

WATER & CLIMATE, TIME FOR ACTION

Initiatives and projects by French stakeholders
to respond to climate change

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WHY THIS BOOKLET?



Jean Launay
French Water Partnership
President

Climate change demands unprecedented mitigation and adaptation efforts from the countries of the world. The water sector in particular is central to these concerns currently expressed in the Nationally Determined Contributions. For reasons of consistency, “water” projects must prioritize both mitigation and adaptation: programs to save water and to combat natural disasters, technologies that are energy efficient or produce energy, programs that help to improve carbon storage (management of forests, crops and soils) or to protect against damage to our biodiversity.

The Paris Climate Conference, COP21, and those that followed, established in parallel with the official negotiations between the States a [Global Climate Action Agenda](#). This Agenda shows that many stakeholders, and in particular local authorities and businesses, were implementing solutions supporting the fight against the consequences of climate change, which deserved to be made widespread. It now seems crucial that [we get the Action Agenda process initiated with the Marrakech Partnership](#) back on track, a wish expressed by the United Nations Secretary General at last September’s Climate Summit for Heads of State, and at COP25 in Spain.

Scientific knowledge gained since the Paris Agreement shows that meeting the target of 1.5 or 2°C will require nations to [raise their ambitions and act on their commitments](#). There are many known solutions, which are nevertheless insufficiently implemented. [The aim of this booklet is therefore to share the initiatives and projects implemented in France and overseas by French stakeholders mobilized as part of the French Water Partnership.](#)

The [2030 Agenda](#) for Sustainable Development contains 17 Goals and 169 targets, 21 of which are related to water. It is a [universal, integrated and inclusive agenda](#). It provides an operational framework, as its targets are specific and measurable and [set common goals](#). The initiatives and projects implemented by French stakeholders fit within this framework. This booklet is an opportunity for water stakeholders to issue a reminder that water is [a lever in the fight against climate change, and for achieving the 2030 targets too!](#)

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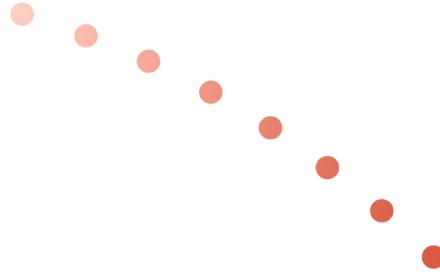
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IT'S TIME TO ACT!



While water is a resource essential to life and to the development of our societies, it is today subject to increasingly significant anthropogenic pressure driven by a host of factors such as population growth, rapid urbanization, industrialization, pollution, and changing ways of living, which are increasingly threatening water resources.

The publication of the IPCC's three most recent special reports has sounded the alarm once again about the risks related to global warming of 1.5°C, and in particular about the impacts of climate change on already fragile water resources: a rise in global warming of 1.5°C to 2°C could increase the number of people exposed to climate risks by several hundred million by 2050, and the proportion of the world's population subject to water shortages by 50%. Every tenth of a degree over and above 1.5°C will have major impacts on water resources. Furthermore, water is the primary vehicle of climate change, responsible for droughts, floods, hurricanes, rising sea levels, all contributing in the long term to the degradation of lands and of aquatic biodiversity.

And yet, despite warnings from the scientific community, global commitments in terms of greenhouse gases are currently taking us on a trajectory of average global warming of +3°C to +3.2°C by the end of the century. If nothing is done to curb this warming, the new climate regime will entail significant challenges as far as the management of water resources is concerned, in many countries.

Consequently, concrete measures must be implemented in order to progress towards integrated, sustainable management of water resources and access for all. These are also the aims of the Paris Climate Agreement and the 2030 Agenda with its 17 Sustainable Development Goals (SDGs). One of the 17 SDGs is devoted to water and sanitation (SDG 6), while the remaining SDGs, with 12 targets related to water, highlight its cross-cutting nature. Another is dedicated to measures relating to the fight against climate change (SDG 13), and two more to biodiversity (SDGs 14 and 15).

SUSTAINABLE DEVELOPMENT GOALS



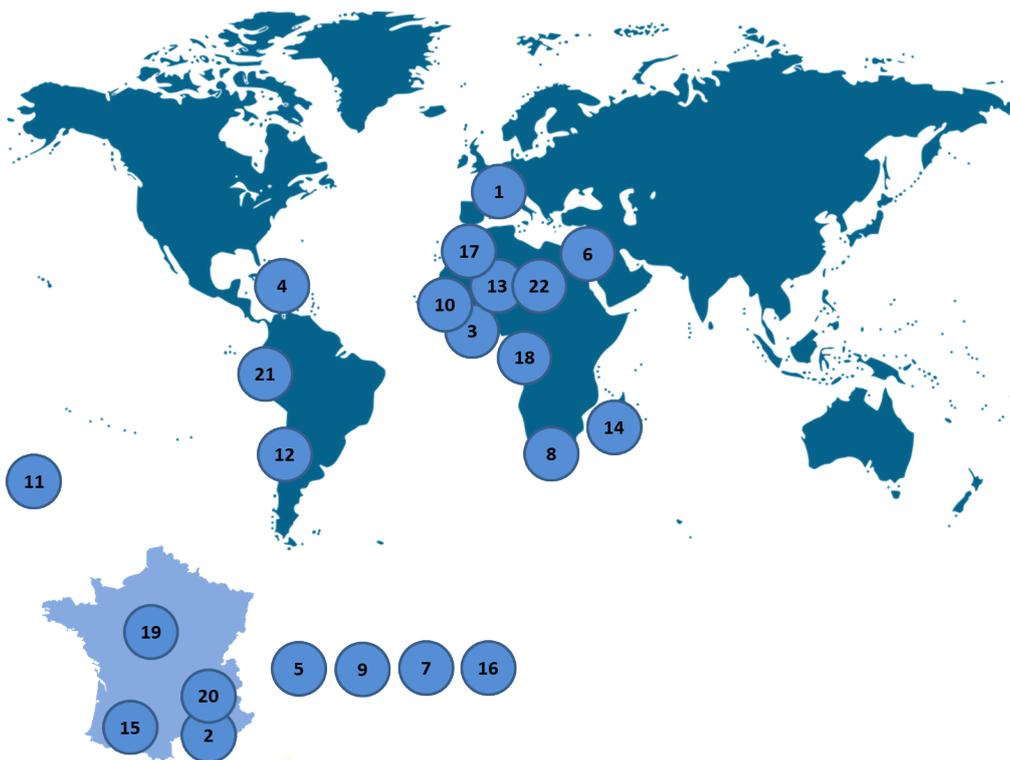
INITIATIVES AND PROJECTS BY FRENCH STAKEHOLDERS IN WATER

This concerns us all!

There are a variety of challenges to be met: access to drinking water for all, the sustainable management of the resource, the fight against pollution and the protection of aquatic ecosystems. To meet these challenges, all public and private French stakeholders are committing in France and internationally by suggesting and implementing actions. For solutions exist where water is concerned!

Find out about their actions in France and worldwide, from various geographies all of which are contributing to the fight against climate change, to protecting the environment and biodiversity, and to achieving the Sustainable Development Goals.

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Gret

Managing water resources and aquatic environments better

Participatory governance, the particularity of the French approach

The policy for the management of water resources and aquatic environments in France reflects our changing awareness of the challenges that our society must face, such as access to safe drinking water and sanitation, the impacts of climate change, and the erosion of aquatic biodiversity. The hallmarks of France's water governance include its management of the resource by hydrological basin, the diversity of its water stakeholders, with both professionals and users involved, and the wealth of approaches and tools it is developing such as planning for Integrated Water Resources Management (IWRM), fees, and the implementation of a common water-information system for collecting, sharing and disseminating data on water and aquatic environments.

1. Fighting the impacts of climate change

The second national adaptation plan

Ministry for the Ecological and Inclusive Transition

At the end of 2018, France adopted a second national climate change adaptation plan (PNACC-2), which will be implemented during the five-year term of office. It aims to implement the actions necessary to adapt France by 2050 to a

2°C rise in the Earth's average temperature compared to the pre-industrial era by involving regions and major sectors of the economy such as agriculture, industry and tourism. The implementation of these actions will be based on four new priorities: the territorialization of the adaptation policy, the overseas territories, the use of Nature-based Solutions, and the involvement of economic sectors.



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2. Basin plans for adapting to climate change in the Rhone-Mediterranean and Corsican basins...

... for better management of the water resource

Rhone-Mediterranean and Corsica Water Agency

An adaptation plan for water was drawn up for the Rhone-Mediterranean basin (2014) and the Corsican basin (2018). These plans identify some 60 actions to be undertaken in order to reduce the regions' vulnerability to the effects of climate change. Faced with the reality of widespread vulnerability to climate change, for water management the question is not

whether to act or even how. But where, and what should be the priorities for investment? The sectors must be identified where faster or stronger action must be taken due to climate change, and these must be the focus for effort. A method of diagnosing vulnerabilities has been developed for mapping the sectors in which priority action must be taken.



For further information:
https://www.eaurmc.fr/jcms/gbr_5019/fr/en



3. Support for the integrated management of water resources in the Ouémé basin (Benin)

Nature-based Solutions

to support the integrated management of flood risk and of water resources in the delta of the Ouémé and of Lake Nokoué (Benin)

Seine-Normandy Water Agency (AESN)

The aim of this project is to operationalize Integrated Water Resources Management (IWRM) by monitoring the “blue line” of floods, a recurring annual event whose distinctive occurrence has a very significant impact on populations in the area of intervention. By monitoring this “blue line” of floods, the program will touch on the other issues linked to IWRM (water quality, conflict, etc.). Thanks to this project, the actions of the International Centre for Development and Research (CIDR) will be enhanced by the added value of the AESN in terms of the governance and planning that are central to the overall program. The AESN’s support will focus specifically on innovative aspects in

Benin: establishing Planning for Preventing and Managing Flood Risk; strengthening ecological engineering for implementing Nature-based Solutions (NbS). This project will also help to broaden governance to the whole of the Ouémé catchment area. And exchanges of experience will be organized with other areas of West Africa to improve sharing of experience around the IWRM and the NbS. Finally, this project also aims to develop a lasting partnership between the AESN and the Ouémé Basin Agency.



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4. Vegetation-based filters for treating domestic wastewater in tropical environments

Guide for sizing filtration installations in tropical areas

**National Research Institute of Science and Technology for Environment and Agriculture (IRSTEA)
Office De l’Eau de la Martinique**

This guide is aimed at project owners and project managers, and was designed as a tool to support the design and implementation of a project to treat wastewater using vegetation-based filters. The French overseas departments present particularly sensitive challenges in terms of sanitation. One of the major problems stems from an imperfect matching of technologies to the specific context of the tropics. The recommendations presented here, developed within the framework of the research carried out in the French overseas territories, can be used throughout the tropical zone. This guide summarizes ten years of

research conducted across the five overseas departments aiming to adapt technologies which have mostly been tried and tested in temperate climates. The lessons learned are based on extensive monitoring, together with a specific study on the choice of plants.



For further information:

<https://epnac.irstea.fr/wp-content/uploads/2018/02/FPV-Tropical-vert-web.pdf>

5. Monitoring intermittent waterways...

... to better understand the impacts of climate change

French Agency for Biodiversity (AFB)

National Research Institute of Science and Technology for Environment and Agriculture (IRSTEA)

Intermittent waterways are characterized by annual or irregular periods where their beds dry out, often exacerbated by anthropogenic pressures. They represent major challenges in terms of biodiversity (aquatic-terrestrial ecosystems, water quality, ecological continuity, etc.). There is still little understanding of the intermittent pattern, the hydrological processes, the biogeochemistry, the economic value and the social perception of these waterways, and they are therefore poorly integrated and protected within legislation. In 2012, the AFB set up the National Observatory for Low-water Flows. This network of 3,300 stations focuses on small waterways

at the heads of catchment areas, which are generally more vulnerable to drying up (<https://onde.eaufrance.fr/>). The AFB has been working in partnership with IRSTEA since 2016 to improve knowledge of intermittent waterways and of the impact of hydrological changes on this category: (i) using the National Observatory for Low-water Flows to model the risk of intermittence at the regional level, and determine drought thresholds, (ii) monitoring fish populations in intermittent waterways to understand the impact of human activities and (iii) participating in a COST (European Cooperation in Science and Technology) action financed by the European Commission to link water stakeholders with researchers involved in monitoring intermittent waterways, and develop capacities and knowledge.



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6. Sanitation in Jordan

Dealing more effectively with water stress while improving sanitation in the Balqa region

French Development agency (AFD)

In Jordan, the quantity of available water is one of the lowest on the planet at no more than 135 m³/inhab./year, placing the country well below the shortage threshold. Yet demand for water is growing, driven particularly by demographic pressure which is heightened by the influx of refugees from the Syrian crisis. In this context, the AFD has granted a

sovereign loan of €60 million to finance a project to restructure and extend the sanitation system in the Balqa area north of Amman. By collecting and treating wastewater, the project will improve the service for the population of more than 350,000 inhabitants, protect the resource, and reuse treated wastewater for irrigation in the Jordan Valley. As well as assisting adaptation to the effects of climate change, the project will also contribute to mitigation efforts by recovering the biogas produced during treatment.



7. Co-processing of sewage sludge and of the organic fraction of residual household waste

The Cométha project, an innovative partnership
The Greater Paris Sanitation Authority (SIAAP)

Central Joint Association for Domestic Waste Treatment (Syctom)

SIAAP and Syctom, public services in the Ile-de-France region and industrial players, are facing major technical challenges in a high-density urban region. The Cométha project aims to reduce greenhouse gases by recovering as much as possible of the carbon contained in liquid and solid waste. These are converted into renewable and recovered energy in the form of bi methane. With its R&D phase already complete, the project will enable all of the sewage sludge and the organic fraction of household waste that has not already been composted to be treated. The manures and fats from the treatment of wastewater are also involved. Methanization of these products produces renewable energy (biogas), which is injected into gas networks to fuel vehicles, heat pre-

mises, produce electricity, etc. Moreover, the Cométha project also uses innovative processes to convert the material derived from methanization (digestate) into gas, which is also injected into the networks. This maximized production of gas helps to mitigate climate change by reducing the production of greenhouse gases.



For further information:

https://www.syctom-paris.fr/fileadmin/mediatheque/documentation/cometha/Cometha_Dossier-information.pdf

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8. Solar desalination plant in South Africa

First desalination plant directly powered by photovoltaic solar energy, without batteries

Mascara Renewable Water

The OSMOSUN® sea water desalination unit produces 100m³/day. The system is powered solely by solar energy, with no batteries, and produces up to 350m³ in hybrid mode when connected to an energy grid. Installed in South Africa's Western Cape province, the OSMOSUN®16 SW desalination unit is operated by Turnkey Water Solutions to supply water to the region's population of over 3,000 inhabi-

tants. This project was deployed in 2018 with French and South African funding.



For further information:

<https://mascara-nt.fr/en/project/osmosun-16-sw-witsand-solar-desalination-south-africa/>

9. Solar-powered drip irrigation system creating water savings

More accurate, better dosage, more resistant

NRC Bio Innovation

Autonomous-solar powered drip irrigation saves water and widens access to drip irrigation systems. This system delivers water straight to the roots, and synchronizes flow rate with requirements. It can also tolerate particles of over 2 mm and biofilms.



For further information: <https://solar-dripper.com/en/>

10. Renovation and construction fund for adapting to flood risk

A financial mechanism serving inhabitants of Senegal's Dakar suburb

urbaMonde

Dakar has seen an increase in floods in the past three decades. Although some projects have been completed to mitigate them, there have been few in the suburbs of Dakar. In response to the lack of financial instruments suitable for vulnerable populations, a revolving fund was created to rehabilitate housing, with its capital renewed by loan repayments. It is based on solidarity-based aggregate savings by

savings groups from the Senegalese Federation of Inhabitants (FSH, some 5,000 members). Trust and solidarity are key factors for success: the loan recovery rate is close to 95%. The fund is (i) a sustainable, effective financial tool: because it is a revolving fund, the initial investment is future-proofed and its impact augmented, (ii) a tool promoting social organization (empowerment) and internal cohesion, since it is managed by the FSH, supported by a Senegalese association, UrbaSen, and (iii) a tool for 'bottom-up' political advocacy: the financial capital boosts the ability of inhabitants, both male and female, to negotiate with public and private actors. Supported by Gret and urbaMonde, the FSH and UrbaSen are extending this fund to finance community works in public spaces to reduce the impact of floods and improve quality of life in their neighborhoods.



For further information:

<https://www.gret.org/projet/gestion-integree-du-risque-inondation-a-dakar-pikine-irregulier-nord-guediawaye-ping-giri/>



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11. Supporting drinking water and sanitation services against the impacts of climate change

Supporting water and climate stakeholders with the guide “Water and Sanitation Services against Climate Change. What impacts? How should we act?”

Water Solidarity Program (pS-Eau)

Water and sanitation services are particularly vulnerable to climate change. They are dependent on the availability and quality of water resources, which are themselves strongly impacted by climate change. Furthermore, fluctuations in climate can directly impair the functioning of the services and their viability over time. Against this background, pS-Eau drew up a guide, published at COP24, which aims to provide the keys to understanding the impacts of climate change on water and sanitation services. The guide suggests operational avenues for reflection for adapting

services and for mitigation in developing countries. It also incorporates broader considerations, related to other essential services such as the management of water resources and stormwater management.



For further information:

https://www.pseau.org/outils/ouvrages/ps_eau_wash_services_climate_change_impacts_and_responses_2018.pdf

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12. Santiago treatment plant in Chile

One of the five biggest treatment plants in the world, helping to treat the wastewater from 7 million inhabitants

Suez

Located to the west of Santiago, Chile, the La Farfana water treatment plant is one of Suez’s concrete responses to the challenge of climate change. La Farfana, the world’s first biofactory, has even higher ambitions: it is poised to meet its objective of zero waste, zero environmental impact, and zero consumption of fossil fuels. The plant recovers 100% of wastewater, converting it into new resources such as biogas for producing electricity and heat, and turning sludge into fertilizer for the region’s farmers. 100% of the biogas produced from the sewage sludge is reused. On 11 December 2018, La Farfana received the “Momentum for Change” award. Led by the United Nations, this initiative highlights the most innovative projects throughout the world in the fight against climate change. The biofactory concept is

applied to all of Greater Santiago’s treatment plants: La Farfana, Mapocho, and El Trebal. La Farfana is the biggest plant in terms of capacity. By recovering sludge, the three plants produce 49 million kWh of electricity, the annual consumption of 50,000 inhabitants, plus 177 kWh of natural gas, the annual consumption of 22,500 inhabitants.



For further information:

<https://www.youtube.com/watch?v=iikik-kASBt8>

13. The Sahelian bocage

Where to re-use runoff

**The Mil'Ecole association,
presented by the French Committee of Hydrogeologists (CFH)**

Rainfall in the Sahel is concentrated over four months and generates runoff, eroding soils that are devoid of vegetation. Slash-and-burn, grazing, and demand for wood are desertifying the savannah. In order to recover rainwater and reduce erosion, Terre Verte (supported by Mil'Ecole) has designed a bocage of hedges and embankments arranged in 100-hectare blocks of individual parcels (160 m x 40 meters). The blocks are surrounded by levees and fences, and each parcel has



*For further information:
info@eauterreverdure.org*

lateral levees made from the material excavated from a basin at the low point. In this way, the rain that falls on a field is held back and can seep into the soil. The seeds are sown in bowl-shaped holes, and the excavated material is arranged downhill of each one in a crescent shape (the zai), forcing the water to seep down where the plant is growing. Shade trees are planted in a "root well" dug through the laterite. With balanced crop rotations, productivity is two to three times higher and the desert is reclaimed by vegetation. The grazed fallow is beneficial to nomadic pastoralists. The investment costs €800/ha. The main difficulty relates to the ownership of the communal land.



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14. An early-warning system in Madagascar to improve humanitarian aid

Study of the relationship between hydro-climatic and nutritional data

Action Against Hunger (ACF)

Acute Malnutrition (AM) is prevalent in Madagascar, and its southwestern region is a hot spot for climate change. AM is multifactorial and linked to climate via its impact on water resources and food security. It is hard to identify the underlying causes of nutritional crises, and consequently to

anticipate and manage them. Between 2014 and 2016, Action Against Hunger installed 10 piezometric probes to monitor groundwater and a meteorological station in the district of Betioky, enabling quarterly bulletins to be produced for monitoring the hydro-climatic situation. Our project aims to 1) study the relationship between nutritional and hydro-climatic indicators; 2) support the set-up of a more reliable data-collection system to provide scientifically robust alerts about climate and nutritional crises in the region. Our results will contribute to a better understanding of the link between trends in MA and hydro-climatic indicators. They will also support anticipation of and an improved response to nutritional crises related to water resources and climate.



*For further information:
<https://www.actioncontrelafaim.org/notre-expertise/eau-assainissement-et-hygiene/>*

15. Stronger water governance in southwest France

An innovative political initiative for implementing adaptation measures

Adour-Garonne Water Agency

The Garonne 2050 prospective study conducted by the Adour-Garonne Water Agency established the predictable fall in river flows from 20% to 40% due to climate change. This challenge means that stronger water governance is needed. It was in this spirit that the Adour-Garonne basin “Entente pour l’eau” water agreement was created, linking the Basin Committee, the Occitanie and Nouvelle Aquitaine regions, and the State. This unprecedented political commitment is represented in a road map which focuses on five priorities: (i) support a water-savings plan, (ii) develop nature-based measures such as restoring wetlands, (iii) optimize existing water reserves and mobilize additional

resources, (iv) support the emergence of new practices by building on learnings from research, (v) actively combat artificialization and soil loss. This political impetus, perpetuated by a collaboration between the services of the Agency, the State and the regions in order to help implement the action plan, is crucial in view of the difficulties posed by the conflicts of uses inherent to water-sharing issues.



For further information:
www.eau-adour-garonne.fr

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16. Developing tools for modeling and for managing groundwater in extreme conditions

From reservoir-type models to an aquifer-modeling platform

Geology and Mining Research Institute (BRGM)

In the context of global change, pressures on groundwater are intensified with extreme events. Two types of approach have been developed in France, based on meteorological, piezometric and hydrological data: forecasts by water point with the “MétéEau des nappes” groundwater forecast, and the AQUI-FR national hydrogeological modeling platform, based on existing hydrogeological models. These help to improve knowledge about past, present and future groundwater resources. With the first type of approach, the data can be visualized in real time and forecast simulations carried out. The forecasts are compared to piezometric thresholds for droughts or floods. The second type makes it possible to spatially

simulate changes in the status of the water resource on different time scales (real time, 10 days, 3-6 months) and for climate change scenarios, for 13 regional models and 23 global models with reservoirs. This real-time information is very useful to managers and users of groundwater. These types of approach can be used in other contexts and countries, as long as data from hydrogeological and meteorological observations is available or existing hydrogeological models can be used.



For further information:
<http://www.geosciences.ens.fr/aqui-fr/>

17. Rural development integrated downstream of the Kaddoussa dam, Morocco

Rural Development and Adaptation of Agriculture to Climate Change
French Development agency (AFD)

On the Boudnib Plain, farming used to be only possible around the wadi. The degradation of infrastructures, due in particular to severe floods and to the fragmentation of land ownership, resulted in the abandonment of these oases. More recently, large farms have developed outside the oases, using groundwater resources for the intensive production of Majhoul dates for export. However, these new activities

cannot be continued sustainably without the guarantee of regional balance, an inclusive economic impetus for the population of the oases, and the sustainable management of water resources. With a budget of €76M, the project aims to boost resilience to climate change in the oases, through infrastructure and the diversification of activities, and to make agriculture more sustainable particularly by preserving groundwater resources and optimizing the use of surface waters. The project will help more than 15,000 people, and address gender inequality issues through a holistic approach to social development which aims to improve living conditions and coexistence between women, men and young people within the oases.



For further information:

<https://www.afd.fr/fr/developper-une-agriculture-irriguee-productive-et-durable-dans-la-zone-des-oasis>



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18. Enhancing hydrological monitoring in the Congo Basin... ... for water management that takes account of climate change

International Office for Water (IOWater)

The SWOT-downstream preparatory program aims to facilitate the use of products derived from spatial technology in hydrology, and to trigger the development of services and applications for adaptation to climate change. The Congo Basin was chosen as the pilot basin for this program, and an agreement was signed between seven French institutions (forming the "Working Group on Spatial Hydrology" and bringing together the CNES, IRD, Irs-tea, French Development agency (AFD), International Office for Water (OIEau), BRLI and CNR) at the COP22 in Marrakech, with the aim of initiating collaboration with the International Commission of the Congo-Oubangui-Sangha Basin (CICOS),

the transboundary basin agency for the Congo River. With the support of the AFD, this work has enabled a Hydrological Information System to be created. This system is one of the first to combine in-situ data with data derived from spatial altimetry within a single environment. Current challenges for the CICOS include raising awareness of the Hydrological Information System among relevant stakeholders in the different countries, organizing exchanges of data with the national hydrological services, making the tool durable, and developing it, particularly with the development of downstream services. Initial applications have been developed to improve river navigation (less polluting means of transport) and hydroelectricity (non-carbon), and others are in progress to improve knowledge about the central basin (flooded tropical forests).



19. Agro-ecological transition through the move to soil-conservation agriculture

The example of Mr Frédéric Thomas's farm

French Academy of Agriculture

Sologne Central Agricultural Committee

Water and soil conservation agriculture is a solution to the climate problem (adaptation and mitigation) and the food issue, particularly in the Sologne where the land, consisting mostly of sandy soils on clay, is highly unproductive. The low fertility, excessive moisture and waterlogging of the soil is therefore a constant concern to the area's inhabitants. As a young farmer, Frédéric Thomas had the opportunity to work in the United States for three years. On his return to the family farm in 1996, he dispensed with highly aggressive tillage in favor of direct seeding and high-biodiversity agriculture. Multi-species plant cover alternates with commercial crops and "feeds the ecosystem" (worms, bees, etc.). Problems of hydromorphy are considerably reduced, and increasing amounts of carbon are stored in the soil. Perma-

nent cover, and continued improvement in soils, also have the advantage of reducing water loss by evaporation and increasing the easily usable water reserve (RFU). Formerly at 35 to 40 mm, it now exceeds 200 mm in the best parcels, enough to maintain a maize crop for one and a half months in dry weather. With conventional tillage, on the other hand, hundreds of mm of water do not infiltrate into the soil.



For further information:
www.sologne-avenir.fr

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20. The water-energy-food nexus in a context of climate change

Water saving in the Durance valley

Electricité De France (EDF)

EDF operates a chain of 32 hydroelectric power plants (2,000 MW) along the Durance and Verdon valleys, where water resources are under considerable pressure. In order to optimize water management to meet the needs of its different uses, EDF used a method of evaluating the value of water to facilitate the decision-making process. The aim is to optimize the distribution of water between energy production and irrigation, and to offer incentives to save water that will help restore financial margins and meet future needs. The result is an agreement with water-saving objectives, signed by EDF and the two main irrigators for a six-year period, in which EDF has committed to remunerating partners for the savings made. A number of amendments to this agreement have been signed, resulting in a reduction in annual agricultural consumption of

around 30% (from 310 to 200 Mm³). This approach has been extended to a broader scope with the commitment of the Water Agency, and a new agreement has been signed for the period 2014-2022, including a new concept of solidarity between the stakeholders upstream and downstream. This win-win solution has benefited ecosystems too, since around 84% of water savings are used for ecological purposes. This approach can be reproduced for any hydroelectric development where irrigation and energy production are the main users of the water in the reservoir.



21. Water and climate resilience in the Andes

Improving the adaptation of indigenous populations in Peru through water governance

Solidarity Water Europe (SEE) - International Secretariat for Water (SIE)

The indigenous communities of Cuchoquesera and Waripercca - living 5,000 meters above sea level at the head of the River Cachi catchment area - decided to turn their “drinking water and sanitation committees” into “committees for managing infrastructure, water resources and territory”. Left to fend for themselves and particularly vulnerable, these communities

thereby aim to strengthen their capacity to adapt to climate change, in particular so that they can sustainably protect water sources for future generations. Solidarity Water Europe - International Secretariat for Water (SEE-SIE), the Seine-Normandy Water Agency and their local partners, have joined forces to help establish a mode of water governance that supports adaptation to climate change. The SEE-SIE model combines water infrastructure and sanitation, land use planning, protection of water sources and management of ecosystem services, while putting the indigenous populations at the heart of water governance, thereby helping the indigenous populations of the Andes to adapt better to current changes.



For further information:

<http://www.sie-see.org/en/project/water-sanitation-programme-peru/>

22. Local planning for flood risk

A tailored approach for municipalities

Gret

In the Sahelian zone, towns and cities are having to deal with increasingly frequent heavy rains which impact mobility, infrastructure and health. Although planning documents exist, they take little account of the flood problem, and the proposed solutions (drainage networks) are beyond the reach of the communities. A new approach has been developed, which

defines and prioritizes the actions to be taken that are accessible to the communities. It hinges on (i) participatory diagnosis which merges local know-how (flood-prone areas, frequency, water channels) with scientific knowledge (characterization of rainfall, origins of flood flows, outfalls), (ii) planning, tailored to communities, of the actions to be taken, which will enable them to act independently, incorporating the expected effects of climate change, (iii) soft techniques enabling the inhabitants to live with the water: reprofiling or paving streets, infiltration, footbridges, creating buffer ponds, etc. and (iv) warning and information systems to give inhabitants advance warning of rainfall events. This inclusive approach helps boost the resilience of cities and their inhabitants at lower cost.



For further information:

<https://www.gret.org/projet/eaux-pluviales-epur/?lang=en>



Reduce
pollution
Acting
for SDG

Share
equitably

Adapt
to changes





The **Water Expertise France** portal coordinated by the French Water Partnership (FWP) is the first platform which references the expertise of French water stakeholders internationally. It is part of the WeFrance range of tools for promoting French expertise in water internationally - an initiative of the FWP and the Scientific and Technical Association for Water and the Environment (ASTEE). For further information, visit the Water Expertise France portal: <https://www.partenariat-francais-eau.fr/en/water-expertise-france/>

All of the actions are available on the WeFrance portal.

The French Water Partnership (FWP) is the go-to platform for public and private French water actors who work internationally. It has engaged in advocacy internationally for over 10 years to make water a priority in sustainable development policies, and encourages exchange between French expertise and that of other countries. With its various members (State and public institutions, authorities, NGOs, businesses, research and training institutes, and qualified experts) it delivers collective messages on water in international arenas such as the United Nations, climate and biodiversity conventions, high-level political forums, the World Water Forum, and World Water Week in Stockholm.

Find all FWP activities and publications on:
<https://www.partenariat-francais-eau.fr/en/>



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