

WATER AND CLIMATE: IN THE FACE OF EMERGENCY, IT'S TIME FOR ACTION!

Recommendations from the members of the French Water Partnership

WATER, AN ESSENTIAL BUT UNDERMINED RESOURCE

The greatest risks of global warming, as described by the IPCC, relate first and foremost to water: droughts, floods, rising sea levels, cyclones, storms, etc. This essential resource is already subject to significant anthropogenic pressures, thus endangering populations (particularly the most vulnerable), ecosystems and human activities.

WATER, A LEVER FOR ACHIEVING THE OBJECTIVES OF THE PARIS CLIMATE AGREEMENT AND THE 2030 AGENDA

Water must be treated as a priority in the commitments of the Paris Climate Agreement, in harmony with the 2030 Agenda and its 17 Sustainable Development Goals. It is a crucial factor in our younger generations' future quality of life, and in health, agriculture and food, biodiversity, energy, education, and gender equality, and water security is a vehicle for peace. Water is central to the 2030 Agenda's 21 targets. Water that is protected, in terms of both quality and quantity, is a vital means of mitigating climate change, as it also supports the ecosystems that produce oxygen and absorb CO₂.

THE EMERGENCY: IMPLEMENT APPROPRIATE SOLUTIONS ON A FAR WIDER SCALE

To satisfy the basic needs of populations while taking into account demographic growth, the protection of ecosystems and the fight against climate change, **a number of institutional, technological, economic and social solutions have proved successful.** Initiated by all types of stakeholders (local authorities, decision-makers and managers, businesses, farmers, NGOs, researchers, etc.), these solutions are based on regionalized approaches. They deserve to be better promoted and shared, particularly in the least developed countries. At the same time, particular vigilance is required to avoid any maladaptation that might result in the increased vulnerability of populations and ecosystems. **The French Water Partnership (FWP) is therefore calling for a relaunch of the process initiated by the Marrakech Partnership for Global Climate Action.**

A FEW FACTS:

- ▷ **Limiting global warming to 1.5°C rather than 2°C** could reduce the proportion of the world population exposed to water stress by **50%** (IPCC, 2018)
- ▷ Water scarcity, exacerbated by climate change, could cost up to **6% of the GDP** of some regions (World Bank, 2016)
- ▷ Some **143 million people**, principally in sub-Saharan Africa, South Asia and Latin America, could be forced to move to the interior of their own country to escape the impacts of climate change (World Bank, 2018).

The 200 members of the FWP wish to issue a reminder of the urgency of **drastically reducing global greenhouse gas emissions in order to remain below the limit of 2°C average warming**, and of continuing efforts to limit the temperature increase to 1.5°C compared to the pre-industrial period, by the end of the century. They also draw the attention of the international community to the need to **take adaptation measures in response to current and future climate changes that are capable of meeting the challenges:**

- **Action on the large water cycle is a major vehicle for resilience and adaptation** to climate change, bearing in mind that any additional warming will limit the effectiveness of the adaptation measures
- **Prioritize responses** that target the most vulnerable populations, and those immediately impacted by climate change
- **Deploy ambitious adaptation actions that take the socio-economic and environmental context of the regions into account.**

A. MAKE WATER CENTRAL TO ADAPTATION

In response to the inevitability of climate change, adaptation measures must be factored in on the same scale as actions to mitigate emissions, in negotiations around the United Nations Framework Convention on Climate Change (UNFCCC). **Water is both a particularly vulnerable sector** (increasing scarcity of the resource) **and a vehicle for solutions** (for example, the use of aquatic ecosystems for their regulating role). However, several studies have shown that of the 162 Nationally Determined Contributions (NDCs), 83% include an adaptation component and 93% of them cite water as a major issue in the context of climate change¹. The impact of climate change on the water sector will affect many spheres: **agriculture and food, access to drinking water, sanitation and hygiene, rural areas and the development of towns and cities, industry, biodiversity, and more. Water must be a priority sector in local and national action plans while also being identified as a vehicle for adaptation solutions, and factored in as a priority in the objectives set by the Paris Climate Agreement, particularly in terms of adaptation.**

B. STRENGTHEN THE ROLE OF PUBLIC DRINKING WATER AND SANITATION SERVICES IN MITIGATION

Greenhouse gas emissions continue to increase². This reflects, among other causes, an increased demand for energy. Every sector that uses water is concerned. However, water and sanitation services, which according to the International Water Association (IWA) represent between 3% and 8% of towns' and cities' overall greenhouse gas emissions, can help to mitigate these emissions **by reducing their consumption of energy and water** (raising awareness among users, appropriate sizing of structures, optimizing the operation of pumps, reducing leaks in the networks, etc.) or by **putting in place sustainable solutions to produce and recover energy** (recovering sewage sludge to produce biogas, using pico-turbines in water networks, re-using the heat from networks, etc.). **Circular-economy approaches must be promoted in this sector, linked with the development of other essential public services such as the management of solid waste.**

C. STRENGTHEN COMMITMENTS AND TRANSLATE THEM INTO NATIONAL POLICIES AND INTERVENTION STRATEGIES AT EVERY LEVEL

In overall terms, the NDCs that are part of the Paris Climate Agreement will lead to a 3.0 to 3.4°C rise in global temperatures³ by the end of the century, and up to 7°C according to some scientists⁴, if current emissions trends continue. Evaluating progress made since COP21 and raising climate ambition are crucial objectives if we are to at least meet the objective set of +2°C. To have any real impact, **the commitments made by the countries, including those related to water, must also be translated into national and local policies and strategies. For this to happen, water must be integrated into other sectoral policies** such as energy, food security, health, education, and so on. Finally, negotiations on the damage and losses anticipated in the Paris Climate Agreement must be continued.

France is adapting to the consequences of climate change on its territory

Since COP21, France has adopted a **Climate Plan** with a clear and ambitious objective in terms of mitigation: achieving **carbon neutrality by 2050**. This objective has been written into law since 2019, in a concrete demonstration of France's implementation of the Paris Climate Agreement. This corresponds to at least a six-fold reduction in emissions. Furthermore, since the end of 2018 France has had a new **national climate change adaptation plan for the period 2018-2022**. One of its aims is to **counter risks related to droughts, floods and rising sea levels and to build resilience in major sectors of the economy such as agriculture, industry and tourism in response to the impacts of climate change. The water sector is identified as one of the areas for priority action**, by means of a number of levers for action around protection against risks, adaptation of regions, health, and protecting biodiversity. The Climate Plan also specifies an increase in funding dedicated to adaptation of the regions (both mainland France and the overseas territories) and of the economy.

1 <https://www.partenariat-francais-eau.fr/wp-content/uploads/2018/03/Analyse-%C2%AB-Eau-%C2%BB-dans-les-INDC-juin-2016.pdf>

2 <https://www.iea.org/geco/>

3 <https://climateactiontracker.org/global/temperatures/>

4 http://www.cnrs.fr/sites/default/files/press_info/2019-09/CP%20r%C3%A9sultats%20CMIP6_OK.pdf

D. STRENGTHEN KNOWLEDGE TO MANAGE WATER RESOURCES BETTER

Knowledge about climate and the large water cycle at the regional and local levels must be strengthened, particularly in relation to freshwater on which a large proportion of observations are classified by the IPCC as “medium” due to a lack of references, regional expertise, and field data. We must also strengthen **mechanisms for information** (such as hydrology and weather stations) and for modeling and water information systems (databases, for example) which facilitate better decision making. **New data-acquisition tools such as satellite measurements must also be developed, to complement improvements in in-situ data-acquisition systems. The value of local knowledge and traditional expertise must also be recognized** when policies are being developed and implemented at all levels. The co-construction of projects with civil society, including women, young people and indigenous populations, is also a guarantee of sustainability and efficacy in implementing the Paris Climate Agreement and achieving the Sustainable Development Goals.

E. MOBILIZE STATES TO MANDATE THE IPCC ON WATER RESOURCES, INCLUDING AS REGARDS THE DEVELOPMENT OF NEGATIVE EMISSIONS MEASURES

The impacts of climate change on water resources and the developments in their use have never been the subject of a specific IPCC report, despite this being a crucial issue at the global level. In its special reports on +1.5°C of warming and on land surfaces, the IPCC indicates that in order to limit global warming to 1.5°C or even 2°C:

- ▷ “The various mitigation strategies require the use of negative emissions measures that aim to eliminate CO₂ from the atmosphere assuming changes in land use: crops dedicated to energy uses with carbon capture (from 1 to 7 million km² by 2050) and expansion of forests (up to +12 million km² by 2050 compared to 2010)”.
- ▷ “These measures can deliver co-benefits in terms of adaptation, combating the desertification and degradation of land, and food security (high confidence) if they are deployed in a limited area and with sustainable landscape management (high confidence)”.
- ▷ “On a large scale, and if poorly managed, they can entail negative effects on water resources, biodiversity, land degradation, desertification, and food security (high confidence)”.
- ▷ “Their development therefore requires consideration of the needs of populations, of biodiversity, and of other sustainable development dimensions (very high degree of confidence)”.

Against this background, the FWP is calling on the countries to mandate the IPCC to produce a specific report on water resources, which includes the impact on them of the development of negative emissions measures, and which examines how water management must be changed in this context in the various parts of the world.

Adaptation plans at hydrological-basin level and regional projects, to combat climate risks related to water

With its Water Agencies on the mainland and Water Offices in the overseas territories, the bodies which implement water policy in the basins, France is taking action to arrange for the sustainable management of water resources and aquatic environments. Every catchment area, and a large number of sub-catchments, has a planning document which aims to ensure the balanced, responsible management of water resources, with the close involvement of stakeholders. France therefore has vast experience in terms of water planning.

The impacts of climate change exacerbate the proliferation of conflicts of use, and the increased pressure on water resources. In response to this situation, a directive of 7 May 2019 from the French ministries in charge of the environment and agriculture encourages the implementation of “regional water management projects” (PTGE). Co-constructed with all water stakeholders in a needs/resource approach at the catchment-area level, these projects must help the regions to adapt and activities such as farming to become more resilient by using a variety of levers that aim to manage the demand for water, conserve water in soils and subsoils, mobilize new resources, where relevant and possible in a sustainable manner, and to reduce pollution.

F. STRENGTHEN WATER GOVERNANCE

At a time when the demand for water is rising steadily, **a global approach to managing the resource is necessary**, to include surface waters and groundwater and take into account the source-to-sea continuum, while also ensuring even distribution between water uses, in order to determine at the appropriate regional level which levers for action are best suited to the

challenges (see above). This is the role of **Integrated Water Resources Management (IWRM), which must be implemented at the level of national or transboundary hydrological basins** for successful adaptation to climate change to take place.

G. MOBILIZE FUNDING THROUGH APPROPRIATE GOVERNANCE

The Climate Summit of September 2019 **noted that progress had been made** in countries' contributions towards meeting financial commitments (\$100bn/year for developing countries by 2020). The report published recently by the OECD shows progress in the mobilization of financial flows. This must be continued if the ambition set for 2020 is to be met. **Water must be a priority within the funding for adaptation, with the least developed and most threatened countries as key targets.** In particular, these countries must develop effective governance of their water resources, including national, local, or basin-level funding mechanisms, in order to improve their ability to secure international funding, both public and private. Part of this funding must be dedicated to **capacity-building** (for example, knowledge, governance, training, education, and performance monitoring), which is crucial to the efficacy of projects.

A French policy of international cooperation contributing to the implementation of the Paris Climate Agreement

On the issue of funding, this September in New York France announced its decision to **double its support for the Green Climate Fund**. The French Development Agency (AFD), the principal operator of France's bilateral Official Development Assistance, increased the volume of its climate finance by setting itself the target of reaching **€5bn/year internationally by 2020, with a specific increase in assistance for adaptation (target of €1.5bn/year) and a particular boost in funding for Africa**. The water sector represents the bulk of the Agency's investment in adaptation (47% in 2017, 51% in 2019) and its volume is growing. France has more than 60 years' experience in Integrated Water Resource Management (IWRM). The International Office for Water currently provides the permanent technical secretariat for the International Network of Basin Organizations (INBO). The INBO supports initiatives which help to implement IWRM at the level of national or transboundary catchment areas, rivers, lakes and aquifers. It also aims **to promote within cooperation programs the principles of and means to achieve rational water management for sustainable development, and to facilitate research and development of tools for institutional and financial management, for planning and for knowledge, and of models that are geared to needs.**

H. PROMOTE AND ENCOURAGE INTERNATIONAL SOLIDARITY

Stronger international cooperation at all levels (North-South, local, regional, national and transnational) and between all stakeholders is needed to meet the climate challenge. It is essential that international solidarity is promoted, in the knowledge that the effects of climate change impact the most vulnerable populations first and foremost. This is particularly true when it comes to guaranteeing the effective implementation of the right to drinking water and sanitation. The impacts of climate change increase the vulnerability of populations of developing countries with a low rate of access to water and sanitation, particularly in sub-Saharan Africa. The economic, social, and public-health consequences are significant: reduced access to services in the event of a fault or damage to infrastructures (for example during a flood or a storm), increased waterborne diseases, increased difficulty in fetching water, migrations, etc. In these contexts, international cooperation can contribute to better adaptation by providing finance, sharing experience, and building capacity for local actors.

FWP members are taking action: some of their initiatives and projects:

- **Fighting the impacts of climate change**
The second national plan for adapting to climate change
Ministry for the Ecological and Inclusive Transition
- **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
- **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
- **Vegetation-based filters for treating domestic wastewater in tropical environments**
Guide for sizing filtration installations in tropical areas
IRSTEA and the Martinique Water Office
- **Monitoring intermittent waterways...**
... to better understand the impacts of climate change
French Biodiversity Agency and IRSTEA
- **Sanitation in Jordan**
Dealing more effectively with water stress while improving sanitation in the Balqa region
French Development Agency
- **Co-processing of sewage sludge and of the organic fraction of residual household waste**
The Cométha project, an innovative partnership
SIAAP and Syctom
- **Solar desalination plant in South Africa**
First desalination plant directly powered by photovoltaic solar energy, without batteries
Mascara Renewable Water
- **Solar-powered drip irrigation system creating water savings**
More accurate, better dosage, more resistant
NRC Bio Innovation
- **Renovation and construction fund for adapting to flood risk**
A financial mechanism serving inhabitants of Senegal's Dakar suburb
urbaMonde
- **Supporting drinking water and sanitation services against the impacts of climate change**
Supporting water stakeholders with a "Water and Sanitation Services against Climate Change" guide
pS-Eau
- **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
- **The Sahelian bocage**
Where to re-use runoff
Mil'Ecole association presented by the CFH
- **An early-warning system in Madagascar to improve humanitarian aid**
Study of the relationship between hydro-climatic and nutritional data
Action against Hunger - ACF
- **Stronger water governance in southwest France**
An innovative political initiative for implementing adaptation measures
Adour-Garonne Water Agency
- **Developing tools for modeling and for managing groundwater in extreme conditions**
From reservoir-type models to an aquifer-modeling platform
BRGM
- **Rural development integrated downstream of the Kaddoussa dam, Morocco**
Rural Development and Adaptation of Agriculture to Climate Change
French Development Agency
- **Enhancing hydrological monitoring in the Congo Basin**
... for water management that takes account of climate change
International Office for Water
- **Agro-ecological transition through the move to soil-conservation agriculture**
The example of Mr Frédéric Thomas's farm
French Academy of Agriculture and Sologne Central Agricultural Committee
- **The water-energy-food nexus in a context of climate change**
Water saving in the Durance valley
EDF
- **Water and climate resilience in the Andes**
Improving the adaptation of indigenous populations in Peru through water governance
Solidarity Water Europe/ International Secretariat for Water
- **Local planning for flood risk**
A tailored approach for municipalities
Gret

For further information, see the FWP's new booklet: ["Water & Climate, time for action: initiatives and projects by French stakeholders to respond to climate change"](#)



The FWP and its members will be attending COP25: you will be able to find them at a number of events. For further information, contact:

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For more information about the FWP program at COP25: <https://www.partenariat-francais-eau.fr/en/calendar/evenement/cop-25-on-climate-madrid/>

The FWP’s Water & Climate publications:



Publications:

- [Water & Climate, time for action: initiatives and projects by French stakeholders to respond to climate change \(November 2019\)](#)
- [Better knowledge for better management, Complementarity between field data and spatial data, Towards a better understanding of field hydrology \(November 2019\)](#)
- [The French policy approach for the management of water resources and aquatic biodiversity \(October 2019\)](#)
- [Acting for water in the Sustainable Development Goals \(March 2018\)](#)
- [Summary and keys to understanding the IPCC’s 1.5°C special report with a focus on water \(October 2018\)](#)
- [Better Knowledge for better management - water, climate and development \(November 2016\)](#)

Videos:

- [Imagining a +4°C world: what about water? November 2018](#)

Find out about Water & Climate projects on the FWP website via the [Water Expertise France](#) portal