibilities for the management of drinking water and sanitation services.

PARTNERS

International Association of Francophone Mayors (AIMF)

BENEFICIARIES

110 000 personnes

TO FIND OUT MORE

www.grandlyon.com

Challenges

- Guide the region's towns so that they can assume their role in the planning and execution of works under the community development plans for water and sanitation (PCDEA)
- Foster the creation of public water services.

Strengths

Implementation of comprehensive solutions :

- Supporting the development of new projects to provide access to drinking water and sanitation ;
- Establishing technical services in partner towns to meet various goals in terms of maintenance, water quality, raising users' awareness, collection, etc. ;
- Strengthening towns' capacities by organizing training programs in partnership with the region of Haute Matsiatra and the inter-regional administration of the Ministry of Water in Madagascar ;
- Developing a computer-based tool to map the region's water resources in order to arbitrate between users. In Haute Matsiatra, conflicts can arise between rice farmers and ordinary consumers of drinking water.

A number of accomplishments have been achieved to date :

- Six water and sanitation supply systems were created in six towns, benefiting 10,000 users ;
- Training the actors of today and tomorrow in the water sector ;
- Completion of nine community development plans for water and sanitation (PCDEA) ;
- Support for the identification of eleven water and sanitation infrastructure projects [sanitary facilities, hand-washing basins, water supply systems, etc.] ;
- Development of a mapping tool.

LOCATION

LAOS, VIENTIANE CAPITAL,
THE PROVINCES OF VIENTIANE,
BOLIKHAMXAY AND SAYABOURY.

Solution

The Mirep (miniature drinking water networks) program in Laos



Stakeholders

Syndicat des Eaux d'Ile-de-France Water Trade Union (SEDIF- drinking water service for the greater metropolitan Paris Area), French Ministry of Foreign Affairs, Seine-Normandie Water Agency, Aquassistance, French Agency for Development (AFD), AusAid, UN Habitat, City of Paris

The project

The Mirep project concerns 19 small towns (between 2,000 and 13,000 residents) in semi-rural areas in Laos. These towns lack the necessary infrastructure for drinking water. These residents rely on rudimentary water supply systems that deliver contaminated water. The Mirep program will mobilize local entrepreneurs within a contractual framework to co-fund, build and manage the water services.

Challenges

Expanding these towns' access to water via a local entrepreneurship project. It remains to be seen in the future how to continue the contract, via which instruments, approaches, actors, etc.

Strengths

- Support to public authorities for the establishment of public-private partnerships ;
- Assistance to engineering firms for designing appropriate water and sanitation infrastructures ;
- Introduction of sustainable financing mechanisms through provincial investment funds ;
- Financing of a sanitation fund for residents in order to set up latrines and a waste-water disposal system.

PROGRAM OVERSIGHT

Department of Housing and Public Planning (DHUP) of the Laotian Ministry of Public works and Transport (MPWT)

OTHER PARTNERS

Laotian Department of Public Works Development Strategy and Transportation (DPWT), Water Supply Regulatory Program Office (WASRO)

BENEFICIARIES

86,000 residents

TO FIND OUT MORE

<http://www.gret.org/projet/mini-reseaux-deau-en-zone-rurale-au-laos/>



WATER AND FUNDING

Moving towards a sustainable financial model for water and sanitation management

An additional 18 billion USD would have been required to achieve the Millennium Development Goals.
[Source : OECD – 2012]

The implementation of the right to access to water and sanitation and the integrated management of water resources require appropriate funding. Water and sanitation services have substantial funding needs. The investment requirements for achieving the Millennium Development Goals were estimated at 18 billion USD per year as well as 54 billion USD per year for the maintenance and renewal of existing infrastructure.

The members of the French Water Partnership call for a sustainable financial model:

- **Water and sanitation services :**

The funding of water and sanitation services is based on three sources : tariffs, taxes and transfers, known as the "3 Ts":

- Tariffs : price paid or invested by the user of water, hygiene and sanitation services ;
- Taxes: Funds coming from internal fiscality and directed towards the water sector via transfers on every level (national, regional and local) : investment or operating subsidies, tax relief, etc ;
- Transfers: Corresponds to contributions made by the international community (donations or elements including loans) such as funds allocated by international backers or NGO projects ;

The following measures need to be implemented to improve the system :

- **the reduction of service costs through improved management** (reduction in leakage, development of appropriate technology for needs, on-site sanitation solutions, etc.);
- **the optimization of resource allocation with subsidies concentrated on the funding** of access to services for the poorest, most vulnerable populations;
- **the development of regional equalization mechanisms at the local as well as international** scales (Oudin Santini law : French local authorities can earmark up to 1% of their revenue from water and sanitation services for international solidarity initiatives within the same sector).

- **Integrated management of water resources :**

Mobilization of sustainable funding so that organizations in the basin can ensure the efficient monitoring of water resources and regular dialogue among users.

Solution

Access to drinking water in Phnom Penh



Stakeholder

French Agency for Development (AFD)



BENEFICIARIES

Phnom Penh Water Supply Authority (PPWSA) and about 100 000 new households per year in the Phnom Penh area.

TO FIND OUT MORE

www.afd.fr
www.ppwsa.com.kh

The project

The capital, Phnom Penh, is home to 10% of the population of Cambodia. It has grown from 950,000 to 1.3 million residents over the past decade. The demand for water has grown steadily. The PPWSA, autonomous public water utility under the authority of the Ministry of Industry, Mines and Energy (MIME), in charge of producing and distributing water in Phnom Penh and the surrounding neighborhoods, had to implement a sustained investment program over the past years in order to meet a steadily increasing demand for water. Since 2006, the AFD has supported the PPWSA by providing non-sovereign loans to carry out its investments to expand its drinking water network and increase its water treatment capacity.

Challenges

Increasing drinking water treatment capacity and the distribution network for the population of Phnom Penh.

Strengths

The results are telling : in 2010, less than 50% of residents in the urban area had access to drinking water. Today the coverage rate is 90%. In surrounding neighborhoods, the number of water connections has doubled : 10,000 new households should be connected in each coming year. The public service has today strong performance and technical capacities.

This program is an Asian success story.

Two key studies on financing, by the French Agency for Development (AFD)

• The handbook for integrated resources management in transboundary basins of rivers, lakes and aquifers

A manual on the integrated management of water resources in transboundary river basins, lakes and aquifers at the international scale.

This collective work provides practical recommendations that can be used to improve the management of freshwater resources shared between countries.

• Payments for environmental services (PES)

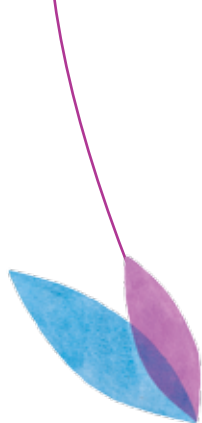
Traditional policies alone cannot prevent the degradation of biodiversity. Payments for environmental services can be a solution to address these shortcomings. This is a tool designed to have an impact on the practices of producers in a way that favors the environment. This scheme allows producers to pay voluntarily for an environmental service. It is therefore not a constraint.

TO FIND OUT MORE

www.afd.fr/webdav/site/afd/shared/PORTAILS/SECTEURS/EAU_ET_ASSAINISSEMENT/pdf/gestion-integree-ressources-eau-afd.pdf

TO FIND OUT MORE

<http://www.afd.fr/webdav/site/afd/shared/PUBLICATIONS/RECHERCHE/Scientifiques/A-savoir/07-A-Savoir.pdf>



WATER AND TRAINING/ CAPACITY BUILDING

Strengthening skills in water and sanitation-related professions is essential throughout the world and at all levels

From plumbing to engineering, initial and continuous training are key factors for water-related professions

Water management encompasses a number of fields (drinking water, sanitation, water for agriculture, biodiversity, etc.), all of which require specific skills. These skills, whether technical (maintaining and operating drinking water and sanitation services) or organizational (planning related to water uses and services), are the necessary conditions for successful development of the water sector.

Strengthening skills in water and sanitation-related professions, from initial to continuous capacity building, is now, more than ever, a key priority if we do not want water, a rare resource, to become one of the limiting factors for sustainable development in many countries throughout the world.

The members of the French Water Partnership recommend reinforcing skills and developing professional training at the national level in international cooperation projects, as well as experimentation, assessment and the exchange of skills in professional training.

Achieving these objectives requires:

- **A better awareness**, at the global level, of the importance of professional training (both initial and continuous) at all levels, from technicians to managers;
- **The creation or support of new training centers** around the world with the necessary skills and educational tools and participation in regular exchanges to improve the sharing of experiences ;
- **Taking into account** training in development, institutional cooperation and decentralized cooperation projects;
- **Training centers with higher levels of professionalism** and which meet measurable requirements in terms of quality and effectiveness (e.g. labels)
- The creation of **sustainable funding mechanisms**.

LOCATION
QUEBEC PROVINCE,
CANADA

Solution

QUEBEC'EAU training



Stakeholder:

International Office for Water (IOWater)

The project

Réseau Environnement and the International Office for water are launching Quebec's first professional training portal : QUEBEC'EAU training.

PARTNER

Réseau Environnement

BENEFICIARIES

Quebec water stakeholders

TO FIND OUT MORE

International Office for Water

www.oieau.fr

Réseau environnement :

www.reseau-environnement.com

Challenges

With nearly 3% of the world's freshwater resources, Quebec's water management policy has evolved since 2012. Production, drinking water supply systems and the improvement of sanitation systems require the staff water sector companies to constantly update their skills in order to incorporate the latest technologies and regulatory changes.

Strengths

The QUEBEC'EAU portal will enable Quebec water stakeholders (elected officials, government services, water service managers, engineers, technologists and operators) to find possible solutions to their training needs. It will allow water stakeholders to continually improve their skills in order to provide citizens with high-quality drinking water and sanitation services.



Solution

The "Water for All" Chair



The project

The Chair is developing a research program and has created a "Water for All" Executive Master's degree program.

Challenges

Strengthening the skills of leaders and operational managers identified by local operators to support change and improve services within the urban perimeter of a capital city or a secondary city in their country. The students and actors come from developing, emerging and transition countries.

Strengths

Since its creation in 2008, 119 managers from 32 countries and four continents (Africa, Asia, the Americas and Europe) were trained by more than 120 teaching staff and coaches from SUEZ environnement and other French companies. Nearly 90 cities are now equipped with more than 70 strategic action plans drawn up for periods of 15 to 20 years. These plans represent an annual distribution of 900 million m³ and are projected to increase to two billion m³ by 2035 based on the expected rates of urban growth for these continents. This transfer of knowledge improves water management for more than 35 million residents. Given the strength of this success, the partnership has been renewed for another six years.

OTHER PARTNERS/FUNDERS

SUEZ environnement Initiatives Fund,
French Agency for Development (AFD),
the Water Agencies

BENEFICIARIES

119 managers from 32 countries
and 4 continents

TO FIND OUT MORE

Fonds SUEZ environnement Initiatives :
www.suez-environnement.fr
AgroParisTech :
www.agroparistech.fr

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Glossary of the FWP

Pictogram of our Colleges

-  Government and Public Institutions
-  NGOs, non-profit Organizations and Foundations
-  Local Authorities and Parliamentarians
-  Economic Stakeholders
-  Technical, Scientific, Research and Training Organizations
-  French and International Individuals

Pictogram of our themes

-  Access to drinking water
-  Sanitation
-  Water basin management
-  Food Security
-  Energy
-  Emergency, Reconstruction and Development

-  Biodiversity
-  Global and Climate Change
-  Sustainable Cities
-  Solidarity Mechanisms
-  Innovations and French Know-how
-  Governance
-  Financing
-  Training



PRESENTATION OF THE FRENCH WATER PARTNERSHIP

The French Water Partnership (FWP) is a non-profit organization founded in 2007 on World Water Day.

It is a French platform for discussing and exchanging ideas that helps to place water at the top of the global political agenda. It also helps to share the collective know-how of French players throughout the world. The FWP now counts more than 120 members from the public and private water sectors.

The FWP consists of six panels made up of representatives from 1) the government and its public institutions; 2) NGOs, organizations and foundations; 3) regional authorities and parliamentarians; 4) economic players; 5) research and training establishments and 6) French and foreign private individuals. It carries out its activities in a collaborative manner, without any category of members taking priority over the others. Together they develop common, consensus-based messages and communicate them in European and international bodies and networks such as the United Nations, the European Union, the Union for the Mediterranean and at events such as the World Water Forum and the World Water Week in Stockholm.



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www.partenariat-francais-eau.fr

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