

REPORT

FRANCE AT +4° C: FINANCING THE ECONOMY'S ADAPTATION TO CLIMATE CHANGE

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FRANCE AT +4°C:
FINANCING THE ECONOMY'S
ADAPTATION TO CLIMATE CHANGE

SUMMARY

ADAPTING TO A 4°C RISE IN TEMPERATURE IS ESSENTIAL FOR THE RESILIENCE OF THE FRENCH ECONOMY

Faced with the accelerating impacts of climate change and the prospect of warming reaching up to +4°C in France, adaptation is becoming a central issue for economic resilience. Long relegated to the background behind mitigation, it now calls for a structured strategy based on risk anticipation, the mobilization of dedicated investments, and the leveraging of associated economic opportunities.

1. A NECESSARY ADAPTATION STRATEGY TO COMPLEMENT MITIGATION EFFORTS

The Paris Agreement sets the goal of limiting global warming to well below +2°C by 2100 compared to pre-industrial levels. While such projections are subject to numerous assumptions, the consolidated estimates by the IPCC—which represents the scientific consensus on climate issues—suggest a world warming by +2.5 or 3°C if all countries were to implement the actions already decided upon to reduce their greenhouse gas emissions¹. However, metropolitan France is warming faster than the global average. Given the current level of ambition in climate policies and associated projections, **the country could see temperatures rise by up to +4°C by the end of the century**².

Faced with this reality, a **paradigm shift is imperative**. Until now, climate efforts have focused primarily on **mitigation measures aimed at reducing greenhouse gas emissions**. However, the **effects of climate change are already visible**. It is therefore urgent **to complement these efforts with an ambitious adaptation strategy** that acknowledges the consequences of global warming.

Adaptation refers to the set of transformations—technical, economic, organizational, or behavioral—that enable adjustment to the effects of climate change. It constitutes a dynamic process that fosters **resilience**, that is, the sustainable capacity of a region, a business, or a society to absorb shocks, adjust, and continue to function despite climate disruptions.

1 Latest IPCC [report](#). More pessimistic projections suggest a temperature rise of +5°C if climate policy ambitions were to be scaled back.

2 Projections from the Reference Trajectory for Climate Change Adaptation (TRACC) established by the Government based on work by Météo France, among others ([source](#))

2. THE PARIS FINANCIAL CENTRE IS TAKING STEPS TO MOBILIZE FINANCING FOR ADAPTATION

Against the backdrop of accelerating climate events, the Institut de la finance durable (IFD – Institute for Sustainable Finance) has begun work on financing adaptation to climate change. Driven by growing demand from stakeholders in the Paris financial centre, this work aims to identify priority adaptation projects as well as the conditions for mobilizing financing solutions for these projects. As part of France's 3rd National Climate Change Adaptation Plan (PNACC-3), this work is fully aligned with Measure 42 of the plan, which aims to “*mobilize financial actors for private financing of climate change adaptation*,” as well as with measures related to protecting populations, enhancing regional resilience, and evolving the insurance system (Measure 2).

To this end, the IFD conducted more than 80 interviews and established a multi-stakeholder working group on adaptation (funders, businesses, experts, public authorities, etc.) to carry out this work. The ultimate goal of this report is to outline the conditions for mobilizing private financing tools and to provide concrete, consensus-based recommendations to promote the financing of climate change adaptation.

3. THE COST OF ADAPTATION IS INCOMPARABLE TO THE COST OF INACTION

The cost of inaction is already significant and will continue to rise. For example, according to a recent study³, the three major types of extreme weather events in the summer of 2025 (floods, droughts, and heat waves) cost the affected European regions €43 billion in 2025. This figure could rise to €126 billion per year by 2029 without additional preventive action. **France, along with Spain and Italy, is among the hardest-hit countries, each facing losses exceeding €30 billion per year in the medium term.**

The central issue here is the division of roles among the various stakeholders. In financing climate change adaptation, capital mobilization can only be effective if it is part of a shared responsibility among the government, businesses, and the financial sector. The government sets the course and the rules of the game, businesses identify and implement projects on the ground, and financiers provide support to channel capital toward the investments most needed in terms of resilience.

3 Sehrish Usman of the University of Mannheim and economists from the ECB, published on September 15, 2025, [link](#)

Key themes and challenges for adaptation	Agriculture and natural resources	Urban planning and territories	Infrastructure and industry
	Sustainable management of water resources	Physical adaptation of cities	Resilience of the energy production and transport network
	Adaptation of agricultural production systems and protection of ecosystems	Renovation, energy efficiency and energy conservation in the building stock	Adaptation of road, rail, maritime and river transport infrastructure
	Protection of the agricultural sector	Adaptation of areas vulnerable to the tourism sector	Development of new adaptation operators

Figure – Three major sectors, each with its own climate change adaptation challenges (source: IFD, Kearney) [Retrieve PPT figure for layout]

Adaptation thus requires significant investments to strengthen the resilience of all pillars of the French economy. Adaptation investment needs are concentrated, for example, in **agriculture and natural resources**, which are highly exposed to water stress, ecosystem degradation, and yield volatility (new crop varieties, planting hedges, drip irrigation). **Buildings** must also be adapted to climate-related hazards such as heat waves, floods, and natural risks (renovation for thermal comfort, relocation of exposed active assets, flood barriers). Furthermore, **industry and critical infrastructure**—energy and transportation—require significant investments to strengthen network resilience and ensure the continuity of essential services in the face of intensifying climate hazards (early warning systems, heat-resistant facilities, strengthening of value chains). Estimates of sector-specific investment needs are scarce and imprecise at this stage. According to I4CE, the needs are in the range of: +€1.5 billion in annual investment in France for agriculture, several billion euros in the building sector, and several million to a few billion euros per year for transportation⁴.

4 I4CE, *Anticipating the Effects of a 4°C Warming: What Are the Costs of Adaptation?*, April 2024, [link](#)

Preliminary calculations have also already been carried out at the macroeconomic level. One thing is certain: the cost of adaptation is incomparably lower than the cost of inaction. Some studies have yielded overall estimates. According to a study published in January 2026 for the European Commission's Directorate-General for Climate Action (DG CLIMA), the European Union, its member states, and the private sector are expected to invest approximately €70 billion per year through 2050 in climate change adaptation, in order to reduce exposure to growing climate risks and improve resilience. For France, this investment range is between €9.5 billion/year and €12 billion/year, with a central estimate of €10.6 billion/year through 2050⁵.

4. ADAPTATION: A GROWING MARKET AND NECESSARY INVESTMENTS

This report aims to demonstrate that investments in adaptation are not merely a cost but also an economic necessity. First and foremost, investing in adaptation can be considered a particularly “cost-effective” investment given the long-term costs it helps avoid: according to several consistent studies⁶, every euro invested in climate change adaptation can prevent up to 10.5 euros in losses. Despite this potential, a paradox remains: “returns on investment” are perceived as distant and uncertain, while the immediate expense is viewed as an additional cost. Beyond issues of timing and uncertainty, this paradox stems from the fact that the benefits do not accrue entirely to the investor but may also extend to third parties or society as a whole.

Adaptation is also an opportunity for economic sovereignty. Increasing resilience means increasing strategic autonomy. There is an “adaptation market” that companies can tap into: revenue from climate change adaptation activities in France amounted to nearly **\$80 billion in 2024**, and **this figure is structurally growing**⁷. **Developing a sector of “solution-providing” companies for adaptation is essential to ensuring industrial sovereignty over technologies critical to resilience.**

5 European Commission: Directorate-General for Climate Action, Monteleone, L., Roberti, G., Fossati, F., Davies, W. et al., *Assessment of EU and Member States adaptation investment needs – Study on the macro-economic impacts of the climate transition*, 2026, <https://data.europa.eu/doi/10.2834/2895769>.

6 World Resources Institute study based on 320 adaptation investments across 12 different countries (figure consistent with recent studies [by BCG](#), [the World Bank](#), and [the JRC](#))

7 LSEG data provided to the IFD by the authors, Beth Schuck and Lily Dai, derived from the France-specific data extraction of a global study published on August 12, 2025, “Adaptation Solutions: The Investment Opportunity in Climate Resilience.” The data is directly extracted from LSEG databases. [Link](#)

THE LEVERS FOR FINANCING ADAPTATION ALREADY EXIST BUT MUST BE SCALED UP AND BETTER COORDINATED

Climate change adaptation financing currently rests on three complementary pillars—public aid, businesses, and the financial sector—whose foundations exist but remain insufficiently coordinated.

1 Public aid: a framework and subsidies still in their infancy in France and Europe	2 Businesses: the difficulty of anticipating the adaptation of business models	3 Financial sector: awareness and financial tools still in their infancy
A pioneering French framework with PNACC-3 provides a common horizon. The EU must draw inspiration from this and build a robust framework. Local authorities are on the front line, but are ill-equipped to deal with the scale of the changes needed in their areas, such as the issue of stranded assets. Public aid is emerging but still in its infancy (State, agencies, local authorities, etc.). Households lack human support.	An already long-standing approach to risk management that needs to be reinforced by a forward-looking and systemic approach. A vision of adaptation that is still fragmented: difficulty in combining site-level issues with group-level issues (control of the value chain, human resources) and regional issues. The necessary investments vary greatly from one company to another and are perceived as inflationary: from modest maintenance costs to a wall of investment.	Lack of knowledge, frameworks and harmonised data on climate risks, making comparisons difficult. Shortage of easily financeable adaptation projects: lack of maturity; perceived low return on investment (paradox of profitability relative to damage avoided). Banks and insurance companies, which are the most affected, are conducting promising experiments (prevention, parametric insurance, etc.).
Key figure According to I4CE, in 2025, €1.7 billion in public aid is planned in France for adaptation, a figure that is rising sharply, not including contributory expenditure (€25 billion in favour of resilience).	Key figure The weight of adaptation-related investments can vary considerably, ranging from 1 to 10 depending on the company, according to a BCG report (March 2025).	Key figure According to a study by the World Resources Institute (2025), every dollar invested in climate adaptation can prevent up to £10.5 in economic damage.

Figure – Summary of the assessment: the beginning of a long road for climate change adaptation financing (source: IFD) [Retrieve PPT figure for layout]

1. PUBLIC AID: A FRAMEWORK AND SUBSIDIES STILL IN THEIR INFANCY IN FRANCE AND EUROPE

Public aid constitutes the first pillar of this financing. In France as in Europe, the policy framework is still largely under development. **France nevertheless has a relatively advanced framework with the third National Climate Change Adaptation Plan (PNACC-3), which sets a common timeline and lays the groundwork for a structured adaptation pathway.**

France has allocated 1.7 billion euros in public aid for adaptation by 2025, a figure that has risen sharply⁸. Among the main public initiatives discussed in this study are: the Green Fund, the Major Natural Risk Prevention Fund (known as the Barnier Fund), more targeted pilot projects *through* the Clay Prevention Fund, and support tools developed by ADEME, etc. Beyond these dedicated aid programs, the Ministry of Finance estimates that contributory spending supporting resilience amounts to 25.6 billion euros in the green budget⁹. Additionally, several schemes developed by public banks provide support to stakeholders through specific loans and guarantees (such as Bpifrance's green loan and green guarantee schemes; the adaptation offerings from the Banque des Territoires for local governments). **However, public aid dedicated to adaptation is still in its infancy and fragmented.** It is scattered across different levels—the State, agencies, and local governments—and lacks structured support to facilitate its adoption and large-scale deployment.

Local governments, which are on the front lines facing the physical impacts of climate change, are largely ill-equipped to handle the scale of the transformations required across their territories, such as the critical issue of stranded assets. In this context, and in order to clearly define the respective roles of these actors, the national government must remain the lead in the adaptation strategy, ensuring the consistency of climate scenarios (i), updating in detail the maps of territorial exposure to various natural hazards as well as the associated proposed solutions (ii), and providing the tools necessary for the transformation of the entire economy (iii).

8 I4CE, [Adapting France to +4°C: Means, Needs, Financing](#), 2025.

9 Beyond expenditures explicitly earmarked for adaptation, the government's green budget (2025 Budget Bill) identifies €25.6 billion in resilience-enhancing expenditures, corresponding to operators and programs that help prepare the economy and regions for the impacts of climate change. These expenditures cover, in particular, natural resource and water management, transportation, energy, industrial competitiveness and innovation, as well as international action. By way of illustration, in 2024 the Green Fund mobilized more than €2 billion, including €1.43 billion for renaturation and €707 million for the energy renovation of local government buildings.

2. BUSINESSES: ANTICIPATING THE ADAPTATION OF BUSINESS MODELS

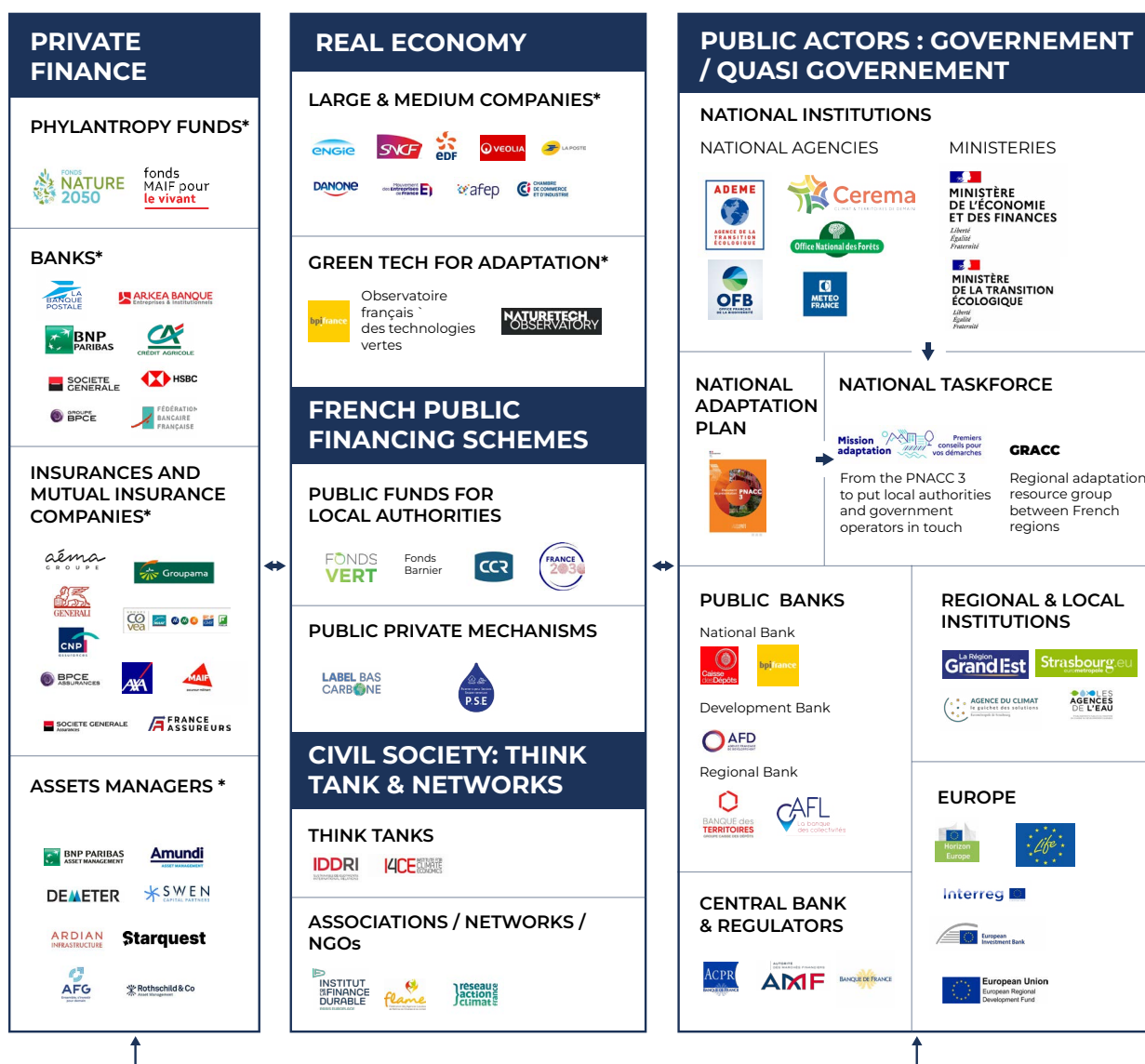
The second pillar rests on businesses, which face a major challenge: **anticipating the adaptation of their business models in a context of increasing climate risks**. Climate risk management is already a relatively established practice in some organizations, but it must now be significantly strengthened and transformed.

The challenge is no longer merely to react to isolated shocks, but to **adopt a forward-looking, systemic, and integrated approach to physical risks, covering the entire value chain**. This evolution requires a more comprehensive and structured vision of adaptation, articulated across different levels: from the local level of sites and infrastructure up to the group level, while integrating human and territorial considerations. **Thus, adaptation becomes a key issue in corporate internal governance and must be managed as a strategic investment.**

The investments required for businesses to adapt are, by nature, highly **varied**. They can range from relatively modest costs for maintenance or operational adjustments to much larger investments, depending on the sector, the location of assets, and exposure to climate-related risks. The scale of adaptation-related investments can thus vary considerably, ranging from 1 to 10 percent depending on the company¹⁰. However, several companies in the financial sector, interviewed as part of this study, have begun to develop promising initial initiatives that it will be important to build upon and accelerate (*see the tables at the end of the summary*).

10 BCG, [Business Adaptation & Resilience to Climate Change](#), March 2025.

ADAPTATION INVESTMENT LANDSCAPE FRANCE



This document was created as part of ClimateFIT project which aims to support innovative financing mechanisms for climate change adaptation by providing key information on funding sources and strategies.
For more information : <https://climatefit-heu.eu/>

*A selection of players involved in climate change and adaptation financing identified and met during ClimateFIT project.

Figure – Overview of adaptation financing stakeholders in France (Source: IFD) [Retrieve PPT figure for layout]

3. THE FINANCIAL SECTOR: EMERGING AWARENESS AND FINANCIAL TOOLS

Finally, the third pillar of adaptation financing concerns financial actors, among whom awareness is growing. In practice, however, adaptation is still primarily addressed from the perspective of identifying climate risks. The acceleration of physical impacts is leading institutions to focus their efforts on assessing their exposure, with targeted dialogue underway in certain particularly vulnerable sectors. These approaches remain inconsistent across financial sectors, however, due to the lack of harmonized frameworks and methods.

The development of a dedicated private financing offering for adaptation is thus still largely in its infancy. Several shared obstacles explain this situation: a lack of granular data on physical risks, low demand for dedicated financing, and the absence of a clear price signal.

Despite these obstacles, several financial institutions (banks, asset managers, and insurers) are pursuing promising initiatives, including the development of the first adaptation-focused bonds, subsidized loans, thematic funds, or insurance solutions incorporating an adaptation component (*see the tables at the end of this summary*). More broadly, the French insurance system for climate-related hazards and natural disasters relies primarily on the “Cat-Nat” system, a unique scheme based on risk pooling and national solidarity, supported by a public-private partnership involving insurers, the Caisse Centrale de Réassurance, and the State. **However, despite the strength of this system for pooling climate-related risks in France, strengthening individual and collective prevention efforts is an essential area for progress to contain the projected rise in claims costs.**

Finally, there is an urgent need to establish a structured forum for dialogue among public authorities, local governments, businesses, and financial stakeholders to develop a coordinated strategy ensuring equitable access to insurance services and various financing tools across the entire country.

THE IFD SETS FORTH ITS RECOMMENDATIONS FOR FINANCING CLIMATE CHANGE ADAPTATION

The recommendations presented in this report aim to create the conditions for the economic viability of climate change adaptation projects tailored to the situations of the greatest number of project proponents. They were developed following the dual analysis presented here: the assessment resulting from the numerous interviews conducted as part of this work and the case study analysis (available in the supplementary report). Finally, they were jointly developed by a working group within the IFD, in close collaboration with stakeholders from the economic and financial sectors.

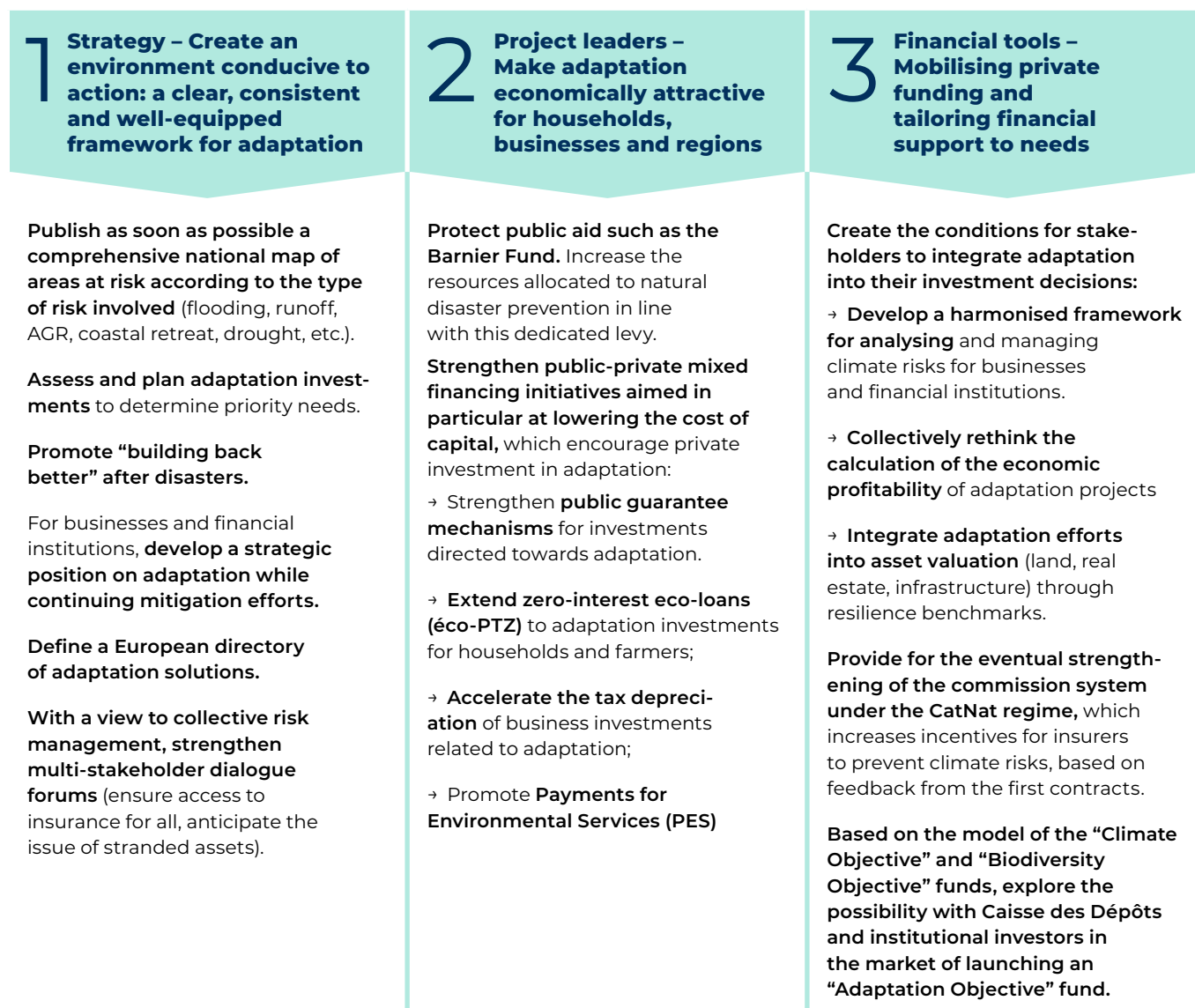


Figure – Summary of recommendations for financing a climate-resilient economy (Source: IFD) [Retrieve PPT figure for layout]

1. CREATING AN ENVIRONMENT CONDUCTIVE TO ACTION: A CLEAR, COHERENT, AND WELL-EQUIPPED FRAMEWORK FOR ADAPTATION

By consolidating the PNACC as the backbone of public action, the aim is to reduce uncertainty, prevent maladaptation, and provide public and private actors with the tools, engineering, and guidelines they need to take action. The goal is to create a clear, operational, and coordinated environment—a prerequisite for scaling up adaptation efforts in France and across the European Union.

- **Publish as soon as possible a comprehensive national map of risk zones based on the type of risk involved** (flooding, runoff, extreme heat, coastal erosion, drought, etc.).
- **Assess and plan adaptation investments** to determine priority needs. These assessments must be conducted in parallel with more microeconomic evaluations—based, for example, on diagnostic tools for businesses such as those developed by ADEME and BPI¹²—which will gradually enhance their robustness.
- **Promote “building back better” after disasters.** Disaster victims should receive better technical support to explore alternatives for more resilient structures, and financial support in the event of additional costs, particularly by increasing the visibility of existing mechanisms such as the Barnier Fund.
- For businesses and financial institutions, **develop a strategic positioning on adaptation, while continuing mitigation efforts.**
- **Establish a European repository of adaptation solutions identified in the practices of stakeholders, which can assist in particular with structuring financing strategies.** Among these solutions, it will be useful to identify those that are critical for the development of sovereign economic sectors.
- **From a collective risk management perspective, strengthen multi-stakeholder dialogue forums** (ensure access to insurance for all, anticipate the challenge of stranded assets).

2. PROJECT INITIATORS: MAKE ADAPTATION ECONOMICALLY ATTRACTIVE FOR HOUSEHOLDS, BUSINESSES, AND REGIONS

These recommendations aim to mobilize massive private financing through targeted public support and to integrate resilience as an explicit criterion of economic value. By making adaptation more accessible, better funded, and more highly valued in investment decisions, the goal is to align the interests of households, businesses, and regions with the requirements of climate resilience.

- **Earmark public aid such as the Barnier Fund.** Increase resources allocated to natural disaster prevention in line with this dedicated levy.

→ Strengthen “public-private” blended finance initiatives aimed in particular at lowering the cost of capital, thereby incentivizing private investment in adaptation:

- Strengthen **public guarantee mechanisms** for investments earmarked for adaptation;
- **Extend the zero-interest eco-loan (éco-PTZ)** to adaptation investments for households and farmers;
- **Accelerate the tax depreciation** of business investments related to adaptation;
- Promote **Payments for Environmental Services (PES)**

3. FINANCIAL TOOLS: MOBILIZE PRIVATE FINANCING AND TAILOR FINANCIAL SUPPORT TO NEEDS

Fostering a genuine “adaptation mindset” in financial practices requires integrating physical risks into valuation models, developing tailored financial products, and creating the conditions for a surge in private investment. The goal is twofold: first, **to scale up insurance-based prevention and develop tailored financial instruments** capable of supporting regional projects as well as the industrial adaptation sector. But also **to foster an “adaptation reflex” in financial practices** (strategic management, internal training, cross-sector dialogue, engagement with companies, and the integration of climate risks into models).

→ Create the conditions for stakeholders to integrate adaptation into their investment decisions:

- **Develop a harmonized framework** for **analyzing** and managing climate risks for businesses and financial institutions.
- **Collectively rethink the calculation of the economic profitability** of adaptation projects
- **Integrate adaptation efforts into the valuation of assets** (land, real estate, infrastructure) through resilience benchmarks.

→ **Plan for a long-term strengthening of the commission system under the “Cat-Nat” regime** to increase incentives for insurers to prevent climate risks, based on feedback from the first contracts.

→ **Following the model of the “Fonds Objectif Climat” and “Fonds Objectif Biodiversité” market funds, explore the possibility with the Caisse des Dépôts and institutional investors in the market of launching an “Objectif Adaptation” fund.**

EXAMPLES OF PARIS FINANCIAL MARKET INITIATIVES ON ADAPTATION FINANCING

Banks		
Blue Bonds	Wastewater management & desalination using low-impact technologies	Facilitated by BPCE, BNP Paribas
Paris Climate Bond	Issued by the City of Paris to finance adaptation measures under its Climate & Energy Action Plan	Facilitated by Crédit Agricole CIB, Société Générale, and HSBC
Tokyo Metropolitan Government Climate Resilience Bond	Issued by the Tokyo Metropolitan Government	Facilitated by CACIB
Pilot project in the tourism sector	Exposure and vulnerability assessment, consultation with clients and local stakeholders, vision and strategic adaptation priorities, and tailored offerings (dedicated financing, insurance, advisory services)	Crédit Agricole Caisse des Savoie
Sustainability-Linked Loans	Partnering with the agricultural sector to support the transition of farming practices	BNP Paribas
Partnership with the EIB	To facilitate financing for regional transition and adaptation projects	Crédit Mutuel Arkéa
Asset managers		
“Green” thematic funds compatible with an adaptation dimension	To invest in companies offering adaptation “solutions”	TERRA Fund, Swen Capital Partners —focus areas: water, agricultural transition, and soil regeneration. Demeter IM “Innovation for Adaptation and Mitigation” Fund
Fund dedicated to natural disaster prevention	To finance risk prevention	Climate Change Resilience Fund, CCR x Starquest
Investments in new players and/or adaptation technologies	E.g., climate data collection, climate risk management systems, cooling solutions, transition and adaptation technologies	BNP Paribas, Société Générale (through its stake in REED, an investment firm)
Insurance		
Impact-driven home insurance	Rewarding policyholders’ adaptation efforts through incentive-based pricing	BPCE Insurance
Parametric Insurance	To insure assets (particularly forests) against the challenges of climate change	AXA Climate, Descartes Underwriting
Innovative tools for anticipating climate risks	Solutions for analyzing climate risks and identifying adaptation measures	AXA Climate, Covéa and its brands
Launch of Geoya, a company dedicated to climate risk prevention	To offer individuals, businesses, and local governments a platform of tools and services to strengthen their resilience in the face of climate hazards	Generali, MAIF, and Société Générale Assurances have partnered with Sartec and Sixense , two companies specializing in risk management
% of home insurance premiums dedicated to funding prevention measures	To expand support for policyholders in risk prevention	Covéa and its brands MAAF, MMA, and GMF
Insurer-business partnership	To provide technical support to policyholders in risk prevention	BPCE Assurances with a company supplying flood barriers

Table – Examples of initiatives by financial actors on financing adaptation (Source: IFD)

1. Coping with a climate that disrupts operating conditions	
Renovation of infrastructure in response to the increasing frequency and intensity of extreme weather events.	→ EDF has developed and equipped about ten dams with an innovative flood discharge system and has developed new monitoring tools for the resilient management of industrial infrastructure.
Strengthening synergies between climate strategy and value chain management.	→ At Danone, adaptation involves supporting regenerative agricultural practices through pilot projects with dairy farmers, with a focus on shared resilience. → For several companies, adaptation involves, in particular, diversifying their suppliers and maintaining an ongoing dialogue with the value chain.
2. Building robust engineering to address uncertainty	
Developing customized tools to assess asset sensitivity.	→ SNCF is implementing a three-step method: identifying exposure, assessing the criticality of rail traffic, and then developing a prioritized action plan. → Michelin has designed an internal sensitivity analysis tool capable of handling the specific characteristics of its thousands of sites worldwide.
Adapting indicators to the technical specifics of infrastructure.	→ ENGIE coordinates its adaptation strategy with differentiated plans based on asset types (solar, thermal, networks) and the specific characteristics of its various sites to optimize priorities.
3. Managing adaptation as a strategic investment	
Deployment of a climate plan integrating mitigation and adaptation.	→ La Poste is working to identify adaptation opportunities within its Climate Plan to prioritize actions across the group's 1,200 buildings. The group involves labor partners to adapt employees' working conditions.
Strategic investment decisions regarding adaptation are made at the highest level.	→ Michelin manages adaptation at the Executive Committee level, based on a macro-level estimate of investments.
4. Financing adaptation, which is structurally inflationary	
Identification and earmarking of adaptation-related CAPEX/OPEX in budgets.	→ EDF clearly distinguishes future adaptation-related expenditures in its financial outlook (a cumulative total of €8.7 billion by 2040, or approximately €600 million per year) from current adaptation expenditures (€158 million in 2025).
Adjusting business models to account for the additional costs associated with resilience.	→ ENGIE factors in rising insurance premiums, reinforcement costs, and revenue losses in its forecasts, particularly for renewables.

Table – Examples of best practices among industrial companies in the region anticipating business model adaptation and necessary investments (Source: IFD)

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FRANCE AT +4°C:
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INTRODUCTION

The “[Action Plan for Financing the Ecological Transition](#)” published by the **Institut de la finance durable (IFD – Institute for Sustainable Finance)** noted that the main obstacle to the emergence of ecological transition projects was not a lack of financial resources but the low economic profitability of transition projects. The IFD continues its work, on a sector-by-sector basis, to identify the barriers and drivers of transition financing in priority sectors. In May 2024, the IFD published its first [report on financing the decarbonization of buildings](#) to assess the financing landscape for carbon-neutral building renovations, identify barriers, and formulate recommendations to overcome them. In May 2025, the IFD published its second [sector-specific report on financing the agricultural transition](#). The IFD adopts the perspective of project initiators (households, businesses, local governments) to understand, throughout their financing journey, what hinders the implementation of projects.

Against the backdrop of accelerating climate events, the IFD has launched a study on financing climate change adaptation. In response to growing demand from stakeholders in the Paris financial market, the study aims to identify priority adaptation projects and the conditions necessary to mobilize financing solutions for these projects. As part of France’s 3rd National Climate Change Adaptation Plan (PNACC-3), this work is fully aligned with Measure 42 of the plan, which aims to “*mobilize financial actors for private financing of climate change adaptation*,” as well as with measures related to protecting populations, enhancing regional resilience, and evolving the insurance system (Measure 2). This work specifically considers the TRACC scenario, which serves as the benchmark for PNACC adaptation policies and projects a France at +4°C by 2100.

Adaptation refers to all transformations—technical, economic, organizational, or behavioral—that enable adjustment to the effects of climate change. It constitutes a dynamic process that fosters **resilience**, that is, the sustainable capacity of a region, a business, or a society to absorb shocks, adjust, and continue to function despite climate disruptions.

Investments in mitigation and adaptation are not mutually exclusive: they complement and reinforce one another. The former aim to reduce the scale of future climate disruption, while the latter limit its current and future impacts. **When considered together, these two approaches enable the construction of a development pathway that is both low-carbon and resilient**, avoiding the shifting of climate costs onto future generations.

Discussions on adaptation have already been initiated through several IFD projects. First, the IFD is a key participant in the European project “¹¹”, which aims to study the financing challenges of adaptation for local and regional authorities in the EU. Additionally, the IFD addresses these issues in sectoral analyses of the transition where adaptation is already a key focus (particularly in the building sector and the agricultural transition) as well as through its “Biodiversity & Natural Capital” working group, which addresses Nature-Based Solutions. Finally, as part of its work on non-financial analysis, the challenge of strategically integrating climate risks is also addressed.

11 The IFD is collaborating in particular with the Eurométropole de Strasbourg on the development of a financing plan for adaptation tailored to local issues and composed of public and private funding sources.

To this end, the IFD conducted over 80 interviews and established a multi-stakeholder working group on adaptation (financiers, companies, experts, public authorities, etc.) to carry out this work. This work unfolded in several stages. The first step was to define, with, concrete financing scenarios applicable to project proponents (households, local authorities, businesses) as part of a climate change adaptation strategy. **A study of six specific use cases for adaptation business cases was conducted and is presented in a joint publication accompanying this report.** The working group then conducted an analysis of existing financial aid and tools (grants, loans, etc.) to identify barriers to project financing by gathering feedback from all stakeholders. Numerous consultations were held with all financial actors in the Paris financial market to assess the tools and needs for financing adaptation.

The ultimate objective of this report is to outline the conditions for mobilizing private financing tools and to provide concrete, consensus-based recommendations to promote financing for climate change adaptation. As such, this represents an innovative approach and effort to contribute positively to the public debate on climate change adaptation.



This report is based on analyses conducted as part of the ClimateFIT project, funded by the European Union. This project aims to promote innovative financing mechanisms for climate change adaptation by fostering collaboration between European regional and local authorities and stakeholders in the finance and investment sectors. To this end, innovative tools and specialized knowledge for investment planning and the development of bankable projects are being developed in collaboration with leading experts in adaptation.

In this pioneering study, the IFD examines the barriers and drivers of action regarding climate change adaptation financing across the French economy. The findings and recommendations build on the discussions and results of the ClimateFIT project, while addressing the specific needs of French regions in terms of adaptation financing.

KEARNEY

This report was produced with the valuable support and assistance of the teams at the consulting firm Kearney.



FRANCE AT +4°C:
FINANCING THE ECONOMY'S
ADAPTATION TO CLIMATE CHANGE

I. ADAPTING TO A 4°C WARMING: A MUST FOR THE RESILIENCE OF THE FRENCH ECONOMY

While the Paris Agreement sets a target of limiting global warming to below +2°C, current global projections point to a world warming by +2.5 or 3°C by 2100 compared to pre-industrial levels—even if all countries were to implement the actions already decided upon to reduce their greenhouse gas emissions. Metropolitan France is warming faster than the global average. Given the current level of ambition in climate policies and associated projections, the French mainland could see **temperature increases of up to +4°C by the end of the century**. It should be noted that France's overseas departments and territories are particularly vulnerable and face specific challenges such as more intense cyclones, rising sea levels, and accelerated biodiversity loss, including coral reefs¹².

Faced with this reality, a **paradigm shift is imperative**. Until now, climate efforts have primarily focused on **mitigation measures aimed at reducing greenhouse gas emissions**—for example, through energy-efficient building renovations, the development of low – carbon and renewable energy sources, and the decarbonization of transportation. These actions remain essential and must be accelerated.

However, the **effects of climate change are already visible**: more intense heat waves, prolonged droughts, devastating floods, and coastal erosion... They are having a lasting impact on our territory and our economy. It is therefore becoming urgent **to complement these efforts with an ambitious adaptation strategy**, acknowledging the possibility of global warming reaching +4°C.

This adaptation requires **strengthening the resilience of all pillars of the French economy**. Many sectors are affected. Among others: agriculture and the agri-food industry, facing water scarcity and yield variability; real estate and urban planning, which must adapt to heat waves, floods, coastal erosion, and rising sea levels; and critical infrastructure and industry, which must be reimagined in the face of increased risks (roads prone to clay shrinkage-swelling—RGA—, power grids under strain during heat waves, etc.).

The IFD has already engaged in several fundamental discussions on financial levers for climate change mitigation. But given the current trajectory toward a 4°C rise, it is now imperative to broaden our perspective to fully incorporate adaptation challenges. **Indeed, it is no longer merely a matter of containing climate change, but of actively preparing our economies, our regions, and our societies for its inevitable effects.**

12 <https://infos.ademe.fr/changement-climatique/2025/les-outre-mer-premiers-temoins-du-changement-climatique/>

A. THE FRENCH FRAMEWORK FOR CLIMATE CHANGE ADAPTATION: THE PNACC AS A COMMON FOUNDATION

1. PNACC-1 AND PNACC-2

France established a national climate change adaptation strategy as early as 2006, **which** took concrete form in 2011 with **the first National Climate Change Adaptation Plan (PNACC-1)**. **This plan established adaptation as a political priority** and launched research on the future impacts of climate change. The **second plan** (PNACC-2, 2018) continued this momentum and **established a framework for governance and strategic management of adaptation** at the national level. It addressed six key challenges:

- Governance and coordination: aligning national and regional actions and strengthening the legislative framework for adaptation
- Prevention and resilience: protecting people and property from climate risks
- Adaptation and environmental preservation: protecting ecosystems from the effects of climate change, using nature-based solutions whenever possible
- Knowledge and information: strengthening scientific knowledge on climate change and adaptation
- Vulnerability of economic sectors: preparing economic sectors for the impacts of climate change
- Strengthening international action: Strengthen the integration of climate change adaptation into international and European policy agendas; increase the share of development aid funding allocated to adaptation; support local actors in accessing dedicated European funds and pro ; and develop the capacity of French actors to export their adaptation expertise internationally.

PNACC 2 highlighted the importance of economic actors taking ownership of adaptation issues.

The work undertaken by PNACC-1 and PNACC-2, the national strategies on water and biodiversity, and the latest IPCC report formed the foundation for **PNACC 3**.

2. PNACC-3

The third National Climate Change Adaptation Plan (PNACC-3), published in March 2025, serves as France's strategic roadmap for anticipating and responding to the impacts of climate change. This plan is based on a reference warming trajectory for climate change adaptation (TRACC): +2°C by 2030, +2.7°C by 2050, and +4°C by 2100. The PNACC-3 thus includes 52 concrete measures aimed at preparing France for climate-related risks. Among these measures, **No. 42, led by the Directorate General of the Treasury and Bpifrance, aims to mobilize financial actors for private financing of climate change adaptation.**

This plan is organized into five pillars. The first three pillars address the major challenges of adapting French society, aiming to protect the population, strengthen the resilience of regions, and adapt human activities.

1. PROTECTING THE POPULATION FROM THE EFFECTS OF CLIMATE CHANGE

In the face of intensifying climate hazards such as heat waves, floods, and coastal flooding, the PNACC-3 emphasizes the protection of populations, particularly the most vulnerable. This includes adapting living spaces and working conditions to limit health and social risks. The plan also calls for modernizing the insurance system to ensure accessible coverage against climate-related hazards. Furthermore, it strengthens risk prevention in regions through appropriate funding, notably by increasing resources for the Barnier Fund.

2. ENSURING THE RESILIENCE OF REGIONS AND ESSENTIAL SERVICES

The PNACC-3 incorporates the +4°C warming scenario into public policy planning, making this scenario mandatory in urban and regional planning documents. This approach aims to adapt critical infrastructure—such as transportation, energy, and water networks—to new climate risks. The plan also aims to equip and support local governments in their adaptation efforts by providing them with diagnostic tools, financial resources, and enhanced technical support.

3. ADAPTING HUMAN ACTIVITIES AND STRENGTHENING ECONOMIC RESILIENCE

The third pillar of PNACC-3 aims to integrate climate change adaptation into corporate strategies and support the most vulnerable economic sectors, such as agriculture, tourism, and industry. The plan encourages the promotion of food and energy sovereignty by supporting local initiatives and sustainable supply chains. It also emphasizes innovation and research by investing in the development of technological solutions tailored to new climate challenges.

THE PNACC-3 IS STRUCTURED AROUND FIVE STRATEGIC PRINCIPLES:

- Developing measures to prepare for a science-based warming trajectory;
- Implement differentiated measures and targets for the years 2030, 2050, and 2100;
- Prioritizing measures that enable adaptation, mitigation, biodiversity protection, and the prevention of ecosystem degradation;
- Selecting, by objective and by sector, the level of adaptation based on risks and collective costs;
- Create an “adaptation reflex” across all sectors of society.

The government aims to support the French economy’s adaptation to climate change through a comprehensive strategy. This effort is now guided by a coherent strategic framework for the ecological transition, notably driven by the **Multi-Year Strategy for Financing the Ecological Transition (SPAFTE)**.

B. TOWARD AN “ADAPTATION REFLEX”

With the PNACC-3, the French government is embarking on a profound transformation aimed at establishing a genuine “adaptation reflex” across all public policies. This shift is reflected first and foremost in the systematic integration of climate risks into land-use planning and project design. **Measure 23** thus calls for “the gradual integration of the reference warming trajectory into all public planning documents,” to make the future climate an essential parameter in public decision-making. Similarly, **Measure 24** mandates “the integration of climate change adaptation issues into all technical standards,” ensuring that any new standard, infrastructure design, or public investment takes into account the expected climate conditions by 2100.

To support this capacity-building effort, the PNACC-3 establishes an **Adaptation Mission** (Measure 25), designed as a unified government engineering service for local authorities. Its objective: to help regions analyze their vulnerabilities and develop robust adaptation strategies. In the same vein, understanding of risks is advancing: the IGN has published a national flood risk map that allows for more precise identification of hazards.

This adaptation mindset is also being implemented through the mobilization of economic sectors. The DGE is leading the development of **sector-specific roadmaps**, with pilot projects in several industrial regions (the Seine Valley for agri-food, Dunkirk for aluminum), aimed at generating replicable lessons learned. Methodological innovation is advancing notably thanks to **TRACC**, which provides trajectories enabling companies to anticipate climate changes at the regional level.

THE RISK OF MALADAPTATION

The PNACC establishes adaptation as a strategic priority for the resilience of territories, ecosystems, and economic sectors. By structuring an ambitious roadmap to prepare France for the impacts of climate change, it reinforces the political visibility and operational urgency of the issue. The PNACC specifically anticipates a **major risk: that of maladaptation**.

Maladaptation refers to **adaptation actions that, rather than reducing vulnerability to climate hazards, maintain, shift, or exacerbate it**. It can result from poorly calibrated technical choices, short-term-focused investments, or uncoordinated sectoral approaches. For example, building a dike to protect an agricultural area without considering downstream impacts, or relying heavily on air conditioning without using the latest energy-efficient technologies and without adapting existing buildings, are strategies that shift the problem rather than solving it, and may even create new dependencies or inequalities.

Maladaptation **exacerbates existing imbalances, reinforces social inequalities, and reduces future room for maneuver** by locking systems into unsustainable trajectories. In this context, it is essential that public policies, territorial strategies, and investments be based on a systemic, forward-looking, and inclusive approach to avoid these counterproductive effects. This implies:

- **Systematically integrating climate change into long-term projects**, and incorporating criteria for flexibility and reversibility into adaptation projects;
- **Prioritizing “no-regret” approaches** that are beneficial under all climate scenarios;
- **And strengthening consultation and dialogue** to ensure that the choices made serve the collective interest in the long term.

Furthermore, **adaptation strategies must also be scalable and adjustable over time** to avoid the effects of maladaptation. Indeed, in a context where the climate is constantly changing and climate models remain highly uncertain, it is essential to prioritize flexible, reversible approaches capable of incorporating new learnings over time.

Opting for SfN to avoid maladaptation: Ecosystem restoration and re-naturation actions (river meandering, wetland restoration, forest restoration, urban greening) constitute flexible responses that limit cascading effects and prevent “vulnerability transfers” (upstream/downstream, sector/sector). They are part of “no-regret” approaches whose overall costs are limited and whose benefits for biodiversity are, at a minimum, advantageous for its preservation. This is therefore a cost-effective option, as it addresses multiple challenges (adaptation, mitigation, biodiversity loss) through the implementation of a single project.

C. THREE HIGHLY AFFECTED SECTORS: STAKEHOLDERS AND CHALLENGES

*This section presents the main adaptation challenges in three sectors particularly exposed to climate change: agriculture and natural resources, urban planning and territories, and industry and critical infrastructure. It outlines the key findings. **A complementary IFD report details the challenges and financing pathways to analyze the barriers and drivers for project implementation through several case studies. Readers are invited to explore these online on the IFD website.** These examples illustrate the diversity of vulnerabilities and possible responses.*

Key themes and challenges for adaptation	Agriculture and natural resources	Urban planning and territories	Infrastructure and industry
	Sustainable management of water resources	Physical adaptation of cities	Resilience of the energy production and transport network
	Adaptation of agricultural production systems and protection of ecosystems	Renovation, energy efficiency and energy conservation in the building stock	Adaptation of road, rail, maritime and river transport infrastructure
	Protection of the agricultural sector	Adaptation of areas vulnerable to the tourism sector	Development of new adaptation operators

Figure – Sectors facing significant climate change adaptation challenges (source: IFD, Kearney) [Retrieve PPT figure for layout]

1. AGRICULTURE AND NATURAL RESOURCES

French agriculture is on the front lines of climate change, due in particular to its dependence on water resources and the degradation of the natural ecosystems on which it relies.

Agriculture accounts for 58% of total freshwater consumption in France¹³, but has faced a 14% decline in renewable resources since the 1990s, a consequence of disruptions to the water cycle and increased evapotranspiration. Variability in flow rates, declining groundwater levels, and evaporation from reservoirs are exacerbating the water deficit. These pressures directly threaten the viability of irrigated agriculture, which is essential in many regions.

13 [Sustainable Development Statistics](#)

Without changes in agricultural practices, TRACC projections indicate a 20–40% increase in irrigation needs by 2050, while certain areas will become unsuitable for cultivation during periods of extreme water stress. The recurring droughts observed in southern France already illustrate this shift.

In response to this situation, several levers are relevant for the sector's adaptation, including:

- the transition to agroecological and less water-intensive practices;
- the restoration of wetlands and peatlands, which regulate water flows and store carbon;
- crop variety selection or the choice of species more resilient to climate change;
- the implementation of high-performance irrigation and the modernization of water infrastructure.

Territorial Water Management Projects (PTGE) are a key tool for local governance, aimed at balancing water uses: drinking water, agriculture, industry, navigation, energy, fisheries, recreational uses, etc. However, their widespread implementation requires significant funding and appropriate engineering.

Agriculture must adapt to a changing climate. The erosion of biodiversity, and in particular the disappearance of pollinators, threatens food security and the sustainability of our production system, while posing major economic risks to dependent sectors. Forest degradation caused by pest infestations, fires, and storms reduces the nation's capacity for forest carbon sequestration and the supply of wood essential to the transition toward a low-carbon society. Adaptation solutions—crop diversification, varietal innovation, the restoration of hedgerows and copses, and forest regeneration—can improve ecological and landscape resilience, but their adoption remains hampered by a lack of resources and technical or even political support.

Finally, the agri-food sector faces increased yield volatility. The entire value chain—production, processing, and distribution—is weakened. Without adaptation, yield losses in field crops could reach 10 to 20% by 2050¹⁴, with cascading effects on competitiveness, the trade balance, and food sovereignty.

The costs of inaction are considerable: annual losses of up to €15 billion are projected by 2050 (half of which are directly attributable to climate change), representing more than one-third of agricultural GDP¹⁵. The stakes are therefore vital: maintaining productive, sustainable, and resilient agriculture, supported by support mechanisms—public aid, climate insurance, and the mobilization of European funds.

14 [Source](#)

15 [Terre net](#)

2. URBAN PLANNING AND TERRITORIES

French cities are facing a multitude of climate change impacts: heat waves, floods, clay shrinkage and swelling, loss of thermal comfort, and pressure on infrastructure.

Heat waves are intensifying and becoming more frequent. Coupled with urban heat islands, which can create a temperature difference of up to 10°C between city centers and the outskirts¹⁶, temperatures can become unbearable. These episodes of extreme heat lead to excess mortality and significant economic losses. On the other hand, hydrological hazards (river overflows and runoff) are increasing as rainfall intensity rises. Two-thirds of French municipalities are exposed to a major natural hazard, half of which are at risk of flooding.

At the regional level, floods, rising water levels, wildfires, swelling and shrinking of clay soils, and landslides exacerbate the vulnerability of certain areas. These identified physical risks impact the insurability of property and the sustainability of local economic activities.

Local governments are beginning to organize their responses through Territorial Climate-Air-Energy Plans (PCAET)¹⁷, which promote an integrated approach to adaptation. These plans lead to concrete actions, including:

- river restoration and urban renaturation (e.g., Lille),
- thermal retrofitting of buildings that takes summer comfort into account (e.g., Strasbourg),
- deployment of district cooling networks and local renewable energy sources (e.g., Nice),
- the use of reflective materials and rain trees to limit overheating (e.g., Lyon, Marseille).

These initiatives demonstrate the feasibility of urban adaptation, but remain too scattered and underfunded. To date, fewer than 52% of the relevant inter-municipal communities have an operational PCAET. Investment needs are massive, particularly for the thermal renovation of the building stock.

3. INDUSTRY AND INFRASTRUCTURE

France's energy and industrial systems are directly exposed to the effects of climate change.

Nuclear and hydroelectric power, the pillars of the electricity mix, are heavily dependent on water resources and are affected by rising river temperatures, droughts, and floods. Thermal constraints force temporary shutdowns of power plants, while reduced water flows decrease production capacity.

¹⁶ Court of Auditors, 2024

¹⁷ The implementation of a PCAET has been mandatory for EPCIs with more than 20,000 inhabitants since 2018. Note that the TRACC will soon be enforceable in various local government planning documents, particularly the PLU.

Energy and transportation infrastructure (power lines, pipelines, railways, roads) is also weakened by extreme events: storms and high winds, fires, floods, inundations, and thermal expansion. Operators (including RTE, Enedis, and SNCF Réseaux) are implementing massive adaptation plans, involving investments of tens of billions of euros to strengthen the grid's resilience, protect facilities, and modernize equipment. Measures include physical site protection, enhanced monitoring, adaptation of design standards, and the incorporation of climate projections (based on the reference warming trajectory for climate change adaptation) into new projects.

Transport infrastructure is facing an increase in the number of disruptions caused by extreme weather events. Roads and railways are experiencing expansion, subsidence, and landslides, while flooding and inundation threaten thousands of kilometers of infrastructure. Repair and maintenance costs are rising sharply, raising questions about long-term financial sustainability.

Finally, a new ecosystem of adaptation stakeholders is emerging: public operators, startups, and innovative local initiatives. These stakeholders provide technical and/or nature-based solutions, but still struggle to scale up due to a lack of structural funding.

D. CHALLENGES IN FINANCING CLIMATE CHANGE ADAPTATION

Given the scale of investment required to adapt our economy to the impacts of climate change, **several financing avenues** must be explored and strategically combined, including:

- **Mobilizing public funding such as grants or public guarantee mechanisms;**
- The use of debt;
- **Self-financing of investments made by individuals and businesses.**

However, these resources are not unlimited. Against a backdrop of increased pressure on public finances, **mobilizing resources for climate change adaptation** will not be possible **without prioritizing needs, diversifying financial instruments, and scaling them up**. It is therefore not merely a matter of finding new financing models capable of addressing these challenges, but of making clear choices based on the impact and sustainability of the actions undertaken.

1. THE COST OF ADAPTATION: HIGH AND DIFFICULT TO CALCULATE, BUT FAR LOWER THAN THE COST OF INACTION

THE COST OF INACTION IS ALREADY BEING FELT TODAY

The cost of inaction on climate change is already significant and will continue to rise. For example, the extreme weather events of the summer of 2025 could cost the affected European regions up to 126 billion euros in GDP by 2029, according to a study conducted by Sehrish Usman of the University of Mannheim and economists at the ECB, published on September 15, 2025¹⁸. In the short term, this cost is already estimated at 43 billion euros. But in the longer term, it is necessary to factor in the various types of costs generated by disasters (human, fiscal, adaptation, direct, or indirect). These estimates remain subject to uncertainty.

According to the same study, in 2025, economic losses linked to heat waves, droughts, and floods are estimated at **10.1 billion euros**, or approximately **0.39% of France's 2024 GDP**. These costs could reach over **30 billion euros in 2029**, or **1.3% of GDP**, according to the European study. France, along with Spain and Italy, is among the hardest-hit countries, each facing losses exceeding €30 billion in the medium term. These estimates encompass multiple impacts: decreased productivity (construction, hospitality), falling agricultural yields, infrastructure damage, disruption of supply chains, and human costs (more than **2,300 deaths** already recorded in twelve major European cities during the 2025 heatwave). Losses vary significantly by region. The Languedoc-Roussillon region has experienced early and prolonged heatwaves, resulting in losses of **€1.24 billion in 2025** (€415 per capita) and could reach over **€7 billion in 2029** (approximately €2,500 per capita), representing more than **8% of the region's gross value added**. The researchers emphasize that these figures are **likely conservative**, as they do not include either the combined effects of climate hazards (such as drought and heat) or other events like wildfires, storms, or hail.

The cost of inaction in the future is expected to be very high and will continue to rise. The Stern Review (2006), one of the first to quantify the economic consequences of climate change, showed that **doing nothing would cost far more than taking action: up to 5 to 20% of global GDP could be lost in the event of inaction, compared to about 1% for making the transition**. Since then, the IPCC's work has confirmed this finding: **the longer political responses are delayed, the greater the economic, social, and environmental costs will be**. Tipping points exist: for example, beyond a certain level of ocean acidification and temperature rise, the fishing and aquaculture sectors face significant yield losses, endangering all the economic sectors that depend on them. For example, in a study published in 2017, the World Bank showed that, globally, the annual revenue loss due to overfishing in the fisheries sector amounted to \$83 billion per year¹⁹.

18 [Press Article](#)

19 World Bank Group, "Global Fisheries: Billions Lost," 2017.

THE COST OF ADAPTATION REMAINS DIFFICULT TO QUANTIFY

The cost of inaction is thus the cost of failing to invest in climate change mitigation. To reduce the financial impacts of global warming, mitigation remains the primary solution. Climate change adaptation, on the other hand, serves as a complementary measure to limit the impact of a changing climate. Adaptation therefore represents an additional investment cost that will increase over time.

Adopting a systemic approach to assess the costs of climate change adaptation is essential, as the impacts of climate disruption are interconnected, multisectoral, and evolving. A climate disturbance, such as a drought, can affect agriculture, food prices, public health, and even social stability. **Thinking about adaptation in silos would therefore risk overlooking these cascading effects**, or even leading to maladaptation. While the systemic approach is necessary to understand climate change adaptation in all its complexity, it makes estimating its costs particularly difficult. It requires taking into account interactions between sectors—for example, between agriculture, water, health, and energy—and assessing not only the direct costs of measures but also indirect costs and avoided losses.

The lack of common economic benchmarks for adaptation measures and their effects **further complicates modeling**. Estimating the costs associated with adaptation is a relatively new endeavor that poses significant methodological challenges. On the one hand, knowledge regarding the effectiveness and cost of available adaptation solutions, as well as the detailed investment needs, varies widely across sectors. On the other hand, costs depend on adaptation choices that remain partly to be defined. Adaptation is thus a strategy that must be continuously adjusted.

Some initial cost estimates have already been made and provide an order of magnitude. One thing is certain: the cost of adaptation is incomparably lower than the cost of inaction.

According to a study published in January 2026 for the European Commission's Directorate-General for Climate Action (DG CLIMA), the European Union, its member states, and the private sector are expected to invest approximately 70 billion euros per year through 2050 in climate change adaptation, in order to reduce exposure to growing climate risks and improve resilience. The study reveals that of the €70 billion that must be invested annually in adaptation, approximately €30 billion is needed for infrastructure, €21 billion for ecosystems, and €12 billion for food security. France, Italy, Germany, and Spain have the greatest investment needs for adaptation, partly due to their geographic and economic size. The study also reveals that the scale and types of investments required vary considerably from one Member State to another, depending on each country's specific characteristics.

For France, this investment range is between €9.51 billion/year and €11.96 billion/year, with a central estimate of €10.6 billion/year through 2050²⁰.

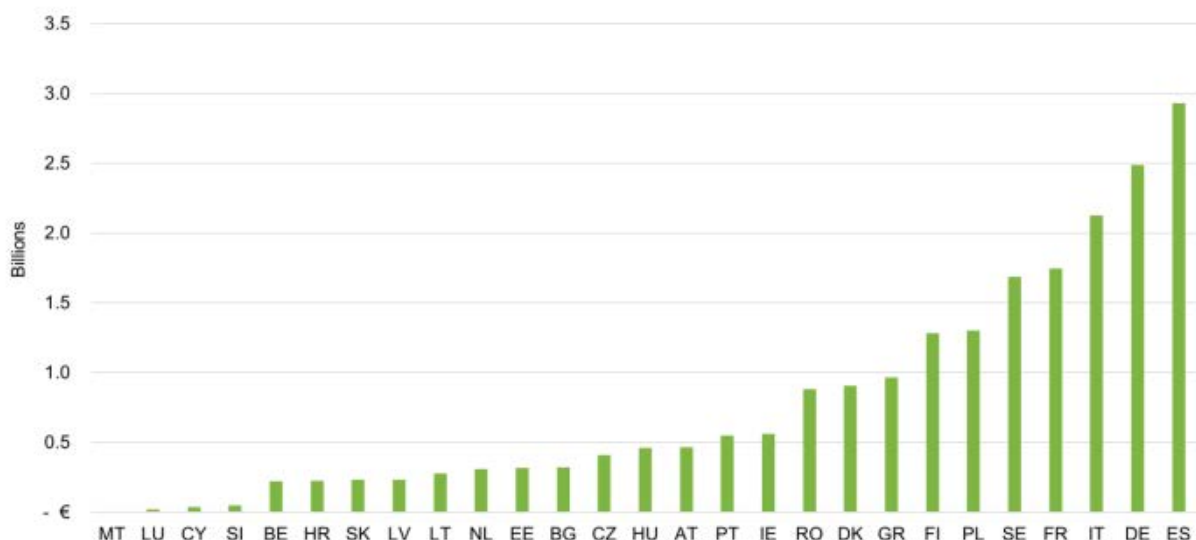


Figure – Adaptation financing needs in the EU (Source: Directorate General for Climate Action, European Commission)

The study conducted by I4CE²¹ provides initial estimates for certain sectors. **Adaptation in agriculture could require up to an additional €1.5 billion per year** over the next decade to deploy large-scale technical measures aimed at maintaining yields of France's major crops. The **building sector** was also studied, with an investment of approximately **€1 to €2.5 billion for new construction and several additional billion euros per year for existing buildings**.

When it comes to businesses, the scale of adaptation-related investments can vary significantly across sectors, ranging from 1% to 10% depending on company size and revenue, according to the report *"Business Adaptation & Resilience to Climate Change,"* published in March 2025 by BCG²². For example, 5% of companies in the financial sector invested more than 0.5% of their revenue in adaptation in 2023, compared to 14% of companies in the materials sector. **And it is not always easy to clearly distinguish between investments related to adaptation and those aimed at mitigating climate change**, as many actions can simultaneously address both objectives. For example, the energy-efficient renovation of a building both reduces greenhouse gas emissions (mitigation) and improves thermal comfort during heat waves (adaptation). **This overlap between the two categories complicates the tracking and accounting of funding**. An integrated approach is therefore essential to effectively steer climate policies and direct investments in a coherent manner.

20 European Commission: Directorate-General for Climate Action, Monteleone, L., Roberti, G., Fossati, F., Davies, W. et al., *Assessment of EU and Member States' adaptation investment needs – Study on the macroeconomic impacts of the climate transition*, 2026, <https://data.europa.eu/doi/10.2834/2895769>.

21 I4CE, *Anticipating the Effects of a +4°C Warming: What Are the Costs of Adaptation?*, April 2024, [link](#)

22 BCG, *Business Adaptation & Resilience to Climate Change*, 2025.

Economic activities related to climate change adaptation in France

According to LSEG data²³, revenue from climate change adaptation activities in France amounted to nearly **\$80 billion in 2024**, up from \$68.6 billion in 2016. Despite occasional downturns, the overall trend remains upward, reflecting the market's gradual growth. The market capitalization of the relevant French companies reached **\$52.5 billion in 2024**, based on *free float market cap*, reflecting the growing financial significance of these activities.

The definition adopted by LSEG is broad in scope: these sectors encompass both activities directly focused on adaptation (flood control, water infrastructure, desalination) and areas with co-benefits for the environment, such as green buildings, energy efficiency, and waste management. LSEG notes that there are few products or services strictly dedicated to adaptation, which justifies this broad scope.

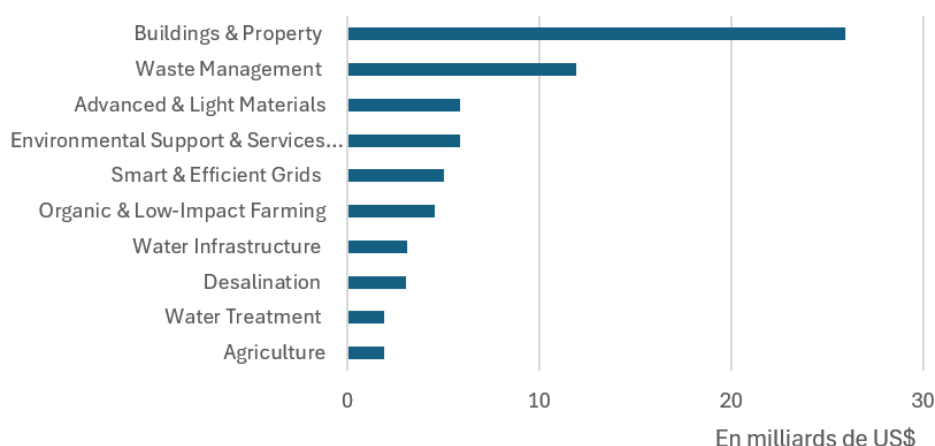


Figure – Breakdown of economic adaptation activities in France in 2024 (Source: LSEG)

The sectoral breakdown illustrates this diversity. **Buildings and real estate** account for the largest share of revenue at **\$25.9 billion**, reflecting the importance of energy retrofits and thermal insulation. Next come **waste management** (\$11.9 billion) and **environmental services** (\$5.9 billion). **Smart and efficient networks** account for \$5 billion, while **advanced and lightweight materials** account for \$5.8 billion. **Agriculture** contributes \$1.9 billion, with an additional \$4.5 billion for organic and low-impact agriculture. Finally, **water infrastructure** generates \$3.1 billion, and **desalination** approximately \$3 billion, driven primarily by Veolia, Engie, and Eiffage. **These figures highlight the growing economic significance of adaptation solutions in France and the economic opportunities in this field.**

23 These data for France were provided to the IFD by the authors, Beth Schuck and Lily Dai, of a global study published on August 12, 2025, titled "Adaptation Solutions: The Investment Opportunity in Climate Resilience." They are directly extracted from the LSEG databases. [Link](#)

It is therefore not just a matter of making more investments, but **of investing differently and viewing adaptation as an economic opportunity as well**. First and foremost, adaptation is an opportunity for society as a whole to improve the health and well-being of populations and to preserve natural resources. We must now view the need for adaptation as an opportunity to **develop economic sectors and enhance the attractiveness of regions**, particularly through the co-benefits that the ecological and energy transition can bring.

THINKING ABOUT INVESTMENT IN ADAPTATION IN A SYSTEMIC WAY

To develop a coherent response to growing adaptation needs, we must take a systemic approach to adaptation investments. The OECD proposes an investment framework that encourages a structured approach to adaptation. This *Climate Adaptation Investment Framework* identifies six essential conditions for creating an environment conducive to mobilizing public and private financing:

1. clear strategic planning and enhanced policy coherence;
2. harmonization of regulations to remove market barriers and reduce distortions that hinder investment;
3. insurance and risk transfer mechanisms to improve understanding and coverage of climate risks;
4. increased mobilization of public funding to catalyze investment and amplify its positive impacts;
5. greater integration of sustainable finance, through taxonomies, monitoring tools, and the dissemination of standards;
6. targeted measures to incentivize and secure private investment in resilience.



Figure – Components of an investment framework for climate change adaptation (source: OECD)

This framework highlights a key point: financing adaptation is not merely about supporting isolated projects, but about organizing a comprehensive ecosystem—regulatory, insurance, financial, and strategic—capable of sustainably directing financial flows toward the resilience of territories and economic activities.

Focus – What is an adaptation investment?

A **clear taxonomy of adaptation investments** is essential for directing funding toward resilience solutions.

The adaptation component of the European taxonomy in brief:

The **European Taxonomy** is a **regulatory classification framework** designed to define which economic activities can be considered “sustainable” in an environmental sense, in order to guide investments and prevent greenwashing within the European Union. It specifically covers **contributions to climate change adaptation** as one of the six environmental objectives recognized by European Regulation 2020/852. The inclusion of adaptation in the Taxonomy offers two main levers:

- **Recognizing and promoting activities that substantially contribute to climate resilience**, to enable companies to demonstrate their role in adaptation.
- **Ensuring that activities classified as green do not harm other environmental objectives**, by applying the “*do no significant harm*” principle.

However, according to an analysis by Carbone ⁴²⁴, several **methodological and practical challenges** are specific to adaptation:

- The definition of **technical adaptation criteria** remains **less advanced and less standardized** than for mitigation (emissions reduction), which complicates the uniform identification of activities that are truly “adapted.”
- The contextual and often localized nature of adaptation measures (e.g., resilient infrastructure, physical risk management) makes it more difficult **to develop universal thresholds or criteria applicable to all economic activities**.
- Consequently, **adaptation is less prominent in the delegated acts adopted to date**, and economic actors struggle to use it as an **operational financing tool**—particularly because there is still no clear list of eligible activities and precise technical criteria.

24 <https://www.carbone4.com/analyse-adaptation-climat-taxonomie-europeenne>

The European Taxonomy formally incorporates climate adaptation. Nevertheless, **its operational implementation for adaptation still has room for improvement: it primarily provides guidance on the steps to follow, without detailing the associated actions.** The definition of adaptation-related investments, deemed demanding by some stakeholders consulted, could also hinder its use. Further clarifications would help strengthen its operational impact among investors and businesses. To address these operational challenges, the European Commission launched a public consultation, which closed in early January 2026, to simplify the taxonomy's technical criteria (climate and environment delegated acts). Clarification of the technical criteria, particularly regarding adaptation, could therefore be included in the revised delegated acts, which are expected to be published in the second quarter of 2026.

Other frameworks for classifying adaptation investments

In its 2024 report, **Climate Adaptation Investment Framework**, the OECD defines an adaptation investment as an investment that helps strengthen the resilience of people, infrastructure, businesses, or ecosystems to the impacts of climate change. Three criteria help define its scope:

- **A proven benefit in terms of resilience:** the investment must reduce exposure, vulnerability, or the impacts of a climate hazard, or facilitate the adaptation of other actors (early warning systems, climate data, resilient infrastructure, nature-based solutions, etc.).
- **The “do no harm” principle:** the investment must not increase the vulnerability of other populations, territories, or ecosystems (for example, avoiding structures that exacerbate downstream flooding).
- **Consistency with national or local adaptation strategies:** the investment must be compatible with existing adaptation plans (National Adaptation Plans, regional strategies, risk prevention plans, etc.) to avoid isolated or counterproductive projects.

The OECD also distinguishes between two categories:

- **“adaptive” investments**, which strengthen the resilience of the project itself (e.g., modernizing an electrical grid to withstand heat);
- **“enabling” investments**, which allow other actors to adapt (e.g., climate data, warning systems, hydrological engineering, natural infrastructure).

Secteur	Aléas liés au climat	Exemples d'investissements possibles
Données et capacités	Tous	Analytique et prospective climatiques
	Tous	Systèmes d'alerte précoce
	Tous	Renforcement des capacités et formations
Agriculture, alimentation et pêche	Tempêtes, inondations, sécheresse	Nouvelles variétés cultivées
	Vagues de chaleur	Systèmes de refroidissement pour le bétail
	Sécheresse	Irrigation au goutte-à-goutte
Bâtiments	Sécheresse, inondations, vagues de chaleur	Solutions naturelles de rétention d'eau (par exemple restauration des zones humides)
	Vagues de chaleur	Modernisation à des fins de confort thermique
	Élévation du niveau de la mer, feux de forêt et de végétation	Déplacement des actifs exposés
Commerce et industrie	Inondations	Barrières anti-inondation au niveau des bâtiments
	Vagues de chaleur	Système de refroidissement présentant un bon rendement énergétique
	Tous	Drones et capteurs de terrain, chaînes d'approvisionnement intelligentes
Infrastructures (énergie, transports, communications)	Tempêtes, vagues de chaleur	Production décentralisée d'énergie
	Vagues de chaleur	Installation de surfaces résistantes à la chaleur
	Tous	Modernisation, suivi intelligent
Environnement et écosystèmes naturels	Acidification de l'océan, élévation de la température de la mer	Restauration des récifs coralliens
	Élévation du niveau de la mer, tempêtes	Restauration des mangroves
	Tous	Corridors visant à améliorer la connectivité des écosystèmes
Gestion de l'eau et des inondations	Sécheresse, inondations	Construction de nouveaux réservoirs
	Inondations, élévation du niveau de la mer	Défenses contre les inondations (y compris les solutions fondées sur la nature)
	Sécheresse	Remplacement des tuyaux pour réduire les fuites

Source : OCDE (2024^[1]), *Climate Adaptation Investment Framework*, <https://doi.org/10.1787/8686fc27-en> ; adapté de BII et FMO (2024), *Climate Investment Playbook*, <https://assets.bii.co.uk/wp-content/uploads/2024/06/28115333/Climate-Investment-Playbook-1.pdf>.

Figure – Exemples of adaptation investments (source – OECD)

One challenge lies in establishing a **clear taxonomy for adaptation investments**, which is essential for creating the necessary economic signals and mobilizing private financing. Several international initiatives are attempting to structure this emerging field. Between 2020 and 2024, the OECD identified **twenty-four voluntary or regulatory taxonomies** that include an adaptation component. While these framework still rely primarily on risk analyses rather than on a catalog of adaptive solutions, they provide a methodological foundation to guide financial actors. Similarly, the Climate Bonds Initiative has developed a **Climate Resilience Taxonomy**²⁵, aimed at standardizing the identification of investments that promote resilience and supporting the emergence of bonds dedicated to adaptation, while **Talwind Futures** lists more than 400 examples of investment solutions for adaptation²⁶. UNEP FI has also opened for consultation an **“Investors Resilience Challenge Framework on Adaptation”**²⁷. More recently, the BCG study “The Private Equity Opportunity in Climate Adaptation and Resilience,” published in May 2025, maps out the main climate change adaptation solutions that could represent a potential market of \$0.5 to \$1.3 billion annually by 2030²⁸.

25 <https://www.climatebonds.net/data-insights/publications/climate-bonds-resilience-taxonomy>

26 <https://www.tailwindfutures.com/taxonomy/>

27 <https://www.unepfi.org/the-investors-resilience-challenge/>

28 <https://www.bcg.com/publications/2025/investment-opportunities-in-climate-a-and-r>

Overall, these frameworks lay the groundwork for operational recognition of adaptation investments, while helping to gradually structure a nascent resilience economy. However, these studies may sometimes include scopes of definition that do not necessarily align or even create confusion among investors²⁹.

2. ADAPTATION: A STRUCTURALLY INFLATIONARY INVESTMENT BUT COMPLEMENTARY TO MITIGATION

Climate policies have long prioritized mitigation while neglecting adaptation. This hierarchy reflects a temporal rationale: acting early on the causes to reduce the future cost of the consequences. However, as climate impacts multiply, the need to invest in adaptation becomes indispensable.

It is essential to remember that mitigation and adaptation are not opposing approaches, but rather part of the same economic and environmental rationale. In many cases, investments can be complementary: energy-efficient retrofits, sustainable land management, and urban greening all contribute simultaneously to reducing emissions and building resilience. These synergies must be systematically sought, as they increase the socio-economic value of public and private investments. Conversely, mitigation projects that exacerbate physical vulnerabilities (for example, renewable energy infrastructure not adapted to local climate risks) or high-emission adaptation projects must be avoided (construction of dams or dikes that are not sustainable over time). An integrated approach to climate planning ensures this coherence and limits counterproductive trade-offs.

From a macroeconomic perspective, investment profiles for mitigation and adaptation may differ over time. Mitigation requires a massive and immediate effort, concentrated over the coming decades, to achieve carbon neutrality and stabilize the climate in the long term. Adaptation investments, on the other hand, gradually ramp up in a second phase: they follow the trajectory of climate impacts, which will intensify in the coming decades. **The investment effort is therefore not simultaneous but rather sequential, with investment peaks occurring at different times. There should therefore be no financing constraints due to an “overheating” of investments.** However, there may be investment peaks driven by increasingly severe crises that could lead to financing difficulties if not sufficiently anticipated. **It should be noted, however, that in the context of the interplay between mitigation and adaptation, it is in the interest of certain projects to integrate both components into a single investment project to avoid having to finance them twice.**

Adaptation investments are structurally inflationary: they will become increasingly necessary to maintain the economic and social sustainability of a world now transformed by climate change. However, the time lag between investments in mitigation and those in adaptation justifies phased financing planning, based on a clear distinction between the short term (acceleration of mitigation) and the medium to long term (scaling up of adaptation).

29 Spacey Martín, Roberto, Ranger, Nicola, and England, Kit, The (in)coherence of adaptation taxonomies (June 24, 2024). Available at SSRN: <https://ssrn.com/abstract=4874598> or <http://dx.doi.org/10.2139/ssrn.4874598>

The challenge, therefore, is not to choose between one or the other, but to design a coherent investment trajectory over time, where mitigating the causes and adapting to the consequences form the two pillars of a single resilience strategy.

3. IS ADAPTATION A PROFITABLE INVESTMENT?

According to a May 2025 study by the World Resources Institute based on 320 adaptation investments across 12 different countries, **every dollar invested in climate adaptation can generate up to \$10.50 in benefits, making adaptation not only an environmental necessity but also an economic opportunity. This return on investment is explained by what is known as the “triple dividend.”** First, adaptation helps reduce economic losses linked to climate-related hazards, such as floods, droughts, or storms. Second, it can generate economic benefits if these investments in adaptation are accompanied by a rethinking of business models in a world with a disrupted climate, by improving productivity, reducing certain costs (for example in the areas of health, water, or agriculture), and creating jobs. Finally, it contributes to long-term societal and environmental gains by strengthening the resilience of ecosystems and supporting more inclusive and sustainable development.

The second and third dividends often exceed the first, thereby generating high returns on investment (ROI). The World Resources Institute shows that the return is extremely high, but is likely underestimated by project proponents, as many benefits are not monetized. For example, the high ROIs in the health and disaster risk management subsectors are due to reduced mortality (first dividend), while the high returns in the sustainable agriculture and forestry subsectors are based on poverty reduction (second dividend) and related mitigation benefits (third dividend).

Table 5 | Illustrative adaptation investment benefits by dividend

ILLUSTRATIVE ADAPTATION INVESTMENT BENEFITS BY DIVIDEND	
Avoided losses (First dividend)	
• Avoided mortality	• Avoided labor loss
• Avoided injuries and illnesses	• Avoided water loss
• Avoided property loss and damage	• Avoided loss to tourism
• Avoided loss of productivity or yield	• Avoided repair costs
Induced economic benefits (Second dividend)	
• Employment gains	• Increased tourism
• Increase in productivity or yields	• Financial savings
• Additional investment attracted	• Reduced maintenance costs
• Appreciation of property values	• Productive time savings
Social and environmental benefits (Third dividend)	
• Reduced greenhouse gas (GHG) emissions	• Increased biodiversity
• Improvements in health outcomes	• Recreation opportunities
• Improvements in well-being	• Improvements in soil nutrients/fertility
• General time savings	• Enhanced water retention

Sources: WRI authors

Figure – Illustration of the triple dividends of adaptation investments (sources: World Resources Institute)

Despite this untapped potential, few stakeholders today thoroughly assess their exposure to climate risks or invest on a scale commensurate with the stakes. A paradox remains: “returns on investment” are perceived as distant and uncertain, while the immediate expense is viewed as an additional cost. Beyond issues of timing and uncertainty, this paradox stems from the fact that the benefits do not accrue entirely to the investor but may also extend to third parties or society as a whole.

Yet, companies that commit to this path and report their results through the Carbon Disclosure Project (CDP) are seeing very positive outcomes. According to the report *“The Cost of Inaction: A Guide for CEOs to Address Climate Risks”* published by the World Economic Forum in 2024, the expected return on adaptation investments ranges from \$2 to \$19 for every dollar invested, depending on the sector.

These figures are corroborated by other studies that have focused on avoided losses, but nevertheless highlight the associated variability and uncertainty. The [World Bank](#), for its part, emphasizes that every euro invested in adaptation saves 4 to 10 euros in future losses (additional costs of reconstruction or repair). [CCR studies](#) show that one euro invested in Flood Risk Prevention Plans (PPRI) represents 11 euros in avoided damage. A [BCG](#) report shows that the *benefit-to-cost ratio* (BCR) for companies implementing technologies for water efficiency, regenerative agriculture, or building resilience ranges from 2:1 to 15:1. Finally, an analysis by the U.S. Agency for International Development (USAID) reveals a benefit-to-cost ratio of between 2 and 7 for flood protection measures, and between 2 and 6 for water-efficient technologies, such as drip irrigation or low-flow systems. The returns are even higher in emerging countries, where adaptation is a key driver of resilience and development.

Comparative returns: on the stock market, adaptation outperforms mitigation

*According to a Jefferies study³⁰, companies focused on climate change adaptation solutions currently outperform those engaged in mitigation activities (renewable energy, electrification, etc.) on the stock market. Based on a global sectoral sample, Jefferies observes that companies exclusively exposed to adaptation have **outperformed by +13.5% over one year and +21.1% over three years in terms of total return** compared to energy transition companies.*

This performance gap stems from the more diversified and resilient nature of the relevant activities: the adaptation sector is dominated by industrials (30%) and financial services (25%), whereas the energy sector (43%) holds a strong dominance in the “mitigation” segment. Adaptation stocks notably include engineering groups, infrastructure managers, insurers, and multisectoral holding companies engaged in the prevention and management of climate risks.

The financial and consumer sectors appear particularly promising, driven by the emergence of financial products linked to resilience (e.g., insurance) and by increased demand for certain goods such as cooling systems and backup generators.

Thus, Jefferies highlights a new frontier in climate investing: adaptation solutions are no longer merely a matter of risk management but are becoming a true driver of financial performance, combining sector diversification with growth opportunities.

30 Non-public study provided courtesy of the Jefferies team.

The Unique Economic Efficiency of Nature-Based Solutions – The CDC Biodiversité Approach

If the adaptation project relies on the implementation of nature-based solutions, it is then possible to amplify the generated benefits. Indeed, this category of projects has a specific cost structure where the share of maintenance expenses in the overall project cost will be comparatively higher than in a conventional engineering project. This characteristic stems from the need to maintain the ecosystem in a functional state despite various hazards and external pressures that may affect it (climate events, spread of invasive alien species, etc.). However, although this characteristic requires the financing plan to be adjusted accordingly, the overall costs of SfN projects are on average 50% lower than those of a conventional project (World Economic Forum, 2022). Even though studies quantifying all of their co-benefits remain too few and far between, the initial quantitative analyses³¹ of their benefits and cost-effectiveness are very positive.

When considering the benefits derived from this type of project, it will generate long-term savings, just like any adaptation project. At the same time, the co-benefits generated will increase the cost-benefit ratio and thus the economic value of these solutions. According to the European Commission³², every euro invested in nature restoration generates an average of twelve euros in benefits, thanks to the various ecosystem services provided.

Since the financial resources of economic actors are limited, it is essential to direct investments and expenditures toward efficient actions based on the principle of additionality. In this regard, nature-based solutions (NBS)³³ are relevant options to prioritize, as they address social, economic, and environmental issues while simultaneously generating benefits in terms of human well-being, ecosystem services, resilience, and biodiversity.

For public authorities, shifting toward NBS is a major lever for optimizing spending, as it enables a coordinated response to various environmental crises within the same budget, thereby avoiding the often ineffective—or even counterproductive—siloed approach.

31 González-García et al., Co-benefits of nature-based solutions exceed the costs of implementation, Cell Reports Sustainability (2025), <https://doi.org/10.1016/j.crsus.2025.100336>

32 European Commission, Directorate-General for the Environment, *Restoring nature: for the benefit of people, nature and the climate*, Publications Office of the European Union, 2022, <https://data.europa.eu/doi/10.2779/439286>

33 Nature-based solutions are defined as measures focused on the protection, conservation, and restoration, as well as the sustainable use and management of terrestrial, freshwater, coastal, and marine ecosystems—whether natural or modified—that effectively and flexibly address social, economic, and environmental challenges, while simultaneously delivering benefits in terms of human well-being, ecosystem services, resilience, and biodiversity (Resolution 5/5 adopted in 2022 by the United Nations Environment Assembly).

The relevance of SfN aligns with the conclusions of the latest “Nexus³⁴” report from the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). This report highlights the strong interconnections between biodiversity loss, food security, water scarcity, health risks, pandemics, and climate change. It underscores the need for integrated responses, as these threats amplify one another and generate cascading systemic effects. Although it is difficult to maximize benefits for all elements of the nexus simultaneously, the study shows that the most effective scenarios rely on the preservation and restoration of ecosystems. Thus, making ecological restoration—and therefore ecosystem services—a priority emerges as the most efficient solution for jointly addressing all current crises.

That said, for private actors, this efficiency is sometimes less obvious. NIS generate non-exclusive benefits or co-benefits that are rarely monetizable (e.g., carbon sequestration, improved biodiversity, territorial resilience), which can limit their direct economic appeal³⁵. Nevertheless, NIS remain particularly attractive investment choices in terms of non-financial performance. Indeed, financing SfN enables alignment with and contribution to the objective of protecting and restoring biodiversity and ecosystems as defined by the European Taxonomy, and thus forms part of robust action consistent with European policies (Biodiversity Strategy 2030; Nature Restoration Regulation).

Alignment with the Taxonomy is not automatic, however: it requires providing the necessary information to ensure that the expenditure/investment is considered aligned with one or more environmental objectives. This entails meeting several cumulative conditions: causing no significant harm to the other five environmental objectives (DNSH: do no significant harm); and complying with minimum social safeguards.

SfNs exhibit characteristics that are particularly aligned with the requirements of the European Taxonomy: a substantial contribution to adaptation, strong compatibility with the DNSH principle thanks to their environmental co-benefits, and integration into territorial resilience strategies. While the lack of an institutional framework still hinders their recognition, SfNs are now one of the most attractive solution categories for private sector financial partners.

34 IPBES (2024). Summary for Policymakers of the Thematic Assessment Report on the Interlinkages among Biodiversity, Water, Food and Health of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. McElwee, P. D., Harrison, P. A., van Huysen, T. L., Alonso Roldán, V., Barrios, E., Dasgupta, P., DeClerck, F., Harmáčková, Z. V., Hayman, D. T. S., Herrero, M., Kumar, R., Ley, D., Mangalagiu, D., McFarlane, R. A., Paukert, C., Pengue, W. A., Prist, P. R., Ricketts, T. H., Rounsevell, M. D. A., Saito, O., Selomane, O., Seppelt, R., Singh, P. K., Sitas, N., Smith, P., Vause, J., Molua, E. L., Zambrana-Torrel, C., and Obura, D. (eds.). IPBES Secretariat, Bonn, Germany. DOI: <https://doi.org/10.5281/zenodo.13850289>

35 CDC BIODIVERSITY (2023), FUNDING AVAILABLE FOR NATURE-BASED ADAPTATION SOLUTIONS. ECLIMONT, B., BOURCET C., MEB REPORT No. 48

4. TOWARD NEW INDICATORS FOR MEASURING THE RESILIENCE OF ADAPTATION PROJECTS?

The ideas presented here aim to identify the key challenges associated with measuring the resilience and performance of adaptation projects. They represent only a preliminary outline. These issues are explored in depth in a dedicated IFD report, produced as part of efforts to harmonize non-financial analysis methodologies related to corporate climate risk. The goal is to establish a common foundation of robust, operational indicators that can be shared among financial, industrial, and public sector stakeholders, in order to better assess needs, inform investment decisions, and build a genuine adaptation economy.

One of the key challenges in financing adaptation is the **difficulty in defining a clear economic model for adaptation projects**. Unlike mitigation projects, where the project's benefits are shared (reducing CO_2 avoided locally benefits the planet's overall carbon footprint), the benefits of an adaptation project can be directly, or at least partially, realized by local stakeholders and project sponsors. However, the economic value of adaptation relies heavily on **invisible or deferred benefits**, such as avoided damage or social and environmental benefits, whose realization is often far in the future. The difficulty in defining clear economic models is compounded by the non-linearity of climate impacts: traditional risk models poorly capture the disruptions, threshold effects, or systemic cascades induced by climate hazards.

These indicators must quantify climate risks, but also demonstrate the expected benefits of better preparedness. They can take the form of **exposure indicators** (proportion of infrastructure or agricultural land in high-risk zones), **sensitivity indicators** (vulnerability of networks, infrastructure, or ecosystems to a specific type of shock), **impact indicators** (duration of business interruption, additional costs caused by extreme events, direct economic losses), or even insurance indicators (increase in premium costs or loss of insurability of strategic assets). Other forward-looking indicators, such as the projected increase in irrigation needs or the frequency of events exceeding historical thresholds, can be used.

Furthermore, while the **co-benefits** of adaptation (improved thermal comfort, increased property value, health benefits, maintenance of local economic activity, etc.) are very real, they remain **secondary in traditional investment logic since they are often difficult to monetize**. They can help enhance a project's appeal but **are not sufficient on their own** to trigger an investment decision.

In this context, **economic signals are currently insufficient** to generate a structured pipeline of adaptation projects, particularly in the private sector. Future climate risks are often underestimated or poorly accounted for in day-to-day economic decisions, which hampers demand for investment in adaptation.

Finally, the challenge is not merely to produce technical indicators, but to develop them in collaboration with stakeholders so that they serve as concrete levers for investment. The objective is twofold: **to reduce exposure and economic impacts** (cost of events, duration of disruptions, operational downtime, service degradation), while strengthening the **capacity to act quickly** (mobilizing funding, prioritizing actions). **These indicators thus become not only monitoring tools, but genuine catalysts for action.**

Thus, adaptation calls for an **evolution of the valuation models** used in financial analyses. Adaptation projects require a new approach: this involves developing tools that allow for reasoning **in terms of avoided costs and risk management** rather than direct gains, and identifying **new indicators of broader profitability** that incorporate the long-term resilience of assets and territories.

Focus – Toward an “adaptation ROI”?

Beyond calculating avoided costs, ROI can be adapted to address adaptation challenges. The Horizon Europe ClimateFIT project³⁶, in which the IFD is involved, has redefined the framework for calculating the cost-benefit analysis of adaptation projects at the European level through the **RARE (Risk-adjusted Adaptation Returns Estimation) model**, which combines risk assessment, exposure assessment, vulnerability scoring, and cost-benefit modeling within the framework of the European Union’s climate policies. The model is based on the analysis of a triple return on investment for adaptation projects:

- **Direct returns** — Revenues from resilient infrastructure, such as toll revenue from elevated roads or climate-resilient bridges
- **Indirect returns** — Avoiding insurance payments, reducing post-disaster reconstruction costs, and improving municipalities’ credit ratings
- **Social and ecological returns** — Protecting cities’ cultural heritage, preserving biodiversity, and securing agriculture

The model therefore relies on incorporating avoided risks as well as social and environmental co-benefits into adaptation financing. However, these two dimensions are often not taken into account in investment decisions.

Step 4. Cost-Benefit Modeling

Apply the adaptation ROI formula:

$$\text{Adaptation ROI} = \frac{\text{Avoided Losses} + \text{Co-benefits} - \text{Upfront Costs}}{\text{Upfront Costs}}$$

Figure – Calculating the ROI of adaptation projects (source: ClimateFIT)

36 <https://climatefit-heu.eu/>

SHIFT FROM ROI TO AVOIDED COSTS

Historically, the evaluation models used to mobilize private financing have relied on logic of immediate economic profitability, particularly through the measurement of return on investment (ROI). However, the *business model* for adaptation projects is sometimes more uncertain, which also explains the scarcity of investment offers specifically directed toward so-called “adaptation” projects. For example, this is the case with Nature-Based Solutions projects, which are underfunded by private investors. These projects, which offer significant environmental and social co-benefits (carbon sequestration, biodiversity, territorial resilience), are often difficult to monetize. **In a 2022 report, the United Nations Environment Programme identified a significant funding gap for Nature-based Solutions: only \$200 billion was allocated in 2022, driven by governments, which contributed 82% (\$165 billion), while private financing remains modest at \$35 billion (18% of total financing flows for Nature-based Solutions)³⁷.**

To respond to this paradigm shift, several tools can be deployed. These new tools can, in particular, aim to measure the **maturity of project proponents** (companies, local governments, households) in the face of climate risks as well as their **initial vulnerability** (exposure to drought, flooding, water stress, etc.). This assessment could be decisive, for example, in analyzing the insurability of an asset or in risk pricing applied to credit. The shift toward an assessment based on avoided costs presents several challenges. In particular, it requires the ability to objectify—or even monetize—future benefits whose occurrence depends on uncertain events and long time horizons.

37 <https://www.unep.org/fr/actualites-et-recits/communiqu-e-de-presse/des-flux-financiers-mondiaux-annuels-de-7-000-milliards>

PROFITABILITY AND RISK MANAGEMENT

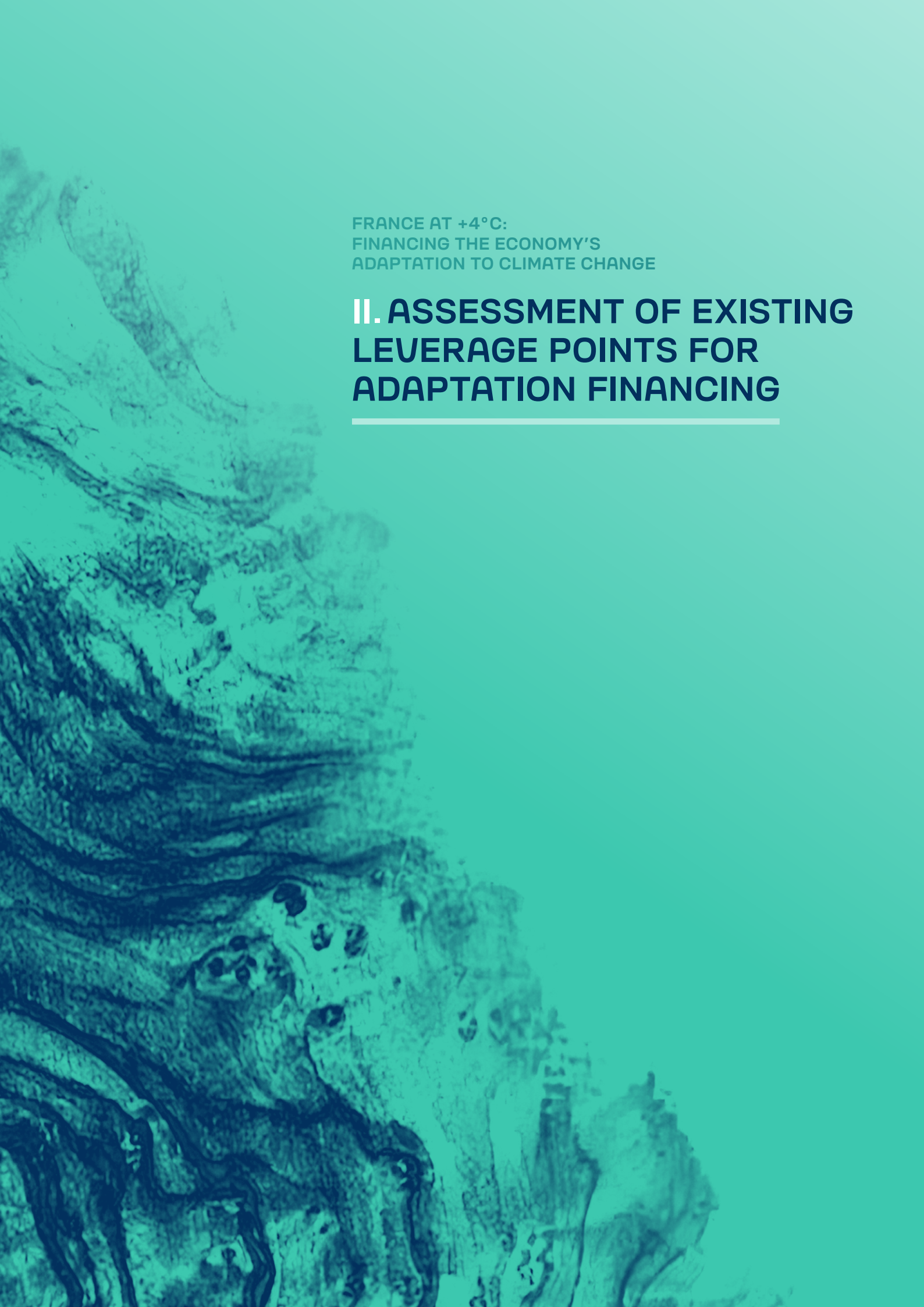
Financing climate change adaptation raises the broader question of the **very definition of profitability**. In the traditional approach, profitability is measured by a project's ability to generate revenue streams exceeding its costs over a relatively short time horizon. However, in adaptation, value creation occurs primarily through a different mechanism: the **reduction of the risk of future losses**.

Thus, adaptation should be viewed not as a cost that undermines profitability, but as a **strategic investment in risk management** that is essential to the long-term economic viability of an activity. Managing risks is a fundamental condition for economic continuity; integrating adaptation into forward-looking risk management must become standard practice, just like financial or operational management.

From this perspective, it becomes necessary to **find a common economic language** that can convey the economic value of an adaptation project, even in the absence of immediate financial gains. The goal will be to demonstrate that adaptation strengthens resilience, extends the lifespan of assets, ensures business continuity in the face of climate shocks, and ultimately preserves the competitiveness and economic profitability of project sponsors.

Similarly, an adaptation project may be perceived as **less profitable in the short term**, but more **robust** and **sustainable** in the medium and long term. This shift in financial language is essential to enable a fairer and more effective evaluation of projects in future case studies.

At this stage, these tools remain underdeveloped or underutilized by market participants in Paris. Their dissemination and adoption are essential for structuring investment offerings that incorporate adaptation considerations and for informing capital allocation decisions.



FRANCE AT +4°C:
FINANCING THE ECONOMY'S
ADAPTATION TO CLIMATE CHANGE

II. ASSESSMENT OF EXISTING LEVERAGE POINTS FOR ADAPTATION FINANCING

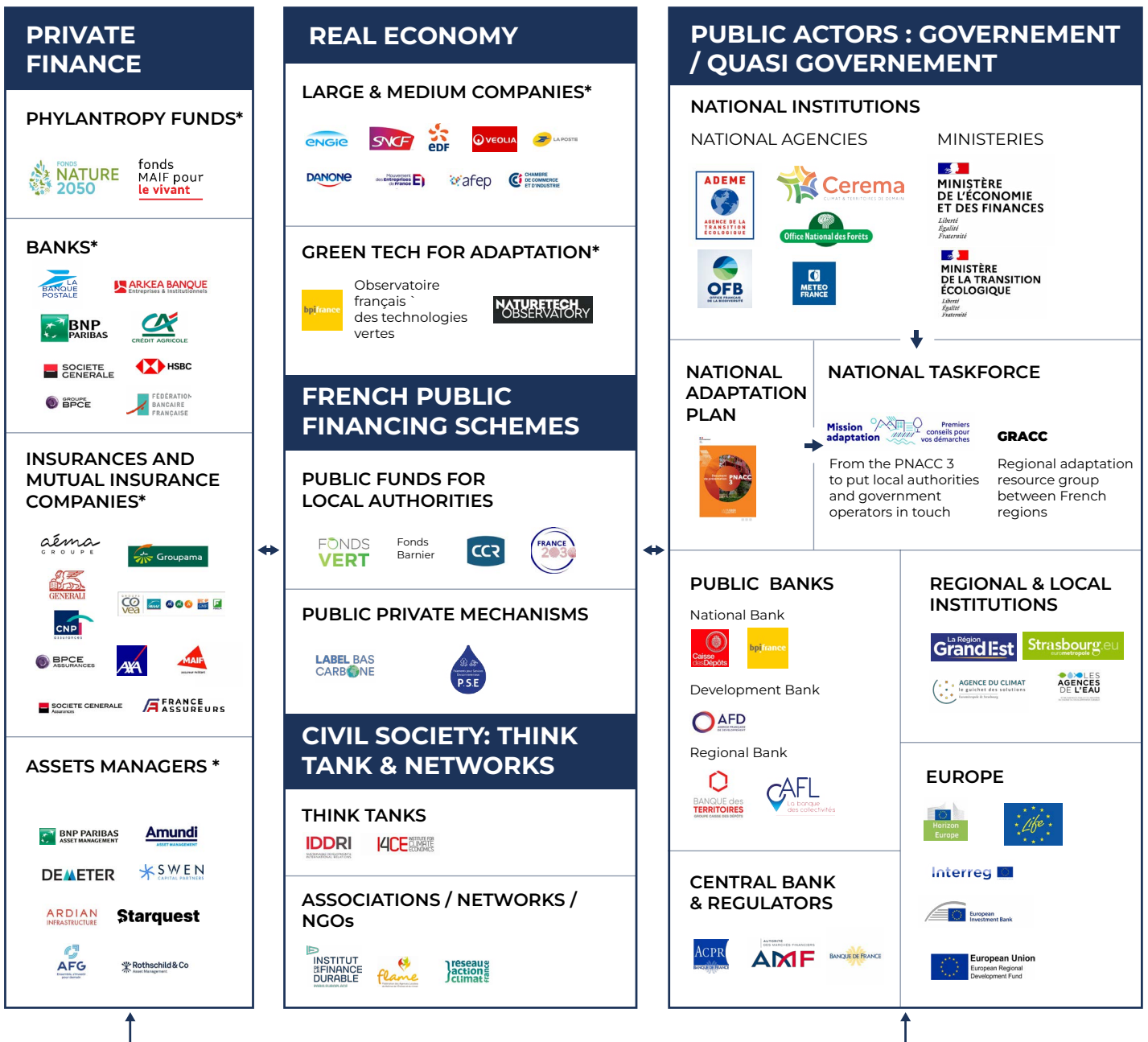
After establishing, in the first part, the scale of climate change impacts and the adaptation needs they generate in the French economy, this second part provides an overview of the **levers currently available to finance adaptation**. It analyzes, in turn:

- **public action**, which is beginning to establish a framework for intervention, including grants and dedicated loan programs, while developing engineering tools to support local stakeholders;
- **businesses**, which face the challenge of anticipating transformations in their business models and the need to adopt new climate risk management practices;
- **financial institutions**, which are developing the first initiatives aimed at integrating adaptation into credit, investment, and insurance policies, although these initiatives are still in their early stages.

The key challenge is the distribution of adaptation costs among the various economic actors—the government, businesses, and households. This appears to be a key lever for fostering the mobilization of private financing.

This analysis highlights a dynamic that is real but still fragmented. It thus offers a cross-cutting view of the strengths and limitations of the current system, in order to identify the conditions necessary for a more coherent and massive mobilization of funding for adaptation.

ADAPTATION INVESTMENT LANDSCAPE FRANCE



This document was created as part of ClimateFIT project which aims to support innovative financing mechanisms for climate change adaptation by providing key information on funding sources and strategies.
For more information : <https://climatefit-heu.eu/>

*A selection of players involved in climate change and adaptation financing identified and met during ClimateFIT project.

Figure – Map of stakeholders in climate change adaptation financing in France (Source: IFD and the Climate Agency of the Eurometropolis of Strasbourg as part of the ClimateFIT project)



Figure – Map of stakeholders in climate change adaptation financing in France (Source: IFD and the Climate Agency of the Eurometropolis of Strasbourg as part of the ClimateFIT project)

GUIDE TO THE MAP OF CLIMATE CHANGE ADAPTATION FINANCING STAKEHOLDERS IN FRANCE

*As part of the Horizon Europe ClimateFIT project, the IFD, in partnership with the Climate Agency of the Eurometropolis of Strasbourg, has identified the main actors in adaptation financing in France. Through interviews conducted as part of this project and, more recently, those conducted as part of the IFD's work, this document aims to provide a concise overview of the main actors working on adaptation in France, with references for the most advanced among them to the financial tools and mechanisms already deployed by these actors. **It should be noted that this mapping is not exhaustive** and represents a real-time snapshot of the adaptation financing landscape in France, and is therefore intended to be supplemented and expanded. The mapping depicts the landscape of investment in terms of supply and demand, including key actors, the legal framework for climate change adaptation, existing sources, and the first adaptation financing solutions in France. This overview helps identify the main groups of actors playing a role in adaptation financing in France and their interactions.*

A. PUBLIC POLICIES: AN EMERGING FRAMEWORK IN FRANCE AND EUROPE

In recent years, French public policy has initiated a notable shift: climate change adaptation is becoming a central pillar of environmental policies. The **PNACC-3**, with the introduction of a reference warming trajectory (+4 °C by 2100), marks an important milestone by establishing adaptation as a systematic criterion for public planning.

The government aims to support the French economy's adaptation to climate change through a comprehensive strategy. This effort is now underpinned by a coherent strategic framework for the ecological transition, notably driven by the **Multi-Year Strategy for Financing the Ecological Transition (SPAFTE)**.

The SPAFTE explicitly prioritizes adaptation alongside mitigation, biodiversity, and sustainable water management, emphasizing that the ecological transition cannot succeed without significant financial investment in these various areas. It underscores that the investments required for climate resilience—whether in infrastructure, networks, agriculture, regional development, or industry—must be planned, secured, and shared between public and private actors.

The challenge is to establish a national framework in which adaptation is no longer merely a regulatory obligation, but an **investment priority**, requiring robust financial decisions and coordinated action among the State, local governments, public operators, businesses, and financial actors.

This shift paves the way for a gradual increase in dedicated funding, as well as better coordination between public and private financing—an essential condition for giving the French economy the means to prepare for a France at +4°C.

A SIGNIFICANT INCREASE IN FUNDING FOR ADAPTATION IN THE FEDERAL BUDGET

In a September 2025 study, I4CE showed that adaptation funding in France has been growing significantly in recent years. This trend has resulted in **1.7 billion euros³⁸ in public funds explicitly allocated to adaptation in 2025**, in the form of national budget appropriations and resources mobilized by public operators, public financial institutions, and public service companies. These are primarily funding allocations created or increased for the implementation of adaptation measures through the Water Agencies and various mechanisms such as the Green Fund, the Barnier Fund, and the France 2030 calls for projects. It also includes resources dedicated to supporting research and innovation, as well as adaptation initiatives through engineering and coordination capabilities.

Beyond the €1.7 billion specifically earmarked for adaptation, the I4CE study also notes that today, tens of billions of euros in public spending also contribute significantly to adaptation. For example, this includes in particular:

- investments in the energy transition with proven co-benefits for adaptation, such as those made for infrastructure modernization, energy-efficient building retrofits, or forest regeneration.
- policies that, by their nature, help manage climate risks, such as flood prevention, civil protection, and health-environment policies.

Breakdown of the €1.7 billion across major categories:

- **Water agencies (12th program):** ~€939 million in aid where adaptation is a primary objective.
- **Funding for implementation** (Green Fund – adaptation component, increase in the Barnier Fund post-PNACC3, ecological planning for agriculture/forests, capacity-building pacts, etc.): ~€714 million in total.
- **Research & Innovation** (Priority Research Programs and Facilities): multi-year budget, ~€46 million/year allocated by I4CE for 2025.
- **Engineering, coordination, and management** (ADEME, CEREMA, Banque des Territoires, etc.): ~€24 million (including €3.3 million for national management / €7.5 million for general engineering / €13 million for thematic engineering).

38 I4CE, [Adapting France to +4°C: Means, Needs, Financing](#), 2025.

	Moyens nationaux mis en œuvre dans le cadre de projets LIFE dédiés à l'adaptation	1,4 M€
	Initiative Adaptation Outre-Mer (IAOM)	0,5 M€
	Action de l'Agence Française de Développement en faveur de l'adaptation dans les Outre-Mer	1,7 M€
	France 2030 - Appel à projets « Innov'Eau »	33 M€
	Fonds vert – volet « Plan Eau Mayotte »	5,8 M€
	Démarche « Quartiers résilients » portée par l'ANRU	14 M€
	Fonds vert – volet « renaturation »	62 M€
	Moyens additionnels post-PNACC3 du Fonds Barnier	+75 M€
	Fonds vert – volet « inondation »	9,5 M€
	Fonds vert – volet « adaptation aux risques en montagne »	4,9 M€
	Nouveaux moyens dédiés à la prévention des risques de retrait-gonflement des argiles	30 M€
	France 2030 - Appel à projets « prévention et remédiation des désordres bâtimentaires dus au phénomène de retrait et gonflement des sols argileux (RGA) »	2,6 M€
	Fonds vert – volet « littoral »	2,8 M€
	Pactes capacitaires feux de forêt	48,6 M€
	Dépenses spécifiques à l'adaptation des bâtiments	0,9 M€
	Investissements dans l'adaptation des centrales nucléaires	38 M€
	Augmentation des efforts de DFCI	+25,2 M€
	Planification écologique – Amont forestier	
	Renouvellement, Appels à projets « Graines et Plants » et « Exploitation et sylviculture performante et résiliente », MIG ONF Adaptation	174 M€
	Planification écologique – Aval forestier	
	Appel à projets « Industrialisation Performante des Produits Bois »	47,1 M€
	Programme national de développement agricole et rural	3 M€
	Plan agriculture climat Méditerranée	25 M€
	Actions soutenues dans le cadre de France 2030	106 M€

Figure – Public funding for adaptation: new budgets or expansions of existing budgets specifically justified by increased needs related to climate change in 2025 (Sources: I4-CE)

In addition to this public spending specifically earmarked for adaptation, there are related policies with significant co-benefits for adaptation. The government's Green Budget (2025) estimates €25 billion in spending to promote resilience (operators and programs helping to better prepare the economy and regions for climate change). For example, the Green Fund allocated €1.43 billion to renaturation in 2024; and €707 million in grants for energy-efficient building renovations by local governments. There are five pillars of resilience-enhancing spending:

- **Natural resources, agriculture, and sustainable management** — public funding supporting balanced water management, soil and forest conservation, which contribute to the resilience of ecosystems and regions.
- **Low-carbon transportation and mobility** — public investments in transportation infrastructure that promote emissions reduction while contributing to the resilience of networks against hazards.
- **Energy and energy efficiency** — measures supporting renewable energy, energy conservation, and energy efficiency, which reduce the energy system's vulnerability to climate shocks.
- **Green competitiveness and innovation** — funding for green industrial sectors and technological tools that strengthen the resilience of economic activities.
- **External Action and Transition Support** — International Support for Resilient Climate Action.

Despite this positive momentum, efforts must continue in the coming years. Indeed, the budget allocations for adaptation in 2026 are under pressure due to a tight budgetary context and reduced human resources³⁹.

Beyond government action, state agencies—particularly the water agencies, the French Environment and Energy Management Agency (**ADEME**), the Center for Studies and Expertise on Risks, the Environment, Mobility, and Planning (**CEREMA**), **Météo France**, the **National Forestry Office** (ONF), and the **French Office for Biodiversity** (OFB) play an essential role in the operational implementation of the adaptation strategy across French territories. Various prevention, assistance, and support mechanisms enable different stakeholders (local authorities, households, businesses) to address the challenges of adaptation and its financing. Below, we detail a number of the financial and technical mechanisms put in place to support project leaders.

39 The I4CE study highlights that despite a slight increase in staff numbers in 2024, the long-term trend has been marked by a significant decline since 2015, affecting in particular the ONF (-1,218 FTE), Météo France (-584 FTE), the Water Agencies, and the IGN (-198 FTE each).

1. PUBLIC GRANTS EARMARKED FOR ADAPTATION

THE BARNIER FUND – A LONG-STANDING LEVER FOR PREVENTION AND ADAPTATION

The Barnier Fund, officially known as the Major Natural Risk Prevention Fund (FPRNM), is an institutional pillar of natural risk prevention in France. Created in 1995, it aims to finance **measures for the prevention, protection, and relocation** of people and property exposed to major natural risks (floods, inundations, landslides, etc.).

Its eligible programs include, in particular:

- **studies and vulnerability assessments** of exposed areas or buildings;
- **prevention or protection works** (dikes, raising, reinforcing structures, protective infrastructure);
- **the voluntary acquisition or expropriation** of property located in high-risk areas, or the relocation of affected or threatened populations.

In 2025, the Barnier Fund was increased to an annual budget of **300 million euros**, following government announcements.

WATER AGENCY GRANTS FOR ADAPTATION

In 2025, Water Agencies account for the **largest share** of budgets explicitly dedicated to adaptation: of the 1.7 billion euros identified, **approximately 939 million euros** come from Water Agencies⁴⁰. A significant portion of the agencies' funding is now explicitly directed toward adaptation: **40% of their funding must be allocated to climate change adaptation actions**⁴¹.

Priorities include water conservation, integrated water resource management, prevention of water crises (droughts, water shortages), reduction of water withdrawals, and support for projects compatible with Local Adaptation Plans (PACC).

The funding covered does not apply solely to “water projects” in the strict sense: it can be used to modernize or adapt hydro-agricultural infrastructure, improve the resilience of watersheds, support the implementation of local PACCs, or facilitate sustainable management systems (irrigation, reservoirs, etc.).

40 [I4CE](#)

41 [I4CE](#)

GREEN FUND (ADAPTATION COMPONENT)

The Green Fund is one of **the government's recent initiatives** that can be mobilized for climate change adaptation through its “adaptation component.” The types of projects by local governments and local stakeholders that can be supported under this framework are varied:

- renovation or **modernization of infrastructure**—transportation, buildings, networks—to anticipate climate impacts (heat, floods, water stress, etc.);
- policies for **natural risk prevention**, civil security, and crisis management—including the construction of infrastructure to cope with hazards, disaster preparedness, and the resilience of public systems;
- support for projects in **ecological land use planning, sustainable urban planning, water management, renaturation, and biodiversity**, which contribute to the adaptation of territories and the resilience of socio-ecological systems.

PILOT PROGRAMS – CLAY PREVENTION FUND

Launched in September 2025, this innovative fund, initiated by the government and endowed with 30 million euros, provides support to households on an experimental basis in 11 pilot departments with the aim of testing and evaluating the most effective solutions, and collecting data on certain targeted areas with a view to potentially expanding the assistance nationwide.

Specifically, homeowners will first be offered assistance to conduct a “vulnerability assessment” of their home (study phase), with funding covering up to 90% of the costs, subject to a maximum limit of 2,000 euros. In a second phase (construction phase), the government may fund up to 90% of support and project management services (up to €2,000), and up to 80% of expenses incurred for the work (subject to a cap on eligible expenses of €15,000). The owner may submit only one application for assistance per phase and per dwelling⁴².

2. EXPANDING GREEN LOAN OFFERINGS TO MEET EVOLVING NEEDS

The schemes developed by public banks provide support to stakeholders through specific loans. Public banking institutions target specific audiences. For example, **the Banque des Territoires** is developing a financing offer for adaptation projects for local authorities. The **Public Investment Bank** is developing a program for businesses. Finally, **the French Development Agency (Agence Française de Développement)** also contributes to adaptation through development aid, which certain overseas territories, for example, can benefit from.

42 <https://fonds-prevention-argile.beta.gouv.fr/>

BANQUE DES TERRITOIRES: DEDICATED PROGRAMS TO SUPPORT LOCAL AUTHORITIES' ADAPTATION

Caisse des Dépôts (of which the Banque des Territoires is a business unit), France's leading public financial group, has adopted a **climate change adaptation policy**⁴³. This strategy has a dual objective: **to reduce the climate risks affecting its operations** and **to develop new financial services to support regional resilience**, thereby strengthening the robustness of its own asset portfolio. As an investor in local projects, the CDC is gradually integrating adaptation into its shareholder agreements and ESG contractual clauses to embed this issue in shareholder dialogue.

In this context, the **Banque des Territoires** supports local authorities in developing and implementing their adaptation strategies. It leverages both territorial engineering—assessments, investment prioritization, and decision-making support—and dedicated financial tools. A dedicated budget of **€1 billion in loans and investments**, the vast majority of which comes from the Savings Fund, is now earmarked for adaptation projects: renaturation, water management, resilience of public buildings, exposed infrastructure, etc.

This initiative is aimed at local governments, public land agencies, semi-public companies (SEMs), and all stakeholders in regional planning, with a particular focus on coastal regions, overseas territories, mountainous areas, and highly exposed urban zones⁴⁴.

Among the main financial tools offered to local governments are:

- **The Aqua Prêt**, dedicated to integrated water management: stormwater, river restoration, coastal management, dredging, and hydraulic infrastructure;
- **The PSPL TE – Biodiversity**, which funds projects for ecosystem restoration, renaturation, ecological connectivity, and Nature-Based Solutions;
- **The PSPL TE – Adaptation**, aimed at securing public buildings and facilities exposed to climate-related hazards (floods, inundation, heat, clay shrinkage and swelling, etc.).

By combining engineering, financing with attractive terms, and legal certainty, Banque des Territoires has become one of the leading public entities supporting climate adaptation for French local authorities.

43 <https://www.caissedesdepots.fr/sites/cdc.fr/files/2025-12/Groupe-CDC-Politique-d-adaptation-au-CC-Nov-2024.pdf>

44 <https://www.banquedesterritoires.fr/offres/adaptation-changement-climatique-littoral>

BPIFRANCE: DEDICATED PROGRAMS TO SUPPORT BUSINESS ADAPTATION

The Public Investment Bank is also beginning to incorporate the adaptation dimension into its offerings.

→ Bpifrance's [Green Loan](#) is a financial product designed to fund ecological and energy transition projects for businesses (micro-enterprises, SMEs, and mid-sized companies). This loan therefore enables the financing of projects with co-benefits for adaptation.

→ The [Green Guarantee](#) offered by Bpifrance is a risk-mitigation mechanism for businesses that provides up to 80% coverage for micro-enterprises and SMEs financing projects related to the ecological and energy transition. Bpifrance has expanded the scope of its **Green Guarantee** to include criteria related to adaptation.

Bpifrance also conducts awareness-raising studies on issues related to the ecological transition and adaptation—particularly among small and medium-sized enterprises. A [recent study by Bpifrance Le Lab](#) highlights the lack of awareness among economic actors regarding the challenges of adapting to climate change and their exposure to climate risks. **In fact, 68% of executives surveyed as part of this study do not consider adaptation to climate change a priority.** While the consequences of climate change are already tangible, leaders of SMEs and mid-sized companies view their businesses' adaptation to this new reality as a challenge that still lies far in the future. To better address this issue, Bpifrance, in partnership with Ademe, offers a support program for SMEs and mid-sized companies: Diag'Adaptation.

Bpifrance's role also involves identifying and cataloging emerging companies in the adaptation sector. Through its [Greentech Observatory](#), Bpifrance has identified 60 French startups addressing adaptation challenges. The vast majority of these companies focus primarily on climate data analysis and decision support, while solutions that directly address the physical impacts of climate change remain less explored at this stage (e.g., flood protection, building insulation, biomimicry, etc.).

Bpifrance's **2026–2030 Climate Plan** incorporates the adaptation dimension (not just mitigation). This is reflected in:

→ Climate and environmental risk management: by 2030, Bpifrance aims to ensure that all financing applications undergo a systematic analysis of companies' maturity and exposure to climate and environmental risks (CERs).

→ Supporting SMEs and mid-sized companies in their adaptation efforts: Bpifrance will deploy specific tools such as the **Diag Adaptation**, designed to help SMEs and mid-sized companies identify and anticipate physical risks linked to climate change (droughts, floods, heat waves, etc.) and develop an action plan to strengthen their resilience to these risks.

THE FRENCH DEVELOPMENT AGENCY (AFD): A PIONEER IN ADAPTATION FINANCING

Committed to these issues since 2005 through its first climate strategy, followed by a “climate and development” action plan in 2011, AFD explicitly supports public adaptation policies in developing countries. Since 2021, France’s target of **€6 billion in annual climate commitments—including €2 billion dedicated to adaptation**—has enabled a significant ramp-up: AFD’s adaptation financing has risen from **€146 million in 2012 to €2.2 billion in 2022**, and then to **€3.1 billion in 2024**, representing **41% of its climate financing**⁴⁵. This momentum reflects increased demand from partners in vulnerable countries.

AFD applies **common principles** defined with multilateral development banks and members of the International Development Finance Club (IDFC)⁴⁶, enabling the identification of adaptation activities, the assessment of exposure to climate risks (drought, coastal erosion, sea-level rise, floods, heat waves), and the targeting of the most necessary projects. It places particular emphasis on **Nature-Based Solutions**, which are considered more sustainable and less costly, despite sometimes longer implementation timelines. As a donor in developing countries, AFD also develops risk assessment tools for the various infrastructure projects it finances.

For each project, an internationally shared methodology distinguishes the portion of funding allocated to mitigation from that dedicated to adaptation. AFD thus works across a **continuum of actions**⁴⁷, ranging from projects explicitly focused on “adaptation” to projects offering **co-benefits for adaptation**, particularly in three major sectors:

- **Water and sanitation** (water resilience, integrated resource management),
- **Agriculture** (transition of practices, soil protection, resilient irrigation),
- **Cities** (heatwave management, renaturation, combating coastal erosion).

In this context, AFD can finance projects in certain overseas territories. For example, projects to restore mangrove sites through community-based climate change adaptation measures⁴⁸.

AFD is also implementing a framework initiative: **AdaptAction**⁴⁹, a support program dedicated to particularly vulnerable countries. It aims to strengthen national capacities for risk analysis, planning, and implementation of adaptation policies.

45 Court of Auditors, [Development Aid and Adaptation to Climate Change: The Contribution of the French Development Agency \(AFD\)](#), 2024.

46 IDFC

47 <https://www.afd.fr/fr/ressources/climat-bilan-activite-2024>

48 <https://www.afd.fr/fr/projets/restauration-de-sites-de-mangroves-dans-la-caraibe-oeco>

49 [AdaptAction](#)

THE GREENFIN LABEL: ADAPTATION AS A STANDALONE ENVIRONMENTAL OBJECTIVE

The Greenfin label was launched in 2015 by the Ministry for Ecological Transition. It is intended for green investment funds and is recognized for its stringent environmental standards.

The Greenfin label's guidelines list the categories of activities falling within the scope of the ecological transition ("eco-activities") that are eligible for funding from funds applying for the label. Adaptation is included among these eco-activities⁵⁰. Alternatively, starting in 2024, funds may also use the European taxonomy to determine their eligible green activities.

The European taxonomy specifically covers contributions to climate change adaptation as one of the six environmental objectives recognized by European Regulation 2020/852.

In both respects, the Greenfin Label encourages investments in activities that reduce vulnerability to climate-related risks.

3. A RANGE OF TOOLS TO SUPPORT THE ADAPTATION OF BUSINESSES AND LOCAL AUTHORITIES

DIAGNOSTIC TOOLS FOR BUSINESSES AND LOCAL AUTHORITIES

ADEME develops and supports various tools and methodologies to help businesses and local authorities advance on the issue of adaptation:

→ **Climate risk diagnostic methods:** OCARA and [OCARA](#) for SMEs, which enable the assessment of physical climate risks affecting a company's value chain. These methodologies are more widely used within the [ADEME x BPI DIAG Adaptation](#) framework, which provides a diagnostic tool for businesses to identify the main current and future physical risks that could affect the operations of the site being assessed. More broadly, the [Biodiversity Diagnostic](#), coordinated by BPI in partnership with the French Office for Biodiversity, also helps companies identify nature-related risks and assess the resilience of their value chains. Finally, the [Climadiag Expert](#) initiative, led by ADEME and the network of Chambers of Commerce and Industry, also enables an assessment of climate risk exposure for the smallest businesses.

→ **A method to support the development of an adaptation and assessment strategy:** the [ACT Evaluation Adaptation](#) methodology, in particular, allows for the evaluation of a company's maturity in addressing adaptation-related challenges. Finally, the [ACT Step-by-Step Climate](#) methodology (launching in early 2026) will help companies develop a transition plan that incorporates adaptation challenges.

50 <https://www.ecologie.gouv.fr/politiques-publiques/label-greenfin>

→ **Useful resources for companies:** ADEME, in collaboration with the EpE association and the Ministry of Ecological Transition, has published a guide⁵¹ titled *“In Business: How to Embark on a Path to Climate Change Adaptation,”* which aims to help companies address the issue of climate change adaptation—an essential step to ensure the sustainability and continuity of their operations. Through the testimonials of 30 French companies, it demonstrates that it is possible to embark on an adaptation process regardless of a company's size or sector of activity.

→ **For local governments:** **TACCT** is an integrated methodology designed to support these stakeholders in conducting a risk assessment and then developing a regional adaptation strategy, and the digital service *“Plus fraîche ma ville”* (a digital service designed to support local governments in implementing an action plan specifically focused on urban heat island issues).

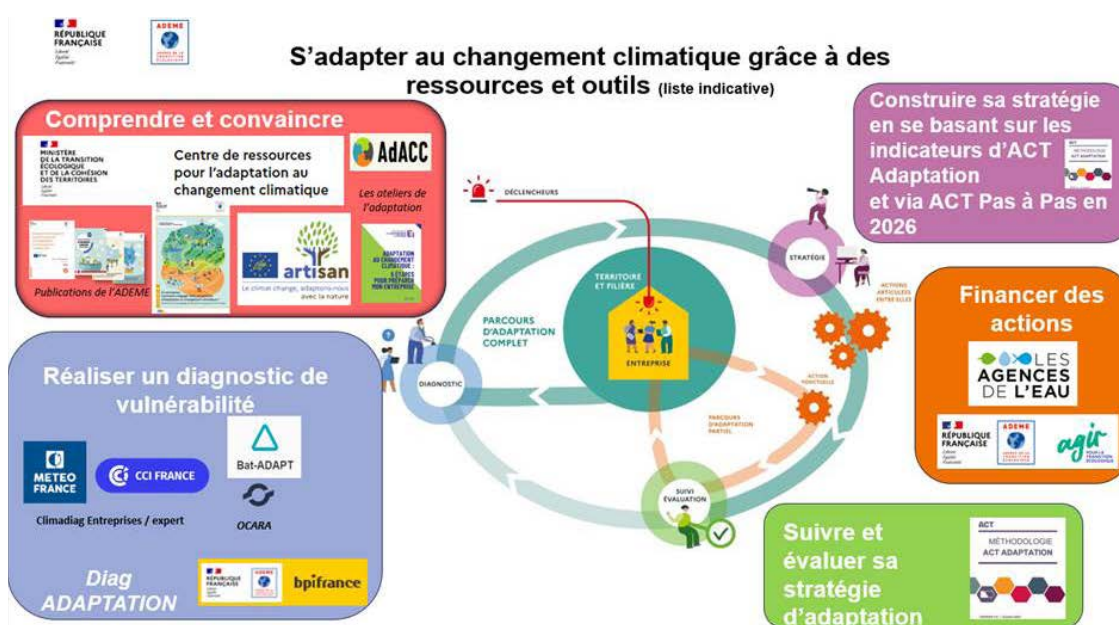


Figure – illustration of ADEME's tools and initiatives (source: ADEME)

More broadly, the use of tools developed by ADEME can also help financial institutions better understand the climate risks within their investment portfolios:

- Either directly by applying the climate risk assessment methodology (ACT Adaptation) to the companies in their portfolios;
- Or indirectly by drawing on the adaptation roadmap proposed by Ademe to companies to assess their maturity (for example, by valuing a company that is embarking on an Adaptation Diagnosis).

51 Read the [guide](#)

CLIMATE AND EXPOSURE DATA TOOLS

THE BANQUE DE FRANCE CLIMATE INDICATOR: A RISK EXPOSURE INDICATOR FOR COMPANIES

To support companies in identifying and managing their exposure to climate change, the Banque de France, in cooperation with ADEME and drawing notably on the ACT methodologies, is developing a **two-component climate indicator: transition and adaptation**⁵². By 2027, this indicator will cover approximately 20,000 companies responsible for nearly 60% of greenhouse gas emissions, enabling them to steer their transition and become benchmarks for financiers.

By early 2026, an **automated diagnostic portal**, accessible via companies' executive dashboards, **will eventually cover nearly 5 million companies with site-specific corporate exposure indicators**. Specific support is planned for priority sectors (agriculture, real estate, urban planning, and tourism) in collaboration with public entities such as ADEME.

While the transition indicator is already being rolled out, **the climate adaptation indicator, scheduled for 2027**, aims to assess companies' exposure to future climate hazards (heat waves, droughts, high winds, fires, extreme precipitation) based on the Reference Warming Trajectory for Climate Change Adaptation (TRACC) and spatialized climate data from Météo-France's DRIAS portal. This assessment is based on a **sectoral and territorial approach**.

More broadly, as part of this "Climate Indicator" program, the Banque de France has made a **diagnostic tool for climate change adaptation (ODACC)** available to all business leaders since late 2025. Specifically, any company can view, free of charge, the climate hazards to which it is exposed throughout France, as well as how these hazards are projected to evolve by 2030, 2050, and 2100. Based on Météo-France's climate change models, this data complies with the TRACC and is accessible via the "Espace dirigeant," the Banque de France's digital portal dedicated to each company:⁵³.

This initiative has also been selected as an action under the **PNACC** (Measure 41, Action 1).

52 See the partnership between the Banque de France and ADEME: <https://www.banque-france.fr/fr/communiqués-de-presse/la-banque-de-france-et-lademe-renforcent-leur-partenariat-sur-act-et-lindicateur-climat>

53 <https://www.banque-france.fr/fr/a-votre-service/entreprises/espace-dirigeant>

Météo-France provides local authorities, businesses, and planners with several operational tools to analyze vulnerability to climate change at the local level and plan for adaptation. Among them:

- **Climadiag Commune (as well as Climadiag Entreprises)**, a freely accessible climate assessment that provides historical and projected indicators (temperature, rainfall, heat waves, drought, fire or flooding risks) for each municipality—a key resource for urban planning, water management, and risk prevention programs⁵⁴.
- **DRIAS, the Future of Climate**, serves as a reference platform: it offers regionalized climate projections (scenarios through 2100, notably based on the TRACC model), access to data in a usable format, and thematic maps, enabling the integration of future climate conditions into development studies, infrastructure planning, land-use planning, and risk management⁵⁵.
- **DRIAS-eau** provides hydrological projections based on the TRACC model.

These tools constitute a scientific, operational, and shared foundation—an essential prerequisite for building credible and context-specific adaptation strategies.

The National Forestry Office (ONF) supports local authorities and the government in adaptive forest management: selecting more resilient tree species, enhanced health monitoring against pests and diseases, restoring degraded forests, managing fire risk, and supporting regional projects that incorporate the “climate buffer” function of forest ecosystems.

The French Office for Biodiversity (OFB) develops decision-making tools based on knowledge of biodiversity and ecological connectivity, funds local nature-based adaptation projects, and produces ecological assessments to inform land-use planning decisions.

A PLATFORM CONNECTING “RESEARCHERS” AND “PROVIDERS” OF ADAPTATION SOLUTIONS

Building on the “Je – décarbône” platform developed in close collaboration with the government, the “Je-m’adapte” platform is a shared directory of climate resilience solutions across France. The tool, launched in November 2025, lists solutions and projects that enable various interested stakeholders to reduce their climate risks, protect their sites and teams, and ensure business continuity. Those seeking solutions (stakeholders with a specific need to implement and secure funding for an adaptation project) can thus connect with solution providers (those wishing to list an adaptation offering). The platform therefore allows users to freely list their needs and solutions. More broadly, “Je-m’adapte” also disseminates guides and practical resources on the subject⁵⁶.

54 <https://meteofrance.com/climadiag-commune>

55 <https://meteofrance.com/le-changement-climatique/drias-les-futurs-du-climat-des-projections-climatiques-pour-adapter-nos>

56 <https://je-madapte.fr/>

Adaptation in 5 Steps: The MEDEF's Introductory Guide

MEDEF, through its working group dedicated to adaptation, offers a [practical and accessible guide](#) for mid-sized companies and SMEs. The goal: to help business leaders turn climate change into an organizational opportunity through a gradual and realistic approach.

1. Understand: Raise awareness and integrate climate challenges—This involves identifying the company's exposure to hazards (heat waves, floods, droughts, etc.) and integrating this into strategic planning—both in the short and long term.

2. Train: Raise awareness to spark collective momentum—Building a shared initiative requires raising team awareness and training internal stakeholders to establish a governance framework dedicated to adaptation.

3. Analyze: diagnose climate vulnerabilities – The guide encourages conducting assessments to evaluate vulnerabilities—including through tools like MétéoFrance *Climadiag*—covering facilities, employees, and supply chains.

4. Act: Define an adaptation strategy and action plans – This involves defining a clear strategy and concrete actions to reduce risks, while coherently combining adaptation, mitigation, resource efficiency, the circular economy, and other approaches.

5. Collaborate: leverage the regional ecosystem – The guide emphasizes the need to work with local governments, suppliers, and supply chain partners.

4. INITIAL DISCUSSIONS AND DEVELOPMENT OF FIRST TOOLS AT THE EUROPEAN LEVEL

THE EUROPEAN COMMISSION: TOWARD A STRATEGIC RESILIENCE POLICY

In line with the European Adaptation Strategy (which is expected to be revised in 2026), **DG CLIMA** is leading a **think tank on mobilizing financing for climate resilience**, bringing together numerous economic and financial stakeholders (the European Investment Bank, the European Banking Federation, Insurance Europe, BusinessEurope, SMEUnited, etc.). The Commission is currently conducting a series of consultations with stakeholders (economic sectors, financial institutions, public and cooperative banks, etc.) to identify the most relevant tools and mechanisms to develop. The think tank has published a report assessing how existing European levers are already contributing to the adaptation objective⁵⁷.

The European Commission is also rolling out several initiatives to support the exploration and financing of climate change adaptation, particularly for local authorities. The **Horizon Europe** and **LIFE** research and innovation programs thus fund pilot projects, territorial experiments, and methodological work aimed at strengthening climate resilience. Among these, the **ClimateFIT** project, launched under the auspices of the World Climate Foundation⁵⁸ in partnership with European institutions, seeks to identify and remove barriers to adaptation financing in Europe; an initial report was published in 2024.

Beyond research, several European financial instruments can provide concrete support for adaptation investments: the **Interreg** programs, which promote cross-border cooperation, and the **ERDF**, which funds EU regions and territories on priorities including water management, risk prevention, and resilient development. Together, these mechanisms help shape a European framework of technical and financial support for adaptation.

EUROPEAN INVESTMENT BANK: SIGNIFICANT FUNDING FOR ADAPTATION.

The **European Investment Bank (EIB)** stands out as one of the most advanced international institutions in financing climate change adaptation. Beyond its role as a lender offering **attractive rates** and **long maturities**, it supports public and private actors through a significant **advisory role** to structure projects and strengthen their technical robustness.

Since 2019, the EIB has implemented a **Climate Risk Assessment (CRA) system**, which systematically examines the climate vulnerability of any new investment project starting from the appraisal phase. This tool, currently being refined, aims to provide a more detailed and fully analysis aligned with the European taxonomy. This approach is part of an adaptation plan published in 2021, which details the institution's commitments and ongoing actions.

57 Find the report [here](#) and the press release [here](#)

58 <https://www.worldclimatefoundation.org/>

On the financial front, the EIB has significantly raised its ambitions: after increasing the share of climate actions in its financing (31% in 2019, or €19.5 billion, compared to 25% over the 2012–2019 period⁵⁹), it **is now doubling its financing dedicated to adaptation**, which will reach **€30 billion between 2026 and 2030**⁶⁰. This increased support will focus in particular on agriculture, water cycle management, infrastructure, cities, businesses, and particularly vulnerable regions, in close coordination with the European Commission and national and regional partners.

5. THE STATE FACES THE CHALLENGE OF STEERING A COHESIVE ADAPTATION STRATEGY

Despite growing consensus among public actors on adaptation, the recent proliferation of programs risks creating a lack of clarity and a fragmentation of aid. Feedback from the European ClimateFIT project highlights that many local authorities still lack knowledge about available funding sources and struggle to plan a coherent adaptation strategy at the local level, particularly due to land fragmentation, siloed governance, and the complexity of cross-sectoral projects.

Furthermore, the uncertainty surrounding planning or investment decisions, the difficulty of abandoning certain assets destined to become “stranded,” and the timing mismatch between on-the-ground projects and access to funding exacerbate these obstacles. Added to this is the very nature of adaptation, often perceived as a public good, which limits the involvement of private actors.

In this context, the government must continue to lead the adaptation strategy by ensuring the consistency of climate scenarios, providing detailed vulnerability maps, incorporating adaptation into technical standards, designing mechanisms to make adaptation projects financially viable and mobilize private capital, and funding infrastructure and services of national interest. It is this structuring and guiding role that will prevent fragmentation, secure adaptation pathways, and make the public mechanisms to be mobilized truly operational⁶¹.

59 Court of Auditors on climate change adaptation, 2024.

60 [EIB 2025 Press Release](#)

61 An IGEDD-CGE study is currently underway to better integrate climate change adaptation issues into business support programs.

B. BUSINESSES: THE DIFFICULT TASK OF ANTICIPATING BUSINESS MODEL ADAPTATION

A group of industrialists and financial stakeholders published an op-ed in Les Echos on November 28, 2025,⁶² asserting that simultaneous adaptation and decarbonization are the only conditions for the resilience of French industry. Faced with intensifying climate hazards, major French companies are confronting a strategic challenge of the highest order: adapting their business models to an environment that is more unstable, more constrained, and fundamentally transformed by climate change. But how can we approach adaptation beyond crisis management or enhanced maintenance? Which vulnerabilities should be identified, which investments targeted, and over what timeframe?

*This analysis is based on a series of in-depth interviews conducted by IFD teams in collaboration with the Observatory of Corporate Social Responsibility (ORSE) with adaptation or climate managers from **several major groups**, including **EDF, ENGIE, Michelin, Thales, SNCF, La Poste, and Danone**. Their accounts highlight the limitations of existing tools and budgetary constraints, but also the initial organizational, management, and cooperation dynamics emerging to make adaptation a true strategic lever.*

Under PNACC 3, large companies are required to submit their adaptation plans. This requires a long-term effort to clarify the challenges facing each sector and the action plans to address them. Greater coordination between the public and private sectors is also needed in managing climate risks and adapting major national activities and networks (transportation, energy, etc.).

62 [Opinion piece](#) in Les Echos, November 28, 2025

1. Coping with a climate that disrupts operating conditions	
Renovation of infrastructure in response to the increasing frequency and intensity of extreme weather events.	→ EDF has developed and equipped about ten dams with an innovative flood discharge system and has developed new monitoring tools for the resilient management of industrial infrastructure.
Strengthening synergies between climate strategy and value chain management.	→ At Danone, adaptation involves supporting regenerative agricultural practices through pilot projects with dairy farmers, with a focus on shared resilience. → For several companies, adaptation involves, in particular, diversifying their suppliers and maintaining an ongoing dialogue with the value chain.
2. Building robust engineering to address uncertainty	
Developing customized tools to assess asset sensitivity.	→ SNCF is implementing a three-step method: identifying exposure, assessing the criticality of rail traffic, and then developing a prioritized action plan. → Michelin has designed an internal sensitivity analysis tool capable of handling the specific characteristics of its thousands of sites worldwide.
Adapting indicators to the technical specifics of infrastructure.	→ ENGIE coordinates its adaptation strategy with differentiated plans based on asset types (solar, thermal, networks) and the specific characteristics of its various sites to optimize priorities.
3. Managing adaptation as a strategic investment	
Deployment of a climate plan integrating mitigation and adaptation.	→ La Poste is working to identify adaptation opportunities within its Climate Plan to prioritize actions across the group's 1,200 buildings. The group involves labor partners to adapt employees' working conditions.
Strategic investment decisions regarding adaptation are made at the highest level.	→ Michelin manages adaptation at the Executive Committee level, based on a macro-level estimate of investments.
4. Financing adaptation, which is structurally inflationary	
Identification and earmarking of adaptation-related CAPEX/OPEX in budgets.	→ EDF clearly distinguishes future adaptation-related expenditures in its financial outlook (a cumulative total of €8.7 billion by 2040, or approximately €600 million per year) from current adaptation expenditures (€158 million in 2025).
Adjusting business models to account for the additional costs associated with resilience.	→ ENGIE factors in rising insurance premiums, reinforcement costs, and revenue losses in its forecasts, particularly for renewables.

Table – Examples of best practices among industrial companies in the region anticipating business model adaptation and necessary investments (Source: IFD)

1. COPING WITH A CLIMATE THAT IS DISRUPTING OPERATING CONDITIONS

For industrial companies, climate change is no longer a marginal or long-term risk: it is already reshaping the physical and operational conditions of their business. **Climate change already represents a major cost to operations today.** Anne Guerrero (SNCF) emphasizes this point: *“It is no longer just a matter of managing extreme events, but of dealing with a changing daily reality and intensifying climate hazards.”* Floods, heat waves, storms, and droughts repeatedly disrupt rail services, employee safety, infrastructure, and strategic assets.

SNCF estimates climate-related damages at 40 million euros for 2023 and forecasts a doubling by 2080. Vegetation management costs, in particular, have risen from 250 to 500 million euros.

At **EDF**, storms in 2024 and 2025 on Réunion Island resulted in significant repair costs, illustrating the growing vulnerability of networks to increasingly extreme weather events. For **ENGIE**, certain risks such as floods or landslides exceed companies' individual capacity to protect themselves.

Finally, **Michelin** and **Danone** highlight the growing fragility of global supply chains. A single missing ingredient can halt a tire production line; a major weather event in an agricultural region can threaten the milk supply. Territorial and global interdependence makes resilience difficult to anticipate.

Initial action levers implemented:

→ Incorporating the acceleration of climate-related hazards into operational risk analysis.

- **SNCF** structures its monitoring around the recurrence, intensity, accumulation, and uncertainty of climate events, in direct relation to rail safety and the continuity of public service.

→ Modification of infrastructure and hydroelectric operations in response to the increased frequency and intensity of floods

- **EDF** has developed and equipped about ten dams with an innovative flood discharge system (*PKWeir*) and has developed new algorithms to make hydroelectric facilities even more resilient to hazards during flood management.

→ Strengthening synergies between climate strategy and value chain management.

- At **Danone**, adaptation involves supporting regenerative agricultural practices through pilot projects with dairy farmers, based on a shared resilience approach. At **Michelin**, adaptation involves diversifying its suppliers and maintaining an ongoing dialogue with them regarding vulnerabilities.

EDF – Integrated adaptation, balancing a culture of safety and regional foresight

Discussion with Alexandre Marty, Group Impact Department

At EDF, adaptation to climate change is part of a long-standing commitment to climate monitoring. Dedicated expertise has existed since the 1990s, and a climate department was established in 2014. Today, it mobilizes some twenty people within the Group's R&D and engineering departments and in collaboration with academic partners. This culture of forecasting and assessment enables EDF to have localized studies and indicators, specific to different types of facilities, and based on a wide range of scenarios and climate models.

In 2025, nearly €130 million in **CAPEX was allocated to adaptation-related investments**, and more than €20 million in **OPEX** was dedicated to managing and anticipating climate impacts, as part of the adaptation plans implemented by the Group's various business units in France (excluding Enedis). In its 2025 annual results presentation, the Group announced plans to allocate **a cumulative total of €8.7 billion** in CAPEX and OPEX **by 2040** to adapt its infrastructure and operations. The Group identifies several critical areas, such as: the reconfiguration of flood discharge systems at dams; technical solutions for water conservation, availability, and quality in connection with nuclear operations; and the reinforcement of power lines exposed to the consequences of extreme wind events.

However, distinguishing between adaptation and maintenance remains a challenge. A significant portion of investments is made for safety reasons or to extend operational lifespans. For these operations, adaptation is one important objective among others. The company is therefore working to better **define and identify adaptation expenditures** in order to secure them and improve their visibility and financing among banks and investors interested in new financial products.

EDF also emphasizes the systemic nature of climate change, particularly the importance of the resilience of public infrastructure (transportation, telecommunications, etc.) in the regions where its facilities are located. Finally, the company is developing several **ecosystem-based pilot projects**: the restoration of wetlands, forests, and peatlands, which are considered “natural buffers” against the intensification of the water cycle. Although the ROI is difficult to quantify, these initiatives are deemed essential.

A **detailed**, costed, and updatable **adaptation plan** was submitted to the government in early 2026.

ENGIE – A phased adaptation strategy driven by site and technology

Discussion with Louise Fournon and Agathe Vandenbroek

At ENGIE, climate change adaptation was initially developed at the site level, following a decentralized approach. However, in response to the increasing frequency and severity of hazards, the company has shifted toward **centralized adaptation planning at the group level**, with management tailored by technology type: solar, thermal, grids, charging stations, etc.

The group has identified several major risks: floods, landslides, heat waves, and water shortages. The impact varies by asset type: **thermal power plants** remain relatively resilient thanks to industrial safety standards, but **renewable** assets (solar panels, wind turbines, batteries, charging stations) are more vulnerable. Solar power, in particular, is exposed to localized events (tornadoes, high winds) that can damage entire fields.

ENGIE has begun a transition toward **climate-related performance indicators**, although these remain focused on inputs: the proportion of sites covered, the proportion of projects subject to climate screening, etc. The group is working to establish a system for monitoring adaptation measures that have actually been implemented. The main obstacle remains the difficulty of establishing outcome-based KPIs, in a context where climate risks do not always materialize in the short term.

Adaptation is also viewed as an **insurance issue**. The climate assessments conducted by ENGIE are used in discussions with insurers, who are increasingly sensitive to the issue. The risk of uninsurability by 2050 is becoming a strategic concern. Since insurance premiums are reviewed annually, a single extreme event can jeopardize a project's profitability.

Finally, ENGIE highlights the current limitations of renewable energy tenders, which **do not include climate resilience clauses**. Incorporating adaptation margins (e.g., oversizing, structural reinforcement) makes projects less competitive in “merchant” models without guaranteed tariffs. The company calls for greater consideration of climate factors in public procurement to prevent the proliferation of vulnerable assets in the coming years.

2. BUILDING ROBUST ENGINEERING TO ADDRESS UNCERTAINTY

The complexity of climate change makes vulnerability analysis difficult. For many companies, the challenge lies in moving beyond static models and developing methodologies suited to a dynamic and uncertain phenomenon. **Accurately modeling climate risks is a major challenge in reducing the cost of uncertainty.** Francis Renault (**Michelin**) sums up this difficulty: “*Exposure analysis is the easiest part. What we need is a sensitivity assessment.*”

Faced with a lack of satisfactory external solutions, **Michelin** has developed an in-house tool to assess the sensitivity of its sites to climate hazards. Each site is analyzed individually, with the support of an IT team, and the company plans to open-source the tool. **SNCF**, for its part, combines a physical analysis (covering five hazards and three climate scenarios) with a functional analysis, measuring impacts on traffic, delays, or revenue.

ENGIE adapts its indicators by infrastructure type. For thermal power plants, industrial safety remains robust; solar panels, however, are much more exposed to localized but destructive events. Finally, **La Poste** assesses the criticality of its 1,200 most at-risk buildings, taking into account exposure, the site's strategic role, and its insurability.

Initial action levers implemented:

→ Development of customized tools to assess asset sensitivity.

- **Michelin** designed an internal sensitivity analysis tool after finding that no service providers were capable of handling the specific needs of its thousands of sites around the world.

→ Cross-referencing physical vulnerabilities and functional criticality to prioritize risks.

- **SNCF** is implementing a three-step method: identifying exposure, assessing criticality for rail traffic, and then developing a prioritized action plan.

→ Implementation of a climate rating system for strategic assets.

- **La Poste** assigns a rating to each of its buildings based on their climate exposure, their importance to the group's operations, and their insurability, as part of its climate plan.

→ Adjusting indicators to the technical specifics of the infrastructure.

- **ENGIE** tailors its analyses based on the technology and specific characteristics of its various sites.

SNCF – An empirical adaptation strategy in the face of a climate-disrupted daily routine

Discussion with Anne Guerrero, Director of the Ecological Transition Division

In 2020, SNCF launched a climate change adaptation strategy in response to increasingly frequent and severe extreme events (floods, high winds, heat waves) that disrupt its transportation operations while ensuring optimal safety conditions for passengers and workers. It is no longer a matter of managing isolated crises, but of coping with a changing daily reality marked by four key factors: recurrence, intensification, accumulation, and uncertainty. The SNCF, along with other companies with a public service mission, also notes that their adaptation strategy depends on the expected level of service, which must be set by the government.

The approach is pragmatic. It begins with identifying climate risks across all assets (network, stations, trains, workshops, etc.) based on physical vulnerability analyses over three time horizons—according to RCP 4.5, 8.5, and TRACC scenarios—and five climate hazards. This is followed by functional analyses to measure the impact on train operations (delays, cancellations, impact on revenue). These analyses lead to action plans, based on a catalog of solutions (currently being developed) and a sustainable financial trajectory.

The main challenge lies in identifying situations that truly require an adaptation response and in selecting the most appropriate solution. The dynamic and systemic nature of climate change makes it difficult to accurately model its effects. Pilot studies are being conducted in specific regions to test this approach.

Solutions are already being tested: white paint on building roofs and rolling stock, solar films on windows, shading on station forecourts... but no common framework yet exists to systematically evaluate their effectiveness. The SNCF also draws on its international projects and exchanges with foreign partners (Spain, Italy, the United Kingdom, Morocco), while training its public and private partners on adaptation challenges.

The issue of financing is central: climate-related damage amounted to €40 million in 2023 and could double by 2080. Vegetation management costs have risen from €250 million to €500 million. It is difficult to clearly identify expenditures specifically related to adaptation. The SNCF has therefore chosen to prioritize actions based on their cost-benefit ratio for resilience, emphasizing “no-regret” actions, asset renewal programs that inherently contribute to climate resilience, and treating every investment project as an opportunity for adaptation. There are also questions regarding the cost of claims and the insurability of infrastructure.

La Poste – adaptation designed from the ground up and worker protection

Conversation with Anne-Sophie Cospin, Director of Sustainable Economics and Finance

Adaptation to climate change is one of the three pillars of La Poste Group's climate policy, formalized in October 2024. While a comprehensive plan is currently being approved by the board for 2025, the company structures its priorities based on realities on the ground—foremost among which is **the protection of its workers and subcontractors** in the face of changing climate conditions.

The Group's human resources teams are conducting a detailed vulnerability analysis, business line by business line, to assess the effects of climate change on health, safety, and working conditions. Based on these assessments, **concrete adaptation solutions** are designed, tested, and fine-tuned to closely align with actual usage. The measures (equipment, facilities, protective gear) are tested in real-world conditions with operational teams to gather their feedback. Once validated, these measures are rolled out across the Group—**requiring significant investment, which** is still largely unrecognized in existing support mechanisms.

This commitment extends to social dialogue: a QVCT agreement signed at La Banque Postale explicitly incorporates climate adaptation issues, particularly regarding quality of life at work.

At the same time, La Poste is rolling out a broader adaptation strategy through a dedicated “climate budget,” prioritizing the Group's 1,200 most vulnerable buildings, and is adapting its responsible procurement policy by raising awareness among its suppliers—the majority of which are SMEs—about these issues, which are still poorly understood.

3. MANAGING ADAPTATION AS A STRATEGIC INVESTMENT

For many companies, adaptation can no longer be a purely operational issue: it must be managed at the highest level of investment strategy. **Adaptation to climate change is becoming a major internal governance issue for companies.**

La Poste has expanded its carbon budget to include adaptation through a “Medium-Term Climate Plan” (PMT Climat), which identifies sets of projects at the most vulnerable sites while integrating co-benefits of mitigation and adaptation.

At **Michelin**, adaptation is managed as a cross-functional industrial project. The group has conducted a macro-level estimate of the necessary CAPEX to guide Executive Committee decisions and site budget requests, while taking immediate action on the most urgent risks. **ENGIE**, for its part, prioritizes a site-by-site approach structured by technology (solar, thermal, grid, etc.).

Regional roots also play a central role. **EDF** emphasizes that the adaptation of its sites depends on the resilience of the host regions: passable roads for heavy equipment, suitable bridges, water infrastructure, and a comfortable local living environment for employees. These factors determine the very feasibility of the projects. **Michelin** also anticipates the need to collaborate with regional stakeholders and those in the value chain to enhance its resilience.

A key point of convergence among the companies interviewed is the **difficulty in translating adaptation into clear and specific funding needs**. In the absence of a common framework and standardized methodologies, stakeholders struggle to distinguish what truly constitutes adaptation from maintenance, regulatory compliance, or mitigation. This methodological uncertainty impacts budgets: how can one justify adaptation expenses within a traditional investment framework, without specific indicators of profitability or risk?

Initial action steps implemented:

→ Deployment of a climate budget incorporating both mitigation and adaptation.

- **La Poste** is working to identify adaptation opportunities within its Climate Plan to prioritize actions across the group's 1,200 buildings based on their exposure and climate co-benefits.

→ Strategic investment decisions regarding adaptation made at the highest level.

- **Michelin** monitors its adaptation investment plan at the Executive Committee level, based on a macro-level investment estimate, while detailing investments for each site within an overall budgetary framework.

→ Structuring adaptation by technology sector.

- **ENGIE** coordinates its adaptation strategy with differentiated plans based on asset types (solar, thermal, networks) to optimize priorities.

→ Alignment of corporate strategies with regional resilience and livability to ensure, in particular, operational continuity.

- **EDF** highlights the interdependencies between public infrastructure (e.g., bridges, roads), public services (e.g., schools), and other critical services (e.g., telecommunications), focusing on identifying vulnerabilities, solutions, and their financing.

Danone – Supporting agricultural resilience in the face of the limitations of economic models

A Conversation with Emmanuel Marchant and Grégoire Bonnello

At Danone, adapting to climate change is now considered a strategic priority in its own right, on par with decarbonization. The group emphasizes **agricultural resilience**, with clear operational priorities: water management, reducing chemical inputs, and maintaining soil fertility. Emmanuel Marchant and Grégoire Bonnello emphasize a shared observation: “The real obstacle isn’t money; it’s the lack of a stable economic model for adaptation.”

Danone relies on some fifty environmental indicators tracked through partnerships with Soil Capital, Earthworm, and PADV (Program for Sustainable and Viable Agriculture) to objectively measure the regenerative performance of agricultural practices: soil quality, biodiversity, water consumption, food self-sufficiency, and more. This data feeds into a company-specific **regeneration index**, used in its procurement and contracting policies.

The “Rennes-Mathilde” project, carried out in Normandy, illustrates the group’s integrated approach: more than 600 farmers are being supported in their transition **to** organic and regenerative farming through a **public-private partnership involving Danone, LIDL, the Region, and the water agencies**. The results show improved resilience, reduced market dependence, and more efficient practices.

To financially support these transitions, Danone has established a **milk premium system, co-financing mechanisms with commercial partners, and crowdfunding via the Miimosa platform**. Assistance is also offered to facilitate access to land for young farmers. However, the model remains partially reliant on non-sustainable funding (donations, corporate sponsorship), which limits its potential for widespread adoption.

Finally, Danone emphasizes the importance of a **systemic approach** to adaptation: it is not a matter of addressing a single factor (water, carbon, biodiversity), but of rethinking the agricultural model as a whole. The group advocates for **common sectoral frameworks** at the European level, such as through the SIA (Sustainable Index for Agriculture) platform, which aims to create a unified path to transformation for the entire sector.

Michelin – Understanding vulnerabilities to determine adaptation financing needs

Discussion with Francis Renault, Climate Change Adaptation Group Expertise Leader

Michelin views climate change adaptation as an issue that impacts businesses both locally and systemically, and must be addressed first and foremost to protect people and then to ensure value creation.

Most adaptation actions are implemented locally, with the need for a resilient region. However, while the cost of non-adaptation or poor adaptation may seem local, it spreads and multiplies throughout the value chain from the local to the international level.

To this end, Michelin is implementing initiatives to influence its value chain, with the aim of helping external stakeholders incorporate adaptation challenges into their strategies.

In addition, Michelin is developing a method and a tool for the quantitative assessment of the vulnerability of its sites, which may be made available as open source, as well as a catalog of adaptation measures. These methods and tools will enable sites to assess their current level of resilience (of both personnel and assets) in the face of current and projected (2030, 2050) climate change-related exposure to various acute and chronic climate hazards. Targeted adaptation measures deemed necessary will be identified based on the results of this assessment. Decided in 2024, the development of the method integrated into the quantitative vulnerability assessment tool, as well as the catalog, addresses the observed lack of market offerings at the time that could identify adaptation measures and the associated potential CAPEX, focusing solely on situations likely to pose a risk to people and business continuity.

As part of the vulnerability assessment of its sites, Michelin will use an indicator of climate change adaptation maturity for the cities and countries in which they are located. Such an indicator will guide the Group in decisions involving CAPEX.

It is necessary to create the conditions for raising awareness at all levels of the challenges associated with climate change and the urgent need for adaptation where people, regions, value creation, and even business models could be compromised to levels deemed unacceptable.

Adaptation to climate risks is not yet an exact science. This observation argues in favor of developing and making available as much data, methods, and tools as possible to inform decision-making in this area, particularly with a view to efficiency.

4. FINANCING ADAPTATION, WHICH IS STRUCTURALLY INFLATIONARY

Companies agree on one point: adaptation entails high costs, often poorly identified, which are added to maintenance or modernization expenses. **Adaptation represents a significant cost in terms of both operating expenses and long-term investments.**

At **EDF**, adaptation expenses are already substantial: nearly €130 million in CAPEX by 2025, and over €20 million in OPEX, including investments in mainland France and in island territories. These amounts are part of the adaptation plans of EDF's Business Units in France (existing nuclear, hydroelectric, and island systems) and do not include the amounts allocated by Enedis to the adaptation of its networks in France.

Danone is developing hybrid financing structures to support agricultural resilience, involving public co-financing, milk subsidies, and crowdfunding, but highlights the difficulty in sustaining these mechanisms: *"The real obstacle is not a lack of money, but the absence of a stable economic model,"* warns Emmanuel Marchant.

ENGIE points out that incorporating adaptation margins into renewable energy projects increases costs and reduces competitiveness, particularly in tenders without guaranteed prices. The risk of uninsurability or rising insurance premiums becomes a determining factor in project profitability.

Finally, several companies highlight the lack of suitable financial offerings or targeted support mechanisms. This disconnect between physical risk and investment needs remains a key barrier to accelerating the transition to action.

Initial levers for action implemented:

- **Prioritizing investments based on their cost-resilience ratio.**
 - **SNCF** incorporates cost-benefit analysis into the evaluation of its adaptation projects to identify the most relevant "no-regret" actions in the short term.
- **Identifying and earmarking adaptation-related CAPEX/OPEX in budgets.**
 - **EDF** clearly distinguishes adaptation-related investments in its investment programs, with precise tracking of costs associated with strengthening its climate resilience.
- **Mobilizing public-private partnerships to bear the costs of the transition.**
 - **Danone** collaborates on projects with regions, distributors, water agencies, and citizen-funded platforms to support the transformation of agricultural practices.
- **Adjusting business models to account for the additional costs associated with resilience.**
 - **ENGIE** factors in rising insurance premiums, reinforcement costs, and revenue losses in its forecasts, particularly for renewables.

Find available public aid on the Corporate Ecological Transition platform

The [Corporate Ecological Transition](#) platform, led by ADEME in partnership with public aid providers, under the guidance of the ministries responsible for Ecological Transition and the Economy and the General Secretariat for Ecological Planning, is a turnkey tool designed to support small and medium-sized enterprises in their ecological transition efforts. This platform lists public aid and support programs that can finance business projects related to the transition. After entering their SIRET number on the platform, businesses can view the aid and support programs for which they are eligible across all partner public aid providers.

The Business Ecological Transition platform offers several programs dedicated to adaptation, such as Bpifrance's [Diag Adaptation](#) or the [ClimaDiag expert](#) assessment offered by the Chambers of Commerce and Industry, as well as associated financing options like the [Green Loan](#).

In conclusion, several systemic challenges still hinder the full integration of adaptation into corporate strategies. Some companies hesitate to publicly disclose their initiatives, for fear of being perceived as abandoning decarbonization. Many remain confined to essentially reactive responses, even though “no-regret” actions—which are low-cost and compatible with service continuity—could serve as a first step toward a more structured adaptation pathway. Without climate engineering capable of translating scenarios (TRACC, RCP 8.5) into precise operational impacts, it remains difficult to plan on a large scale and define the level of service we wish to maintain in a France that is 4°C warmer. Finally, adaptation cannot be approached in isolation: it requires close cooperation between businesses, local governments, public operators, and value chains, as well as a localized approach to dialogue. These are all necessary conditions for moving from reactive adaptation to truly strategic adaptation.

5. SOME BEST PRACTICES TO KEEP IN MIND, BASED ON FEEDBACK FROM COMPANIES

*Faced with growing adaptation needs, companies are beginning to structure their approaches, often empirically but with already solid lessons learned. Interviews conducted with several major corporations highlight common challenges as well as initial organizational and technical responses. **This section provides a summary of these best practices, identified through concrete experiences, to help companies better assess their vulnerabilities, plan their actions, and structure their investment decisions.***

1. Better characterise and structure adaptation expenditure Create a specific accounting framework for adaptation investments, to differentiate them from maintenance, safety or crisis management expenditure. Make every investment an opportunity for adaptation: integrate the assessment of climate benefits into asset renewal programmes.	2. Equip companies to diagnose vulnerabilities and plan action (see Non-Financial Analysis Working Group) Develop harmonised methodologies for analysing physical and functional vulnerability, applicable at the site or value chain level. Create benchmarks for the effectiveness of adaptation solutions, based on industrial feedback. Develop both a micro (site-level) and macro (group-level) vision for a more robust adaptation plan.	3. Build sustainable and manageable financial trajectories Identify CAPEX and OPEX related to adaptation in budget management systems to provide visibility to the Executive Committee. Plan investments over the long term. Take into account the cost of claims and resilience in investment decisions, in the same way as ROI.
4. Adapt insurance tools and relationships with insurers Strengthen collaboration between companies and insurers to integrate adaptation into risk pricing. Anticipate asset insurability issues by 2050 in contracts and location strategies. Pool claims and exposure data to develop appropriate coverage solutions.	5. Integrate adaptation into governance and social dialogue Make adaptation a topic addressed at the highest level (Executive Committee) and integrated into investment decisions. Involve human resources in discussions on adaptation, incorporating working conditions as a vulnerability criterion. Include social partners in the adaptation strategy through company agreements or shared assessments.	6. Leverage value chains and territories Integrate suppliers into the adaptation strategy and engage with them, particularly SMEs. Deploy shared resilience projects with farmers or local partners, based on mixed economic models. Collaborate with local authorities on the necessary developments to ensure the resilience of infrastructure and territories.

Figure – Summary of best practices based on feedback from companies (Source: IFD)

1. BETTER DEFINE AND STRUCTURE ADAPTATION EXPENDITURES

- **Create a specific accounting framework** for adaptation investments to distinguish them from maintenance, safety, or crisis management expenses.
- **Make every investment an opportunity for adaptation:** integrate the assessment of climate benefits into asset renewal programs.

2. EQUIP BUSINESSES TO BETTER IDENTIFY VULNERABILITIES AND PLAN FOR ACTION

- **Develop harmonized methodologies for analyzing** physical and functional vulnerabilities, applicable at the site or value chain level.
- **Create benchmarks for the effectiveness of adaptation solutions**, based on industry feedback.
- **Develop both a micro-level (by site or technology) and macro-level (group-wide) perspective** to enhance the robustness of the adaptation plan. While *Engie* initially developed a site-by-site resilience approach, *Michelin* developed a comprehensive adaptation plan (suppliers, regions): the two approaches reinforce and complement each other.

3. BUILD SUSTAINABLE AND MANAGEABLE FINANCIAL TRAJECTORIES

- **Identify the capital expenditures (CAPEX) and operating expenses (OPEX) associated with adaptation** within budget management systems to provide visibility to the executive committee.
- **Plan investments for the long term.** Some companies emphasize the importance of timing: plan over time horizons consistent with the lifespan of assets.
- **Take into account the cost of claims and resilience in investment decisions**, just as you would ROI.

4. ADAPT INSURANCE TOOLS AND RELATIONSHIPS WITH INSURERS

- **Strengthen collaboration between companies and insurers** to integrate adaptation into risk pricing. Some companies work closely with insurers, who value the inclusion of adaptation plans in their analysis frameworks.
- **Anticipate asset insurability challenges by 2050** in contracts and location strategies. Some companies report that insurability is already a critical criterion for buildings.
- **Share claims and exposure data** to develop tailored coverage solutions.

5. INTEGRATE ADAPTATION INTO GOVERNANCE AND SOCIAL DIALOGUE

- **Make adaptation a topic addressed at the highest level (executive committee)** and integrated into investment decisions.
- **Involve human resources in adaptation planning** by incorporating working conditions as a vulnerability criterion.
- **Include social partners in the adaptation strategy** through company-level agreements or shared assessments.

6. LEVERAGE VALUE CHAINS AND LOCAL REGIONS

- **Integrate suppliers into the adaptation strategy and engage with them, particularly SMEs.** *La Poste* highlights the difficulty of demanding firm commitments on adaptation when 70% of suppliers are small businesses. Some companies are beginning to engage with their suppliers to work on their own resilience.
- **Deploy shared resilience projects with local partners, based on mixed economic models.** In agriculture, *Danone* is piloting projects to transition to regenerative agriculture with technical and financial support in collaboration with the sector and public agencies.
- **Collaborate with local authorities on the necessary infrastructure and regional development projects to enhance resilience.** Some companies are beginning to work closely with local authorities to ensure the resilience of the regions where the group's teams are based.

C. FINANCIAL INSTITUTIONS: INITIAL REFLECTIONS AND INITIATIVES FOR ADAPTATION

*This analysis is based on a series of in-depth interviews conducted by IFD teams with adaptation or climate officers from **several financial institutions in the Paris financial centre (banks, investment firms, and insurance companies)**, including Agence Française de Gestion, Aéma Group, Amundi, Ardian Infrastructure, AXA, AXA Climate, La Banque Postale, Bernstein, BNP Paribas, BPCE (Banques Populaires, Caisses d'Épargne), BPCE Assurances, the Caisse Centrale de Réassurance (public reinsurer), CNP Assurances, Covéa Finance and its brands, Crédit Agricole, Crédit Mutuel Arkéa, the French Banking Federation, France Assureurs, Jefferies, Rothschild & CO Asset Management, Natixis IM, and Société Générale.*

THE PARIS FINANCIAL CENTRE IS ACCELERATING ITS AWARENESS OF THE CHALLENGES OF ADAPTATION

*Their testimonies highlight the gradual rise in the importance of adaptation issues within these institutions, as well as the difficulties in grasping the financing challenges specifically related to adaptation for the private finance sector. **As a preamble, several observations common to the various financial sectors (banks, investors, and insurers) can be highlighted:***

1. The interviews conducted with stakeholders in the Paris financial sector indicate a growing recognition of adaptation challenges.

This trend is largely driven by the PNACC 3, particularly the TRACC, which projects a warming trajectory of +4°C by 2100 in France. It enables us to anticipate the adaptation of our economic and financial model for the coming decades. Indeed, **the TRACC serves as a reference framework upon which economic and financial actors must be able to rely.** Discussions reflect a growing interest among stakeholders in this tool.

2. The PNACC 3 emphasizes that mitigation and adaptation efforts are two sides of the same coin when it comes to climate action and must be addressed through an integrated approach: financial stakeholders are well aware of this.

This new plan is based on the complementary nature of mitigation efforts—which address the causes of climate change—and adaptation efforts—which focus on minimizing its effects. The vast majority of financial actors are well aware of this complementarity between the climate objectives of mitigation and adaptation. **The Paris financial centre must continue to strengthen its position on adaptation while pursuing mitigation efforts.**

3. To date, financial institutions have primarily addressed the issue of adaptation through the identification of climate risks.

Due to the accelerating impacts of climate change on the real economy and, more broadly, the financial risks this poses, **the stakeholders interviewed currently address the issue of adaptation primarily by identifying their climate risks. Some are engaging in dialogue with the clients most at risk. Flood and drought risks, as well as heavy reliance on ecosystem services, are of particular concern in the *real estate*, *utilities*, and *agri-food* sectors.** More broadly, the understanding and identification of these risks varies across different categories of financial institutions.

4. The development of private financing for adaptation is still in its infancy.

In fact, **banking, insurance, and investment products specifically designed for adaptation remain rare. Financial transactions explicitly earmarked for adaptation are still limited or experimental (we will return to this in detail later in this section). There is no real “market” for adaptation.**

Several operational obstacles, common across various financial sectors, may explain this situation—a *lack of granular data necessary for analyzing physical risks, internal difficulties in clearly distinguishing between adaptation and mitigation, and low demand from businesses, local governments, or individuals for financing specifically earmarked for adaptation*—all factors that, at this stage, the emergence of a clear price signal in the market⁶³.

The often uncertain economic profitability of these projects explains the private sector’s caution in fully committing to adaptation. The issue tends to clash with the traditional decision-making framework: short – and medium-term profitability considerations, a focus on direct financial risks, and difficulty in quantifying the often diffuse, collective, and sometimes non-monetizable benefits of adaptation-related financing.

63 To identify these barriers, the IFD drew on initial interviews conducted with a sample of 40 financial actors (banks, insurers, and asset managers) as part of the ClimateFIT project in the project’s four test countries (France, Belgium, Italy, and Romania). These discussions helped identify five main barriers to private-sector financing for adaptation: **a lack of overall knowledge on the subject of adaptation (i), a lack of stable policies on the subject (ii), the limited number of investable “adaptation” projects currently available on the markets, a lack of standardized ESG data on adaptation (iv), and a lack of return on investment for “adaptation” projects (v).** To view the findings of this study: [Climatefit](#) | [World Climate Foundation](#)

5. Nevertheless, the development of “adaptation” offerings is beginning to be integrated within the financial community.

Some best practices are emerging with the development of *the first adaptation bonds, subsidized loans, thematic funds, and innovative insurance models* designed to financially integrate adaptation efforts. These are often “green” or “sustainable” financial products that primarily address mitigation issues but may include an “adaptation” component. Some of the first products specifically focused on adaptation are also being tested by certain institutions. The **agriculture, natural resources, industry, and construction** sectors are of particular interest to various financial actors. Conversely, **certain areas, such as prevention and protection measures against climate-related hazards, still receive little investment despite their potential and the overall effectiveness of these projects.**

6. Despite these promising initial initiatives, there is an urgent need to establish a structured dialogue between public authorities, local governments, businesses, and financial actors to develop a coordinated strategy ensuring broad access to insurance services and various financing tools across the entire country.

The intensification of climate-related hazards will increase the financial needs of businesses, local governments, and households, thereby reinforcing the need for strategic foresight among these stakeholders. **In coordination with government agencies, it is imperative to maintain—and even strengthen—the financial sector’s commitment to the transition toward a more resilient economy. A risk remains that, in the absence of a d foresight, as physical risks become increasingly apparent, adequate access to insurance services and various financing tools across the entire country could be jeopardized.**

7. It is with a view to collective risk management that close dialogue must be strengthened between public authorities, local governments, financial actors, and businesses.

All of the hearings underscore the importance of establishing a common language among the government, economic actors, local governments, civil society, and the financial sector, in order to converge toward a shared understanding of climate risks, the actions to be implemented, and the associated financing needs.

1. BANKS: A KEY ROLE IN FINANCING ADAPTATION FOR REGIONS AND BUSINESSES

WHAT ROLE CAN BANKS PLAY IN ADAPTATION?

Banks' local presence gives them a strategic position to support adaptation financing. Banks can play a role by facilitating access to loans for stakeholders who need to implement adaptation measures. They can finance “adaptation-focused” activities or those that work toward regional adaptation alongside mitigation efforts. Banks can also contribute by engaging with their clients about their climate risks and the adaptation measures they are considering. Finally, banks can also leverage existing tools (Diag'Adaptation, ACT Pas à pas, etc.) to raise awareness among their portfolio companies about adaptation and support them in their efforts.

Banking groups also occupy a systemic position, as they bring together multiple financial activities under a single structure—ranging from banking to investment banking, asset management, and insurance—which expands the possibilities for financing adaptation and supporting stakeholders. Banks also play an advisory role in local communities and help foster dialogue on these local issues.

WHAT ARE THE MAIN OBSERVATIONS?

At this stage, the banking sector primarily addresses the issue of adaptation through the analysis and management of its climate risks, driven in particular by strong prudential and regulatory expectations from the European Central Bank⁶⁴ and the European Banking Authority⁶⁵.

Regarding financing: few banking groups are deploying financial instruments specifically targeted at adaptation. This may be explained by the fact that, at this stage, few companies are approaching banks with so-called “adaptation” projects, likely due to a general lack of maturity and a shared framework for dialogue on these issues. The various interviews conducted with banking stakeholders in the Paris financial market show that, for the time being, banks are receiving few requests from their clients regarding adaptation financing, unlike requests for financing the ecological transition.

64 <chrome-extension://efaidnbmninnibpcapjpcglclefindmkaj/https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.202011finalguideonclimate-relatedandenvironmentalrisks~58213f6564.fr.pdf>

65 https://www.ecb.europa.eu/ecb/climate/managing_mitigating_climatel_risk/html/index.fr.html

WHAT BEST PRACTICES ARE EMERGING IN THE PARIS FINANCIAL MARKET?

The interviews conducted as part of our study have identified several best practices emerging among French banks that deserve to be shared and adopted by other players in the financial sector. **The examples identified point to initial approaches and emerging strategies within these institutions. While not defining a specifically distinct “adaptation” policy, some players are nevertheless beginning to mention adaptation within their broader ESG policies.** Among the action levers deployed by the banks interviewed on the topic of adaptation, the following can be noted:

1. IDENTIFYING AND MANAGING CLIMATE RISKS

Banks are beginning to **identify their climate risks** using internal management tools. *Risks related to flooding, drought, and heavy reliance on ecosystem services* are of particular concern to banking institutions, especially in the *real estate, utilities (energy), and agri-food* sectors. More and more banks **are engaging in dialogue with these clients and supporting them in implementing initial adaptation measures**⁶⁶. The clients most at risk are often the most advanced in their efforts: this risk management thus becomes an opportunity for collaboration.

⁶⁶ For more information on the approaches taken by banking institutions in the Paris financial centre regarding climate risk management, see the dedicated work of the IFD.

Société Générale – Building an adaptation strategy

Société Générale is developing a tool to assess its clients' adaptation strategies in order to better support them in their resilience efforts. The **CARE (Client Adaptation and Resilience Evaluation)** tool, created in collaboration with the consulting firm Blunomy, not only **assesses the client's vulnerability and maturity but also identifies operational and strategic solutions related to adaptation**. This tool thus enables the bank to tailor its support proposals to the client's priority areas. The methodology is based on an analysis of the risks incurred as well as adaptation capabilities (simplified by the equation: **Resilience = Hazards x Exposure x Vulnerability – Adaptation Strategy**). **This analysis helps pinpoint the parts of the value chain most exposed to financial losses, while also identifying opportunities for adaptation investments within the client's engagement.**

The growing importance of adaptation is already translating into tangible financial commitments, illustrating the accelerating need to support clients across all regions of the world.

For example, Société Générale recently financed the following projects, providing concrete solutions to the challenge of adaptation:

- Société Générale acted as *joint bookrunner* for a dual-tranche bond issuance for Emirates NBD, consisting of a green tranche and a blue tranche with a total amount of \$1 billion. This issuance, backed by NBD's sustainable financing framework revised in September 2025, will enable the bank to deploy financing for, among other things, the adaptation of critical infrastructure or the development of tools for detecting extreme weather events.
- The bank participated in the financing of the Haweswater Aqueduct renovation program, aimed at improving the resilience of the United Kingdom's largest drinking water reservoir, acting as *mandated lead arranger* and *hedging provider*, for a total cost of 3 billion pounds.
- Société Générale, acting as *sustainability coordinator* and *mandated lead arranger*, has structured a €385 million sustainable loan for BOAD to finance sustainable projects in the bank's eight member countries. Thirty percent of the amount will be allocated to financing adaptation projects.

BNP Paribas – Building an adaptation strategy

For the BNP Paribas Group, a financial services firm, the issue of physical risks linked to climate change is indirect: it is primarily through the financing it provides and the investments it makes that it is exposed to risks and supports its clients' adaptation efforts.

Adaptation begins with risk assessment. Several tools have been deployed internally to measure portfolios' exposure to physical risks. At the consolidated level, sector-specific exposure heatmaps and portfolio stress tests incorporating various climate scenarios are conducted. At the client level, assessment questionnaires are deployed, and, more specifically, an internal tool has been developed to assess the level of exposure, site by site, to eight main risks, under three climate scenarios and across multiple time horizons.

This detailed understanding of client risks, combined with external data sources, enables the Group to offer tailored financing solutions to clients, which may take the form of Green Bonds or Sustainability-Linked Loans with key performance indicators tied to improving clients' resilience.

The Group also actively supports research and innovation in this area through the BNP Paribas Foundation's scientific sponsorship program and investments in innovative companies, such as Kayrros (risk assessment using geospatial data) and Arbol (parametric insurance).

2. STRUCTURING FINANCIAL PRODUCTS TO MEET CLIENT NEEDS

At this stage, only a few banking offerings specifically address adaptation financing within the Paris financial centre. This can be explained by various factors. First, there are few or no companies currently approaching banks with so-called "adaptation" projects, particularly because the cost does not always justify it and the projects' business models are not yet clear to companies. Nor is there, at this stage, a standardized framework for discussion between banks and companies or with households to address adaptation needs. More broadly, emerging adaptation projects often have less established profitability models, which does not always encourage banks to roll out financing products specifically dedicated to adaptation.

The initial approach taken by banking institutions in the Paris financial market is primarily to address adaptation through their traditional transition tools. Indeed, green bonds, subsidized loans or loans earmarked for “green” investments, as well as green and sustainable loans with an “adaptation” co-benefit, are beginning to be clearly recognized by these institutions. More broadly, several banking players are initiating their “adaptation” efforts by mapping mitigation projects in their portfolios that can address climate change adaptation objectives. Water resource management projects (such as investments related to reducing water consumption, sanitation, pollution control, or the efficiency of distribution and operational systems), the decarbonization of the building sector, or investments related to Nature-Based Solutions, or the transition of agricultural practices currently represent the main transition themes with “adaptation” co-benefits that French banks are investing in the most. In parallel with this mapping, some of the stakeholders we met are beginning to develop an internal taxonomy that will enable them to direct future investments toward projects addressing adaptation. Among the projects currently being developed, the following are particularly noteworthy:

→ ***The issuance of sustainable bonds with an “adaptation” co-benefit***

- The BPCE Group and BNP Paribas supported the structuring of the blue bond issuance for the company [SAUR](#). This “blue bond” specifically focuses on financing water production and distribution, wastewater collection and treatment, and water desalination using technologies designed to minimize environmental impact, thereby addressing the company’s financing needs for mitigation and adaptation⁶⁷.
- BNPP, the investment arm of BNP Paribas, supported the structuring of a green bond issuance for Danske Bank in 2024. This issuance focused in particular on financing monitoring technologies (climate observation systems) and infrastructure designed for flood protection (stormwater management, retention dikes, reservoirs, etc.).
- The issuance of the “Paris Climate Bond”⁶⁸ by the City of Paris, supported by Crédit Agricole CIB, Société Générale, and HSBC, enabled the city to raise €85 million in funding for adaptation projects under its 2014–2020 Climate and Energy Action Plan. In particular, the bond enabled the creation of 30 hectares of green spaces and the planting of 20,000 trees. The green bond framework is that of the International Capital Market Association (ICMA), via the Green Bond Principles (GBP), which explicitly includes **climate change adaptation** as one of the eligible categories for the use of funds.

→ ***The implementation of subsidized loans to finance ecological transition and/or adaptation initiatives***

67 Refer to the IFD [Blue Finance](#) report for more information on this example.

68 A more comprehensive overview of the Paris Climate Bonds is available here: <https://climatefit-heu.eu/best-practices/09-paris-climate-bond/>. Other case studies examined in the program are available on the website: <https://climatefit-heu.eu/knowledge-center/>

Crédit Agricole – Examples of financing deployed to address adaptation challenges

Climate change adaptation is one of the central pillars of the “Transitions” component of Crédit Agricole’s medium-term strategic plan, published in November 2025. It is also one of the key initiatives of the Group’s Climate Strategy, with the aim of strengthening regional resilience, supporting local transitions, and fostering the development of innovative solutions to address new climate risks. Several projects already financed address climate change adaptation challenges, including:

- Crédit Agricole CIB acted as *Joint Bookrunner* for **the issuance of the Resilience Bond (Resilience Bond) issued by the Tokyo Metropolitan Government (TMG)**. This transaction is certified by the *Climate Bonds Initiative* in accordance with the Climate Bond Resilience Taxonomy.
- Crédit Agricole Nord de France has established **a special support fund of €500,000 for customers affected by the floods** of the winter of 2023/2024. In 2025, the regional bank also deployed a predictive tool for measuring physical climate risks at the level of real estate assets and agricultural parcels. The climate risk scores generated by this tool are now integrated into its credit policy and are gradually being incorporated into customer relationships to raise awareness among local authorities, businesses, farmers, and individuals about the challenges of adapting to climate change, to support them—along with its ecosystem of partners—in developing an action plan, and to finance the investments required for sustainable adaptation. Climate change adaptation is now an essential business line that complements the expertise developed by the regional bank.
- Crédit Agricole Touraine Poitou has established **specific financing programs to support various adaptation projects in the region**—in addition to public aid schemes. Projects have included renaturalizing public spaces (schoolyards, town centres), reducing soil imperviousness, diversifying vegetation with local species, strengthening the green infrastructure, and creating shaded areas. All of these measures help promote natural water infiltration, support biodiversity, and improve thermal comfort in the region.
- Crédit Agricole Sud Méditerranée **allocated funding to a project for the reuse of treated wastewater** (2 million m³ of water previously discharged into the sea) via an advanced treatment unit using nanofiltration and ultraviolet light. This project has notably enabled the water quality to be upgraded from Category B to A/A+ and, at the same time, to supply this water to local farmers at low cost to sustain agricultural activity in a region facing water stress.

In the area of adaptation specifically, Crédit Agricole is also testing adaptation approaches in various French pilot regions, particularly in economic sectors highly exposed to climate risks:

→ Crédit Agricole des Savoie is leading a **pilot project in the mountain tourism sector, which has faced a 30% reduction in average snowfall since 1970.** According to climate scenarios projecting a +2.7°C temperature rise by 2050, the test region identified for this project would see an average reduction of two months in the number of days with snow on the ground at low altitudes and less than one month in high-altitude mountain areas. This project aims to **co-develop resilience pathways with local stakeholders to support the sector's economic diversification and to offer tailored solutions to the various beneficiary clients** (targeted financing and investments, insurance tailored to specific challenges, consulting, etc.).

→ LCL, a French retail bank and subsidiary of the Crédit Agricole SA Group, is also piloting **support for its business clients through specific services that help them anticipate the impacts of climate change on their operations and implement an adaptation strategy** based in particular on the Diag Adaptation assessment tool from the Public Investment Bank. To help businesses make the right choices at the right time and encourage them to take action, LCL created the “Lab Impact” in 2025, a collective initiative bringing together SMEs, mid-sized companies, and large enterprises within the same industry sector that share common benchmarks (players in recycling and waste management for the 2025–2026 period; if needed, we can provide a few company names) to identify shared vulnerabilities and challenges adaptation. By engaging its ecosystem of entrepreneurs, LCL then identifies concrete adaptation solutions to address the prioritized challenges and facilitate the transition to action.

→ **BNP Paribas’ Sustainability-Linked Loans with agri-food companies McCain and Bonduelle to support the transition of agricultural practices:**

- **McCain**, a potato specialist, has partnered with BNP Paribas to promote crop rotation among its producers in Poland. McCain is committed to sourcing 100% of its potatoes from regenerative agriculture—a more resilient farming method—by 2030. To achieve this, farmers must follow specific guidelines, and BNP Paribas offers them tailored financing solutions as well as dedicated support⁶⁹.

69 <https://group.bnpparibas/actualite/bnp-paribas-developpe-des-solutions-pour-accompagner-la-transition-du-secteur-agroalimentaire>

- In 2023, the partnership between **Bonduelle** and BNP Paribas reached a new milestone with the amendment of its €400 million syndicated revolving credit facility (RCF). As Mandated Lead Arranger, BNP Paribas helped secure a vital source of financing tailored to the seasonal nature of Bonduelle's needs in this area, including through a two-year extension of the loan's maturity. And as ESG coordinator, BNP Paribas helped strengthen the group's sustainability credentials by incorporating two additional ESG indicators into this loan: reducing the carbon footprint and contributing to regenerative agriculture with its agricultural partners⁷⁰⁷¹. **(For more examples of emerging financial instruments in the Paris market related to [agricultural transition](#), refer to the dedicated IFD report).**

→ Public-private financing partnerships

- **Crédit Mutuel Arkéa and the European Investment Bank partnered in 2025 to provide a €550 million fund to finance energy efficiency, water, and renewable energy, addressing the challenges of climate change mitigation and adaptation.** This new financing will be granted to project developers by the cooperative banking group's subsidiary, Arkéa Banque Entreprises et Institutionnels (ABEI)⁷².

→ Joining dedicated coalitions or working groups to build capacity

Beyond the initial financial levers deployed by certain banking players, the Paris financial community is mobilizing to identify collective solutions. The French Banking Federation has established a specific working group to address the challenges of financing adaptation. European banks are actively participating in ongoing consultations at the European Commission regarding *climate-resilient finance*.

In addition, several international initiatives are also beginning to address the topic of adaptation. For example, the **Principles for Responsible Banking promoted by UNEP FI, which have been adopted by several French banking institutions, can help institutions structure their initial approaches to these issues.** The guide "*Target Setting for Adaptation*" offers several avenues for banking institutions to structure their initial approaches to this topic⁷³.

70 <https://group.bnpparibas/actualite/bonduelle-mener-la-transition-vers-l'alimentation-vegetale>

71 For more examples of emerging financial tools in the Paris financial market for financing the [agricultural transition](#), please refer to the dedicated IFD report.

72 <https://www.eib.org/fr/press/all/2025-216-la-bei-et-le-credit-mutuel-arkea-signent-trois-enveloppes-de-financements-dans-la-transition-verte-et-le-secteur-de-l-eau-pour-un-total-de-550-meur>

73 See, in particular, the 2023 report [*Climate Adaptation Target Setting*](#) and the [2025 report](#) [*Practical Guidance on Implementing Adaptation and Resilience for Banks*](#).

2. ASSET MANAGERS: THE CHALLENGE OF SUPPORTING COMPANIES IN THEIR TRANSFORMATION

WHAT ROLE CAN ASSET MANAGERS PLAY IN ADAPTATION?

Asset managers have a significant impact on the real economy through their portfolio allocations and investment decisions. They can play a key role in directing capital toward financing adaptation solutions in the real economy. On the other hand, asset managers can also encourage the companies in which they invest to reduce their exposure to climate risks by supporting them in implementing adaptation measures, particularly through the dissemination of diagnostic tools and action plans.

Although asset management firms are not subject to specific prudential or regulatory obligations regarding climate risks (beyond reporting requirements), their financial materiality—which has become particularly evident in recent years—is prompting portfolio managers to better identify and assess these risks. This goes beyond a compliance-focused approach; it is an imperative of sound risk management, aligned with clients' interests and managers' fiduciary duties. Nevertheless, the challenge remains, as it does for the rest of the financial industry: having the right data, methodologies, and scenarios is essential to assess this risk effectively.

WHAT ARE THE KEY OBSERVATIONS?

At this stage, **asset managers are addressing the issue of adaptation through the identification and management of natural risks.** Some are identifying the sectors and entities most at risk within their investment portfolios and are beginning to engage with them on the topic of adaptation. **These processes are, however, still in their preliminary stages.**

Few dedicated financing offerings (e.g., thematic funds) related to adaptation have been developed by asset managers in the Paris market. Nevertheless, a few thematic funds are gradually emerging in the market, particularly in the private equity sector.

The adaptation theme nevertheless presents itself as an investment opportunity. Although thematic funds exclusively dedicated to this issue remain rare, this type of investment is integrated into broader funds related to agriculture, natural capital, or sustainable infrastructure. The main challenge lies in developing a shared taxonomy for classifying assets under a common term.

However, adaptation issues are benefiting from growing interest among brokers and financial research firms: some investors we spoke with were advised by *sell-side* analysts who provide them with information on market trends in “adaptation” as well as new opportunities to seize in this sector—particularly new adaptation technologies on both the asset and non-asset sides.

More broadly, asset managers face several challenges: the lack of profitability and the difficulty in defining business models for adaptation projects, the lack of data, and the lack of a consensus definition of what constitutes an adaptation investment—all of which also tend to explain why asset managers do not perceive themselves as leading players in adaptation.

WHAT BEST PRACTICES ARE BEGINNING TO EMERGE IN THE PARIS FINANCIAL MARKET?

A few initial initiatives and best practices have been identified in the Paris financial market and are worth highlighting:

1. THE DEVELOPMENT OF A SPECIFIC ENGAGEMENT PROCESS FOCUSED ON ADAPTATION

Some asset managers interviewed for this study explain that they are beginning to create an internal engagement process with their clients most exposed to climate risks in certain sectors, such as agriculture or construction. These processes typically begin with a series of initial questions and informal discussions with clients in their portfolios. These initial discussions vary significantly from one organization to another and are not standardized. The goal is to eventually consolidate them into a specific engagement framework focused on adaptation issues.

2. INVESTMENTS IN ACTIVITIES ADDRESSING ADAPTATION CHALLENGES

As investors, asset managers can play a key role in redirecting private financial flows toward sustainable activities and projects adapted to the future climate. A few market-based funds and initiatives have emerged in recent years and primarily target the non-financial sector. These investments concern, for example, the sectors of *agricultural transition*, nature preservation, and/or conservation. To a lesser extent, some investments are directed toward climate risk prevention measures or new adaptation technologies (e.g., *climate data collection*, *climate risk management systems*, *alternatives to air conditioning*, etc.). Among these examples of financing, we can cite:

→ **Funds targeting “green” or sustainable products compatible with adaptation objectives**

- **TERRA Fund – agricultural transition and soil resilience.** SWEN Capital Partners, a private investor, launched the “SWEN Terra” fund in 2025 with €40 million in capital. With a fundraising target of €200 million, the fund is supported by MACIF and Abeille Assurances, brands of the Aéma Group, as well as Suravenir. SWEN Terra aims to facilitate access to capital for agricultural stakeholders committed to the transition toward sustainable practices. The ambition : to promote soil restoration in order to combat climate change and biodiversity loss⁷⁴.

74 <https://www.swen-cp.fr/blog/2025/06/30/swen-capital-partners-lance-sa-nouvelle-strategie-a-impact-swen-terra/>

→ *Funds specifically dedicated to adaptation challenges*

- **The Climate Change Resilience Fund, spearheaded by CCR and managed by the investment firm Starquest, is an investment fund dedicated to innovation in natural disaster prevention.** Launched in 2025, the Climate Change Resilience Fund (CCR-F) has a target size of €100 million and invests in natural disaster prevention systems across France. The fund will take approximately fifteen equity stakes in innovative companies at various stages of maturity, providing concrete and measurable solutions for assessing and preventing natural disaster risks, and for limiting their impact on populations and physical assets. These innovations will apply to both rapidly emerging technologies such as AI—whose applications in prevention are still developing—and more traditional systems (geotechnical drought prevention techniques, individual flood protection systems). CCR has entrusted the management of the CCR-F fund to the asset management firm Starquest⁷⁵.

⁷⁵ To view the fund's launch press release: <https://www.ccr.fr/ccr-et-starquest-lancent-un-fonds-dinvestissement-dedie-a-linnovation-pour-la-prevention-des-catastrophes-naturelles/>

Demeter IM – Spotlight on the “Innovation for Adaptation & Mitigation Fund”: an example of an investment fund financing climate change adaptation solutions

The Innovation for Adaptation & Mitigation (IAM) Fund, managed by Demeter Investment Managers, is one of the very first European funds explicitly focused on financing climate change adaptation solutions. Classified as an SFDR Article 9 fund, it aims to support innovative companies capable of strengthening the resilience of key sectors—particularly energy and agriculture—while simultaneously contributing to the reduction of greenhouse gas emissions.

With a target size of €120 million (expandable to €150 million), the fund adopts an early-stage innovation capital strategy, investing primarily in seed and Series A rounds, with initial investments ranging from €1 million to €5 million and potentially reaching €10 million over the fund's lifetime. It aims to build a portfolio of 20 to 25 companies, primarily in France ($\frac{2}{3}$) and Europe ($\frac{1}{3}$), with a gross performance target of 2.5x and a 20% IRR. A first closing of €50 million was finalized in July 2025, bringing together institutional investors, industrial investors, and family offices, including Bpifrance.

The fund's initial investments reflect this focus:

- Quideos, an insurance solution providing coverage against agricultural price volatility;
- CheckDPE, a technology for assessing the reliability of energy performance diagnostics.

Through its positioning, the IAM directly contributes to the development of a still-emerging market: that of adaptation solutions financed by innovation capital, by addressing an identified funding gap for technologies essential to the climate resilience of regions and value chains. This fund thus serves as a concrete example of an innovative financial tool that accelerates adaptation and fosters the emergence of a sector of companies providing adaptation solutions.

→ ***Finally, investors can also allocate investment shares to emerging adaptation technologies or small businesses offering solutions to resilience challenges.***

- BNP Paribas' investment arm, **BNP Asset Management**, invests in small-cap innovative companies in the adaptation sector. For example, Kayrros⁷⁶ specializes in physical risk modeling, and Arbol offers parametric insurance solutions⁷⁷.

76 <https://www.kayrros.com/>

77 <https://www.arbol.io/>

- Société Générale has acquired a majority stake in the investment firm *Reed – Societe Generale Group*, which focuses, among other things, on transition and adaptation technologies. This entity has notably invested in the innovative company I.A.G.E., which offers a molecular biology-based solution for epidemiological monitoring of wastewater. Its applications range from monitoring agricultural inputs to detecting pathogens in coastal areas.

FOCUS 1: INSTITUTIONAL INVESTORS AND ADAPTATION

Institutional investors, including insurers, can also play a strategic role in integrating adaptation. As **asset owners**, these stakeholders wield significant influence: they can, either directly or through their asset management mandates, engage in enhanced dialogue with companies most exposed to climate risks to encourage the implementation of adaptation measures. Furthermore, their financial expertise and long-term investment horizon enable them to **design financial products that support climate risk management**. Among these innovative financial products is the structuring of a “catastrophe bond” by AXA Group in June 2023, specifically to provide both reinsurance and retrocession protection for storm-related losses in Europe⁷⁸.

Initial engagement efforts with the most exposed sectors and companies, as well as the structuring of innovative financial products, are worth highlighting:

CNP Assurances – Investment Division

Today, CNP Assurances integrates the challenge of adapting to climate change into the management of its portfolios primarily in two ways:

- By conducting an analysis of physical risks related to climate change on its directly held investment portfolios.
- Through its shareholder dialogue: in 2025, CNP Assurances engaged with five companies regarding how they analyzed their physical risks and the measures they were implementing to address them.

Work is currently underway to strengthen the integration of climate adaptation into its responsible investment strategy.

78 For more information: <https://www.artemis.bm/deal-directory/eiffel-re-ltd-series-2023-1/>

Caisse des Dépôts – Asset Management Division

Since 2024, Caisse des Dépôts' asset management division has fully integrated climate change adaptation and physical risk considerations into its analyses for directly managed assets. This approach also applies to real estate and forestry assets.

For the stocks and bonds of listed companies, the approach aims to identify the sector-specific and geographic characteristics of portfolio companies through a qualitative analysis of how these issues are integrated. CDC's in-house ESG analyst teams supplement this with findings from interviews conducted directly with companies as part of its shareholder engagement; the topics covered include exposure to climate-related risks, prevention measures, as well as resilience drivers related to adaptation. Nearly 90% of assets under management by GDA have been subject to a rating or analysis of physical risks related to climate change, and among listed companies, all those committed to climate action were questioned about physical risks and their adaptation plans.

The Paris financial market's "Climate Objective Fund" and "Biodiversity Objective Fund" initiative brings together several institutional investors from the Paris financial market, coordinated by Caisse des Dépôts. The Climate Objective Fund, with €689 million in assets and focused on companies aligned with a 1.5°C pathway, prioritizes the exclusion of the highest-emitting sectors, shareholder engagement, and the integration of ESG criteria including climate resilience. The Biodiversity Objective Fund, launched in 2024, finances listed and unlisted companies working to preserve or restore ecosystems. While the primary objective of these initiatives remains the low-carbon transition and the protection of nature, certain actions can generate co-benefits for adaptation, for example by helping to strengthen the resilience of companies or ecosystems in the face of climate risks.

However, the hearings conducted suggest that the synergies between the insurance and investment arms of these structures are not sufficiently leveraged, and that it would be beneficial to capitalize as much as possible on the detailed knowledge of physical risks acquired by insurers in order to fully address the challenges of financing adaptation for insurance industry players.

FOCUS 2: INVESTMENTS IN THE INFRASTRUCTURE SECTOR

The infrastructure sector is particularly vulnerable to climate-related risks. Scientific Climate Ratings, a new rating agency affiliated with EDHEC, reviewed more than 6,000 infrastructure projects worldwide (data centers, roads, airports, power plants, etc.), revealing that nearly \$600 billion in assets are at risk of losing a significant portion of their value. Financiers in the infrastructure sector therefore play a key role in adaptation⁷⁹.

The first operational tools are taking shape and enable these institutions to measure the exposure to climate risks of certain funded or fundable infrastructure projects. For example, **the CIARA methodology (formerly the “2-infra challenge”)**, developed by a consortium of Paris-based stakeholders (including Carbone 4, Meridiam, AFD, LBP AM, EIT Climate KIC, Generali Global Infrastructure), enables the assessment of infrastructure funds’ alignment with a +2°C warming trajectory by 2100. More broadly, this methodology assesses the carbon performance of infrastructure portfolios and provides an analysis of exposure to climate and transition risks across 60 different types of infrastructure assets, such as transition energy infrastructure, transportation, water, and waste management infrastructure. It can be applied to 42 different countries.

More broadly, investors in the infrastructure sector may need to conduct more targeted risk assessments based on the vulnerability of certain types of assets. This is particularly true for real estate assets. In this regard, the Sustainable Real Estate Observatory offers a platform for analyzing the resilience of buildings and regions (R4RE – Resilience for Real Estate), which includes a decision-support module for climate risks at the national and European levels, based on IPCC scenarios. Using an address, risk exposure to climate hazards is determined, and the analysis is supplemented by a vulnerability score, assessed based on responses to a few questions regarding the building’s characteristics⁸⁰. In terms of financing, investors in the infrastructure sector are more advanced on decarbonization issues, though there is a diversification toward issues that can address adaptation, including Nature-based Solutions. In this regard, in November 2025, Ardian mobilized Development Finance Institutions (DFIs)—the European Investment Bank (EIB), Proparco, and British International Investment (BII)—to secure a €100 million commitment in support of its Nature-based Solutions strategy⁸¹.

79 Les Echos, “Climate: ‘Nearly \$600 billion in potential infrastructure value loss,’ 2025.”

80 <https://o-immobilierdurable.fr/r4re/>

81 <https://www.afp.com/fr/infos/ardian-mobilise-des-institutions-de-financement-du-developpement-efd-la-banque-europeenne>

AEW by Natixis IM – Integrating Climate Risks into Real Estate Asset Management

AEW has been integrating climate risk into its management since 2017 by assessing the projected climate risks to which buildings are exposed. In 2019, AEW partnered with a technical consulting firm to develop a resilience audit to assess buildings' vulnerability to climate risks. AEW then conducted a study on a sample of buildings in Europe to calculate the projected impact on property values of two scenarios: the first involving climate inaction and the second involving action through the implementation of adaptation plans. This study enabled AEW to convince its investors to integrate climate risk into their portfolio management.

Since 2020, AEW has been working to reduce vulnerability to climate risks by systematically conducting climate studies and resilience audits at the time of acquisition and during major renovation projects, enabling the development of action plans to reduce the vulnerability of buildings to projected climate hazards. AEW has implemented a tool to track adaptation plans, ensuring their implementation by various internal and external stakeholders.

AEW has also adapted its real estate investment strategy for certain high-risk locations.

In 2020, we also drafted a comprehensive policy for adapting to physical climate risks and the energy transition, based on the TCFD framework, which involves the relevant teams: asset management, the investment risk committee, the legal department, the research department, the insurance management team, and the technical department.

In 2024, AEW collaborated on a European research program on adaptation to climate change. And in 2025, AEW launched a collaborative initiative with local authorities, insurers, experts, infrastructure managers, and real estate companies to address the resilience of the Île-de-France region, the interdependence of stakeholders, and the need for coordination.

Finally, AEW works closely with its insurance company to ensure that adaptation efforts are taken into account when calculating insurance premiums.

3. INSURERS: THEIR STRATEGIC ROLE IN AN INCREASINGLY THREATENING CLIMATE

WHAT ROLE CAN INSURERS PLAY IN ADAPTATION?

Insurers wear **three hats** when it comes to adaptation and can therefore combine several roles:

- They **insure their clients against** natural **hazards**;
- They **inform** policyholders of their exposure to these risks by engaging with them and developing tailored offerings;
- They **invest in adaptation solutions through their investment arm**.

Insurance industry players occupy a unique position: **they invest for the long term, allowing them to consider time horizons more directly aligned with those of climate risks and natural hazards** (e.g., home and personal property insurance, public assets, agricultural operations, etc.). Their potential to contribute to the deployment of finance that integrates adaptation challenges is therefore very significant.

WHAT ARE THE MAIN OBSERVATIONS?

A UNIQUE INSURANCE SYSTEM WORLDWIDE: THE “CAT-NAT” REGIME

A distinctive feature of the French insurance system is the implementation of a scheme that is unique in the world: the “Cat-Nat” natural disaster compensation scheme, which operates through a mechanism for pooling the insurability of climate-related risks. This scheme, established by the law of July 13, 1982, is based on a public-private partnership involving insurers, the Caisse Centrale de Réassurance (a public reinsurer), and the government, with the goal of providing broad and equitable coverage for natural disasters.

The law does not provide an exhaustive list of covered natural phenomena, but the hazards typically covered include:

- *Floods and mudslides;*
- *Floods resulting from rising groundwater levels;*
- *Phenomena related to the action of the sea (mechanical impact of waves and marine submersion);*
- *Differential ground movements resulting from drought and soil rehydration;*
- *Large-scale cyclonic winds (averaging over 145 km/h over 10 minutes or with gusts of 215 km/h);*
- *Avalanches;*
- *Volcanic eruptions;*
- *Land subsidence caused by underground cavities and marl pits (excluding mines)⁸².*

82 For a more detailed description of the “Cat-Nat” scheme, refer to the CCR’s information: A descriptive box on the scheme can be found in the I4CE publication, [“Real Estate Adaptation: What Roles for the Financial Sector,”](#) 2025, pages 20 and 21.

Hazards not covered by the natural disaster compensation scheme include the effects of wind (excluding the cyclonic winds described above), frost, hail, and the weight of snow on roofs, which are covered by the **TNG scheme: “storm-hail-snow”**⁸³.

Regarding **agriculture, comprehensive climate insurance covering crops** constitutes another insurance scheme based on national solidarity and risk-sharing among the State, farmers, and insurers in the event of losses potentially linked to natural hazards⁸⁴.

In conclusion, the French insurance system for climate hazards and natural disasters is essentially based on a system of risk pooling and national solidarity, which is a fundamental element in understanding the role of insurers in adapting to climate change.

THE SUSTAINABILITY OF OUR INSURANCE MODEL IN THE FACE OF CLIMATE RISKS

However, despite the significant advantage of the climate risk mutualization system in France, several observations suggest that this is not sufficient to cope with the acceleration of climate events. Indeed, the “Cat-Nat” system is a mechanism that was not originally designed to address climate change, as it was based on an implicit assumption of long-term risk stability, whereas risks are only increasing. For example, since 1982, floods have accounted for 49% of cumulative losses, amounting to 30.2 billion euros, with an average annual cost of 702 million⁸⁵. As for the risk of drought, over the past five years, its cost has risen from 300 million euros per year to 1.1 billion euros.

In this vein, the 2024 “Task Force on the Insurability of Climate Risks in France,” known as the “Langreny Task Force,” issued recommendations aimed at ensuring the financial stability of the insurance system for natural disaster compensation. Among the recommendations, the task force proposed strengthening the compensation system through a higher levy on the proceeds of additional premiums related to coverage against natural disaster risk. **The task force estimates that climate change will lead to an increase in estimated claims costs of around 1% for the “Cat-Nat” system through 2050.** In response to these findings, the “Cat-Nat” surcharge rate was increased effective January 1, 2025. The surcharge rate was raised from 12% to 20% for comprehensive home insurance (MRH) and commercial property policies, and from 6% to 9% for auto insurance policies. This increase, the first in 25 years, represents a shared effort by all French policyholders. The claims rate in the coming years and the triennial assessments by CCR of the impact of climate change on these costs will subsequently allow this new pricing structure to be put to the test⁸⁶.

83 <https://www.doubs.gouv.fr/Actions-de-l-Etat/Securite-et-protection-de-la-population/Risques-majeurs/Subventions/Dispositifs-assurantiels/Dispositifs-assurantiels/TNG-Tempete-Neige-Grele>

84 <https://agriculture.gouv.fr/assurance-recolte-reponses-aux-questions-frequeemment-posees>

85 <https://www.statistiques.developpement-durable.gouv.fr/edition-numerique/chiffres-cles-risques-naturels/8-sinistralite-liee-aux-catastrophes-naturelles>

86 See the increase in insurance premiums in 2025: https://www.lemonde.fr/economie/article/2024/04/03/trente-sept-propositions-pour-adapter-l-assurance-au-changement-climatique_6225829_3234.html.

Consultations with various insurers in the Paris market also raise the question of the sustainability of our insurance model and the level of acceptability of a continuous increase in surcharges that fund the “Cat-Nat” system. Indeed, a growing increase in policyholders’ contributions carries the risk that they will no longer be able to keep up with rate hikes. Thus, the question of the sustainability of our insurance model in the face of climate risks arises, despite the strength of this mutualization system.

The report from the “Langreny Task Force” proposes additional measures to prevent the steady rise in surcharges over time. Among the proposed measures, **the report’s authors particularly recommend strengthening prevention efforts**⁸⁷. In exchange for a one-time investment, prevention serves as a line of defense against claims, as it partially or completely eliminates the recurring financial impact of future events. More broadly, **the report also raises the issue of differentiated treatment for certain properties in high-risk areas in order to preserve climate risk coverage for all**. The mission on insurability specifically mentions as a potential lever for action the possibility of **raising the requirements for preventive measures incumbent upon individuals, businesses, and local authorities, targeting those who meet both (i) high or very high exposure, and (ii) the financial means to fund appropriate preventive measures, with a particular focus on three categories of insured property: second homes, rental properties, and commercial properties with high insured values (for example, exceeding €20 million in insured building, contents, and business interruption coverage)**. This proposal is a way to significantly increase the incentive to invest and to maintain the obligation to insure these categories, while deregulating rates (i.e., the level of the Cat Nat surcharge) and deductibles, thereby freeing up the full price signal that the insured can receive.

More broadly, a bill aimed at adapting insurance mechanisms to climate change has been introduced in the National Assembly. It seeks, in particular, to end the principle of identical reconstruction following a natural disaster and to authorize insurers to adjust premiums for certain properties located in high-risk zones⁸⁸.

87 See, for example, Objective 5: “**Guide insurers’ prevention efforts through a catalog of adaptation measures appropriate to the French context,**” as well as Objective 6: “**Strengthen funding for the prevention of major natural risks.**”

88 AEF, “[Insurance and Climate: In Committee, Lawmakers Reform the Principle of Reconstruction to Identical Specifications and the CatNat Regime,](#)” 12/03/2025.

Strengthening individual and collective prevention efforts is an essential area for progress in containing the projected rise in claims costs. This effort must involve insurance stakeholders and public decision-makers more closely. **Insurance companies already contribute to funding prevention against major natural hazards by transferring 12% of the “Cat Nat” surcharge to the state budget, which is used to replenish the Barnier Fund. However, these resources do not appear sufficient given the massive investments that would be required for a prevention policy commensurate with the challenges.** A broader overhaul of prevention policies is necessary. In 2024, France Assureurs called for a comprehensive and coordinated national risk prevention strategy in response to rising claims rates and growing insurance needs⁸⁹. Beyond the safety concerns for people, prevention must be recognized as a top-priority economic and land-use planning issue.

In the insurance sector, these additional preventive measures can take various forms, such as *financial incentives for prevention within insurance policies, the distribution of communication and awareness-raising materials for policyholders and the general public, and alert messages sent to policyholders, economic partnerships with solution developers to guard against climate-related risks, or the principle of “post-disaster resilience” or “Build Back Better,” which examines how damaged infrastructure and buildings must be redesigned to remain insurable*, etc. Prevention is also a tool available to insurers as part of their commitments and regular discussions with other financial sectors. For example, enhanced dialogue between insurers and real estate developers would help ensure that future construction projects incorporate adaptation considerations and that a genuine effort is made to address the management of local vulnerabilities. More broadly, the reconstruction sector also has an important role to play in “post-disaster resilience,” in close collaboration with insurers.

However, these initiatives are still in their infancy and are not yet sufficiently widespread within insurance offerings.

More broadly, insurers are joining various **private coalitions and initiatives addressing adaptation and prevention challenges related to climate change**, such as **the “Drought Initiative”** launched by CCR, France Assureurs, and the State’s Natural Risks Mission, which aims to analyze additional prevention and protection solutions alongside the repair methods recommended by experts for over 300 homes affected by clay swelling and shrinkage (RGA). The goal is to identify the most effective and sustainable solutions⁹⁰. This enhanced dialogue between insurers and the government underscores the need for strong coordination among these various stakeholders to maintain a sufficient level of insurability across France.

89 <https://www.agefi.fr/news/banque-assurance/france-assureurs-appelle-a-une-strategie-nationale-de-prevention-des-risques>

90 <https://www.ccr.fr/ccr-france-assureurs-et-la-mission-risques-naturels-lancent-le-projet-initiative-secheresse/>

The hearings conducted with various insurers also highlight the need for greater and more detailed coordination regarding climate-related hazards at the regional level. In this regard, the “Langrenoy” mission recommends mapping areas exposed to major natural hazards, with this effort shared among the government, the CCR, and the insurance sector. **This reflects an increased need on the part of insurers for updated Natural Risk Prevention Plans that map a number of hazards across regions, as well as strengthened prevention action plans coordinated by the State—which is not always the case due to a lack of financial resources.**

BETWEEN INSURABILITY OF CLIMATE RISK AND THE RISK OF DISENGAGEMENT: A COMPLEX BALANCE

When an insured party is refused coverage by an insurance company for climate-related risks due to the high risk of natural disasters to which they are exposed, they may appeal to the Central Rating Office. **The Central Rating Office (Bureau Central de Tarification) is an administrative authority often little known to the general public that is responsible for ensuring the obligation to provide insurance.** In cases of insurance refusal under schemes expressly provided for by the Insurance Code, the BCT has the authority to require the insurance company chosen by the insured to underwrite the risk, which is often higher than the average rate due to the level of exposure to climate-related hazards. After reviewing the case, the BCT sets the rate at which the insurance company must provide coverage to the insured party. The BCT then requires the insurance company in question to underwrite the requested policy, which includes this coverage⁹¹. However, this recourse, in addition to being little known, is potentially lengthy and complex.

The withdrawal of insurers from areas highly exposed to climate risks poses a major strategic risk, both for policyholders and the economies of these regions, as well as for the stability of the French insurance system. These developments call for the rapid implementation of risk-sharing measures. To this end, PNACC 3 aims to “preserve broad risk pooling for climate risks through affordable insurance coverage available throughout the country,” including in areas highly exposed to climate change. To this end, it plans to strengthen communication regarding the missions of the Central Rating Bureau in 2025, as well as the implementation, in 2026, of a commission mechanism for the CCR, so that insurers remain in exposed territories (see Measure 2 of PNACC-3).

91 <https://www.justice.fr/fiche/saisir-bureau-central-tarification-raison-lie-assurance-risques-catastrophes-naturelles>

However, despite this risk-sharing mechanism, **the Association of Mayors of France and Intermunicipal Presidents highlights the difficulties faced by certain French municipalities in obtaining insurance policies due to the increasing frequency of climate-related hazards in their territories, which may prompt some insurers to withdraw from the municipal insurance market**^{92,93}. This is the case, for example, with the city of Les Sables-d'Olonne, which was devastated by Storm Xynthia in 2010, has no insurer to cover climate risks, and is forced to insure its own risks⁹⁴.

The CCR has also been tasked with establishing an **Insurability Observatory**⁹⁵ in France (see Measure 2 of the PNACC-3). Its mission will be to identify whether certain areas are more difficult to insure than others due to their exposure to climate-related events. The Observatory's purpose is to help ensure the long-term availability of a solidarity-based and mutualized insurance offering in metropolitan and overseas territories, at a time when natural disasters are becoming increasingly frequent and intense. The Observatory is being developed in consultation with stakeholders in the insurance sector, with the public interest in mind.

More broadly, **EIOPA** (European Insurance and Occupational Pensions Authority) is developing the first European dashboard to track the level of insurance protection against natural disasters. This dashboard identifies the factors contributing to the protection gap in climate-related insurance, with the aim of pinpointing measures that will help reduce societal losses in the event of natural disasters⁹⁶.

WHAT BEST PRACTICES ARE BEGINNING TO EMERGE IN THE PARIS FINANCIAL MARKET?

A few initial initiatives and best practices have been identified in the Paris financial market and are worth highlighting:

1. CLIMATE RISK MODELING AND DATA SHARING

Insurers collect data on the climate risk exposure of the various properties they insure. This collection of diverse data allows them to model the risks to which their policyholders are exposed with greater precision. This has led some insurers to develop services as providers of climate data and advice that can be offered to private and public sector actors to support them in their adaptation efforts. These various offerings thus contribute to the dissemination of data on climate hazards and, *ultimately*, to the creation of a “risk culture” across France.

92 <https://www.amf.asso.fr/documents-lamf-appelle-nouveau-une-action-urgente-face-la-crise-lassurance-collectivites-locales/42463>

93 In the local government market, the Government has implemented several measures to ensure their insurability: see [the press kit](#), [the guide to public insurance procurement](#) to assist local governments in contracting, and the July 2025 [press release](#) summarizing the Government's commitments.

94 https://www.lemonde.fr/planete/article/2024/02/29/face-au-risque-climatique-la-commune-des-sables-d-olonne-lachee-par-les-assurances_6219198_3244.html

95 <https://www.ccr.fr/catastrophes-naturelles-lancement-de-lobservatoire-de-lassurabilite/>

96 https://www.eiopa.europa.eu/tools-and-data/dashboard-insurance-protection-gap-natural-catastrophes_en

→ [Altitude](#) is the business unit within AXA Climate that develops science-based, data-driven SaaS products. This platform enables various beneficiary institutions to assess their risks on a global scale using the climate models and geospatial resolution provided by the tool. For each modeled risk, the platform offers a quantitative description of the business impacts and concrete recommendations for adaptation.

→ AXA Climate has also launched [the AXA Climate School](#), an online training program designed for all professionals (in the private sector, elected officials, local government employees, etc.) to foster awareness of transition challenges. More broadly, the “[Ma Commune en Action](#)” platform developed by AXA supports French municipalities in their adaptation to climate change.

→ **CCR offers disaster prevention advice to support public and private stakeholders in addressing climate risks.** Building on its central role in the “Cat-Nat” system, CCR drives prevention efforts across the country by advising the government, local authorities, insurers, and businesses. CCR also aims to promote investment in the development of an economic sector focused on risk knowledge and mitigation⁹⁷.

2. THE DEVELOPMENT OF INNOVATIVE INSURANCE PRODUCTS

Certain innovative insurance products are beginning to emerge and incorporate a co-benefit linked to adaptation,

→ **Among these levers is the “no-claims discount” system, which rewards cautious behavior or measures that limit risk exposure—a model with which insurers are already familiar.** For example, this system benefits cautious drivers by offering them direct savings on their auto insurance. This approach could be applied to climate risk management by encouraging and financially rewarding policyholders who protect themselves against hazards—for example, through the installation of flood prevention systems, solutions to address clay shrinkage and swelling, or fire prevention measures.

However, this type of insurance product remains in the exploratory phase among the insurers interviewed. One of the identified limitations is that the measures to be implemented by individuals are sometimes too costly relative to the premium reduction obtained, which can be discouraging (as is the case, for example, with the installation of very expensive cofferdams). Some policyholders interviewed also believe that these products would likely be more relevant and impactful for larger clients, who are better able to finance more substantial measures, such as certain companies for which they insure some of their sites.

A pioneer in this field, BPCE Assurances launched the first impact-based home insurance policy in 2025, thereby rewarding policyholders who implement climate change mitigation and/or adaptation measures. Beyond the financial benefits offered by this type of policy, it can promote better management of climate risks by encouraging preventive measures tailored to specific hazards. These actions also represent an opportunity for insurers to reduce their exposure to claims and align their offerings with a sustainability framework.

97 <https://www.ccr.fr/activites/prevention/>

BPCE Assurances⁹⁸ – an impact-driven home insurance policy that rewards adaptation efforts

Launched in 2025, this impact-driven home insurance aims to support customers in the energy transition and in building resilience against climate hazards through the energy and climate transition discount, a pricing mechanism applicable to comprehensive home insurance policies (MRH).

A simple, incentivizing, and attractive discount mechanism

This discount is available to all homeowners or apartment owners insured for their primary or secondary residence under the BPCE Assurances IARD Home Insurance policy sold by the Banques Populaires and Caisses d'Epargne, with no minimum tenure requirement. It also applies to non-occupant owners or landlords.

The discount applies immediately to the insurance premium; it is permanent and increases up to 15% over the life of the policy depending on the number of eco-friendly criteria met:

- 1 eco-friendly criterion: 5% discount
- 2 eco-friendly criteria: 10% discount
- 3 eco-friendly criteria: 15% discount

An incentive for eco-responsibility

To qualify for the energy and climate transition discount, the policyholder must meet at least one of the following criteria demonstrating their eco-responsible commitment:

- Financing for energy-efficient renovations: The policyholder must have taken out an Energy Renovation personal loan or a zero-interest Eco-Loan from a Banque Populaire or Caisse d'Epargne, or have received MaPrimeRénov'.
- Energy performance: The home must have an Energy Performance Certificate (EPC) rated A or B.
- **Protection and adaptation to climate risks: The insured has carried out installations or work to make their home resilient to flooding and/or clay shrinkage and swelling (drought).**

98 For more information: <https://newsroom.groupebpce.fr/actualites/banque-populaire-et-caisse-depargne-creent-lassurance-habitation-a-impact-pour-recompenser-lengagement-eco-responsable-de-leurs-assures-a7fe0-7b707.html>

For example: Julien takes out an Energy Renovation personal loan from a Banque Populaire or a Caisse d'Épargne to carry out work on his home. He thus meets the first eco-responsible criterion and receives a 5% discount on his comprehensive home insurance. Thanks to the completion of his renovation work, his home's energy performance has improved, and it is now rated B on the Energy Performance Certificate (EPC). Julien has thus met a second criterion; his discount increases to 10%, and he will benefit from it for the entire duration of his policy.

Other innovative insurance products are also being tested to address adaptation challenges:

AXA – various innovative insurance products can address adaptation

The AXA Group and its various subsidiaries are testing a range of insurance products designed to address the challenges of climate change adaptation. Among these solutions are:

AXA XL⁹⁹ provides support for the implementation of “debt-for-nature swaps,” which are financial transactions in which a portion of a developing country's external debt is canceled in exchange for local investments in environmental conservation measures. For example, **in 2024, AXA XL provided credit insurance to support a “debt-for-nature swap” for the government of the Bahamas in collaboration with various stakeholders.** This transaction will support marine conservation over the next 15 years in a Caribbean region vulnerable to climate change. These innovative insurance models can address multiple environmental challenges such as biodiversity conservation and climate change adaptation.

AXA offers a “green warranty”¹⁰⁰. This warranty allows policyholders—both individuals and businesses—to co-finance renovation work following a loss in order to reduce greenhouse gas emissions. It applies to damage caused by events such as fires, storms, floods, and hail. Eligible renovation work includes improving insulation, installing heat pumps, geothermal systems, or other renewable heating solutions, and installing solar panels. Only the damaged parts of a building may be renovated in this way, and the policyholder must co-finance the work up to the amount contributed by AXA. The assistance is capped at 20% of the compensation (up to €50,000 for individuals and €200,000 for businesses) and may cover up to 50% of the total renovation cost.

99 For more information: <https://axaxl.com/fast-fast-forward/articles/nature-bonds-project-enables-bahamas-to-effectively-manage-its-marine-protected-areas>

100 Learn more: [Unlock Sustainable Insurance | AXA](#)

How Energy Efficiency Comes into Play After a Flood Thanks to the Green Guarantee Our client was the victim of a flood caused by a nearby river (classified as a natural disaster). Her home was severely damaged, and, in particular, her oil-fired boiler was beyond repair. Since this boiler could not be replaced, our client opted for a more efficient alternative by installing a heat pump. In addition to the compensation provided by her policy, thanks to the activation of the Green Guarantee, she benefited from co-financing provided by AXA to cover the installation costs.

At the same time, AXA Climate, the AXA Group entity dedicated to climate and environmental adaptation, is also working to deploy innovative insurance solutions:

→ For example, parametric **insurance**¹⁰¹ covers areas or assets that are typically underinsured by traditional insurance, such as **forest ecosystems, mangroves, and coral reefs**. This tool helps fund a wide range of initiatives: compensating for economic losses in the event of the destruction of these ecosystems (which are extremely vulnerable to natural disasters), implementing resilience plans, and supporting the restoration of these ecological habitats.

→ AXA Climate¹⁰² also supports several pilot projects aimed at transitioning from conventional agricultural practices to agroecological practices (reducing inputs, widespread use of cover crops, changes in tillage practices, etc.). One of the case studies presented is an innovative insurance product designed to support the transition of a vineyard in Cognac. A hybrid insurance product has been implemented, relying on a decision-support tool (DeciTrait) to monitor the risks of fungal diseases and trigger compensation if necessary. Treatment decisions remain at the producer's discretion but must generally align with the tool's recommendations, which take into account the specific characteristics of biocontrol products. The approach combines field observations with a yield index to estimate disease-related losses and compensate producers if these losses become too significant. If disease losses exceed 10%, a payment proportional to the observed loss level is automatically triggered.

101 Learn more: <https://climate.axa/fr/publications/assurance-parametrique-en-1ere-ligne/>

102 Learn more: <https://climate.axa/fr/publications/transition-agricole-succes-et-risques-economiques/>

AXA Hong Kong & Macau – An Innovative Approach to Rewarding Climate Change Adaptation: Sustainability-Linked Insurance¹⁰³

This innovative solution launched by AXA Hong Kong & Macau, Marsh, and Link Asset Management (Link), with the support of the Hong Kong Green Finance Association (HKGFA), addresses the impact and mitigation of climate risks while further rewarding and encouraging corporate resilience measures. The key features of this solution launched in the Asian market include 1) a comprehensive assessment of climate and technical risks, 2) a set of sustainability-linked key performance indicators (KPIs) defined and aligned between the insured and the insurer, 3) preferential treatment in terms of coverage and premiums granted to the insured, and finally, 4) periodic monitoring to ensure that the pre-established key performance indicators are met, with adjustments as necessary, 5) insured businesses continue to invest in climate change mitigation to strengthen their resilience and achieve the key performance indicators.

AXA and Link have already successfully conducted a proof of concept at Temple Mall, demonstrating how its flood resilience measures can reduce potential losses by 10 to 20%. By integrating risk identification, targeted mitigation, and transparent commitment from insurers, AXA's SLI () product aims to transform resilience from a defensive measure into a financial advantage for both insurance companies and property owners in Asia.

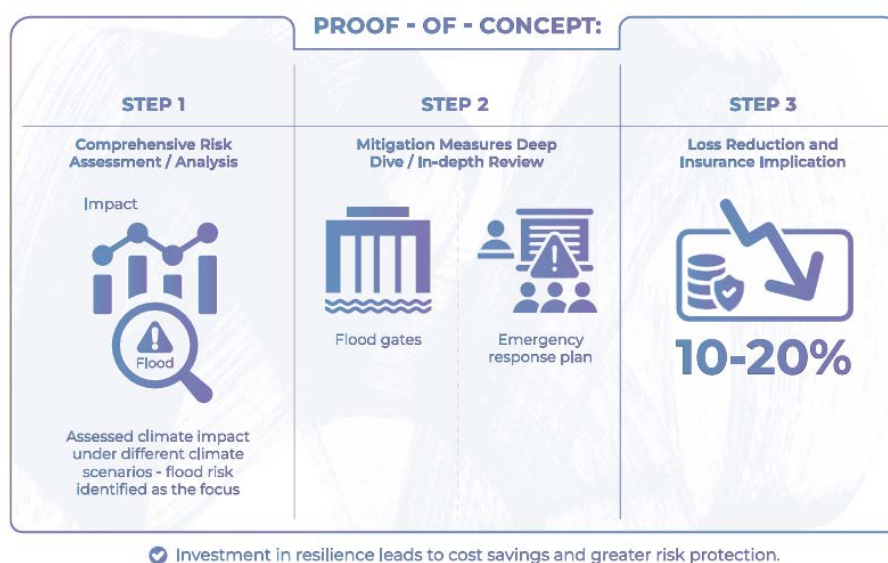


Figure – Proof of concept (source: AXA Hong Kong & Macau)

103 Learn more: [Sustainability-Linked Insurance: Innovating to Inspire Investment in Climate Resilience](#)

Covéa (and its brands MAAF, MMA, and GMF) – A commitment to allocate 0.5% of home insurance premiums to prevention¹⁰⁴, and the launch of an innovative tool to anticipate climate risks¹⁰⁵

For several years, the Group has been expanding its climate prevention initiatives, notably through **the publication of white papers on climate change and prevention; the development of practical guides for the general public and professionals; the deployment, in partnership with CEREMA, of the MACH solution (“Maison Confortée par Humidification”)**; and active participation in the **MIRAPI (“Better Reconstruction After Flooding”)** and **ALABRI (public program for homeowners, tenants, and housing managers in flood-prone areas)** initiatives, as well as the **Drought Initiative**. These actions have fostered a better understanding of risks and advanced a culture of prevention among members.

A strong and transformative financial commitment

As has been done for road safety, where insurers contribute 0.5% of their auto liability premiums to funding, Covéa and its brands MAAF, MMA, and GMF are pioneers and plan to allocate an equivalent 0.5% of home climate premiums to concrete actions for prevention and preparation for climate change. This budget will notably fund preventive information and awareness – s for members, develop partnerships aimed at better anticipating natural hazards, and provide members with innovative diagnostic and awareness-raising tools.

Well-Informed, Well-Insured: a simple, educational service to better understand climate risks

Building on this momentum, Covéa is launching the “Well-Informed, Well-Insured” tool in 2025. Accessible for free via the member portal, the tool allows each member to assess the climate, natural, and technological risks to which their home is exposed today and by 2050. Using advanced modeling and scientific data analysis, the tool provides the following in just a few clicks:

- **A geolocated risk assessment** (flooding, drought, wildfire, storm, hail, etc.) based on the home’s address;
- **A projection looking ahead to 2050**, to assess the potential evolution of these risks due to climate change;
- **Tailored prevention guides**, with clear, practical, and personalized advice to strengthen the home’s resilience.

104 For more information on the program: <https://www.covea.com/fr/actualites/covea-lance-bien-informe-bien-assure-outil-innovant-anticiper-risques-climatiques>

105 June 2025 Press Release: [Well-Informed, Well-Insured – GMF](#)

→ Generali, MAIF, Société Générale Assurances, Saretec, and Sixense—five major players in insurance and risk management—are launching a company dedicated to climate risk prevention. Named Geoya, this groundbreaking market solution will offer individuals, businesses, and local governments a platform of tools and services to strengthen their resilience against climate hazards¹⁰⁶.

106 <https://www.aefinfo.fr/depeche/744960-maif-general-et-sg-assurances-creent-goeya-une-solution-de-place-pour-la-prevention-des-risques-climatiques>

4. OVERVIEW OF THE MAIN FINANCIAL SOLUTIONS DEPLOYED BY PLAYERS IN THE PARIS FINANCIAL MARKET FOR ADAPTATION

Main financial mechanisms tested by the Paris Financial Centre to address adaptation financing challenges:	Issues addressed
Sustainable bonds with an “adaptation” co-benefit	Energy renovation of buildings
Subsidised loans or sustainability-linked loans incorporating resilience criteria	Financial assistance for flood risk mitigation measures (e.g. cofferdams)
Exceptional support fund for affected customers	Resilient infrastructure
Consulting and diagnostic services for public and private actors	Compensation measures in the event of a hazard (e.g. damage insurance, support funds)
Thematic funds and/or impact funds	Adaptation of vulnerable economic sectors (e.g. mountain tourism)
Market funds (listed and unlisted)	Water management: wastewater management, reduction of consumption and leaks in networks, improvement of infiltration)
Small-cap investments in companies providing adaptation solutions	Transition of agricultural practices and soil resilience
Carbon credits/nature credits	Support for adaptation measures in a given area (soil de-impermeabilisation, revegetation, green and blue infrastructure, thermal comfort, water cycle, shaded areas, etc.)
Impact insurance rewarding policyholders’ adaptation efforts through incentive pricing (or Sustainability-Linked Insurance)	Preservation and restoration of biodiversity (e.g. SAFN, forest ecosystems, mangroves, corals, etc.)
Credit insurance facilitating debt-for-nature swaps	Prevention of climate hazards (warning systems, drought prevention techniques, individual flood protection systems, etc.)
Parametric insurance (forests, mangroves, corals, etc.)	Climate risk modelling systems/climate data
Blended finance: public-private partnerships (e.g. in coordination with the BPI and the EIB)	

Source: IFD, based on hearings and consultations conducted with various financial institutions in the Paris financial centre

Figure – Key financing solutions deployed by players in the Paris financial market for adaptation (source: IFD) [Insert PPT version]

The Paris financial market is developing a growing range of solutions to meet financing needs related to climate change adaptation. Market participants are experimenting with a variety of mechanisms ranging from sustainable bonds incorporating an “adaptation” co-benefit to subsidized loans or Sustainability-Linked Loans that include resilience criteria, as well as thematic or impact funds, investments in adaptation technologies, innovative insurance products, and blended finance arrangements. **These solutions aim to support a variety of projects:** water management, resilient infrastructure, adaptation of vulnerable economic sectors, biodiversity conservation, agricultural transition, climate risk prevention, and risk modeling.

Banks		
Blue Bonds	Wastewater management & desalination using low-impact technologies	Facilitated by BPCE, BNP Paribas
Paris Climate Bond	Issued by the City of Paris to finance adaptation measures under its Climate & Energy Action Plan	Facilitated by Crédit Agricole CIB, Société Générale, and HSBC
Tokyo Metropolitan Government Climate Resilience Bond	Issued by the Tokyo Metropolitan Government	Facilitated by CACIB
Pilot project in the tourism sector	Exposure and vulnerability assessment, consultation with clients and local stakeholders, vision and strategic adaptation priorities, and tailored offerings (dedicated financing, insurance, advisory services)	Crédit Agricole Caisse des Savoie
Sustainability-Linked Loans	Partnering with the agricultural sector to support the transition of farming practices	BNP Paribas
Partnership with the EIB	To facilitate financing for regional transition and adaptation projects	Crédit Mutuel Arkéa
Asset managers		
“Green” thematic funds compatible with an adaptation dimension	To invest in companies offering adaptation “solutions”	TERRA Fund, Swen Capital Partners —focus areas: water, agricultural transition, and soil regeneration. Demeter IM “Innovation for Adaptation and Mitigation” Fund
Fund dedicated to natural disaster prevention	To finance risk prevention	Climate Change Resilience Fund, CCR x Starquest
Investments in new players and/or adaptation technologies	E.g., climate data collection, climate risk management systems, cooling solutions, transition and adaptation technologies	BNP Paribas, Société Générale (through its stake in REED, an investment firm)
Insurance		
Impact-driven home insurance	Rewarding policyholders’ adaptation efforts through incentive-based pricing	BPCE Insurance
Parametric Insurance	To insure assets (particularly forests) against the challenges of climate change	AXA Climate, Descartes Underwriting
Innovative tools for anticipating climate risks	Solutions for analyzing climate risks and identifying adaptation measures	AXA Climate, Covéa and its brands
Launch of Geoya, a company dedicated to climate risk prevention	To offer individuals, businesses, and local governments a platform of tools and services to strengthen their resilience in the face of climate hazards	Generali, MAIF, and Société Générale Assurances have partnered with Sartec and Sixsense, two companies specializing in risk management
% of home insurance premiums dedicated to funding prevention measures	To expand support for policyholders in risk prevention	Covéa and its brands MAAF, MMA, and GMF
Insurer-business partnership	To provide technical support to policyholders in risk prevention	BPCE Assurances with a company supplying flood barriers

Table – Examples of initiatives by financial actors on adaptation financing (Source: IFD)

Banks are deploying several tools: *blue bonds* to finance wastewater management and desalination (BPCE, BNP Paribas); *the Paris Climate Bond* issued by the City of Paris to finance adaptation measures (Crédit Agricole CIB, Société Générale, HSBC); *sector-specific pilot projects*, particularly in mountain tourism (Crédit Agricole Caisse de Savoie); *Sustainability-Linked Loans* incorporating resilience criteria for agricultural transition (BNP Paribas); partnerships with the *EIB* to finance regional and adaptation projects (Crédit Mutuel Arkéa).

Asset management firms are developing “green” thematic funds compatible with an adaptation dimension (e.g., TERRA, Swen Capital Partners), funds dedicated to natural disaster prevention (Climate Change Resilience Fund, CCR x Starquest), as well as investments in new adaptation technologies: climate data collection, physical risk management, and urban cooling solutions (BNP Paribas, KAYRROS). Certain impact funds, such as *Innovation for Adaptation and Mitigation* (Demeter IM), are specifically focused on adaptation solutions.

Insurers are deploying a range of innovative tools: *impact insurance* that rewards adaptation efforts through incentive-based pricing (BPCE Assurances); *parametric insurance* covering the effects of extreme weather events (AXA Climate, Covéa and its brands); *tools to anticipate climate risks* (Generali, MAIF, and Société Générale Assurances); or *the allocation of a percentage of home insurance premiums* to fund prevention measures (Covéa, MAAF, MMA, GMF). *Insurer-business partnerships* are also emerging to support protective investments (BPCE Assurances).

Taken together, these initiatives reflect a transformative trend: the rise of financing instruments dedicated to resilience, which are still in the experimental phase but already offer concrete solutions to support the adaptation of businesses, regions, and populations.



FRANCE AT +4°C:
FINANCING THE ECONOMY'S
ADAPTATION TO CLIMATE CHANGE

III. RECOMMENDATIONS FOR FINANCING THE ADAPTATION OF THE FRENCH ECONOMY

The recommendations presented in this section aim to establish funding mechanisms for climate change adaptation projects that are tailored to the circumstances of as many project proponents as possible. They were developed based on the two-pronged analysis presented here: the assessment derived from the numerous interviews conducted as part of this work and the case study analysis (available in the supplementary report). Finally, they were jointly developed by a working group within the IFD in close collaboration with stakeholders from the economic and financial sectors.

A. THE STRATEGY – CREATING AN ENVIRONMENT CONDUCTIVE TO ACTION: A CLEAR, COHERENT, AND WELL-EQUIPPED FRAMEWORK FOR ADAPTATION

The first set of recommendations aims to lay the essential foundations for effective, large-scale adaptation financing: a clear strategic framework, coherent rules, reliable data, and enhanced support. By consolidating the National Climate Change Adaptation Platform (PNACC) as the backbone of public action, the goal is to reduce uncertainty, avoid maladaptation—particularly through solutions inspired by nature—and provide public and private actors with the tools, engineering expertise, and guidelines they need to take action. The goal is to create a clear, operational, and coordinated environment—a prerequisite for scaling up adaptation efforts in France and across the European Union.

STRENGTHEN NATIONAL STRATEGIC LEADERSHIP ON ADAPTATION

→ **Unify the management of the PNACC through coherent government-wide coordination and the strategic implementation of its objectives across all public policies.** The challenge of resilience to the physical risks of climate change cuts across the entire economy. Given its critical nature, particularly for the current and future competitiveness of the French economy, it requires strong and consolidated action at the highest level of government.

→ **Conduct a comprehensive review of existing public policies to assess their alignment with climate resilience objectives,** prevent maladaptation, and prioritize projects that are sustainable over the long term. In particular, better incorporate climate change adaptation into public funding. An ongoing inspection mission is examining the adaptation of business support programs. The mission's findings will inform discussions on integrating adaptation into public support mechanisms.

→ **Develop an “adaptation reflex” by incorporating adaptation into the design criteria for public tenders,** to make it a lever for transforming infrastructure and business practices (based on the Scandinavian Green Public Procurement model).

→ **Publish as soon as possible the complete national map of risk zones based on the type of risk involved (floods, runoff, shrinkage and swelling of clay, coastal erosion, drought, etc.).** This measure is already included in the PNACC-3 and is currently being implemented by Cerema. Discussions at the forum confirm the value of this mapping. It is therefore essential that this initiative be carried through to completion. This mapping can thus serve as the reference for planning resilient land use. The publication of this map must be accompanied by an agenda of solutions developed in consultation with local authorities to accelerate regional adaptation.

→ **Assess and plan adaptation investments** to determine priority needs based on national objectives, while maintaining the capacity to adjust in response to uncertainties, territorial challenges, sectoral priorities, and evolving needs. **More broadly, similar planning and assessment of adaptation investments at the European level would also be highly relevant.** A recent Commission study notably provides an initial mapping of the investments needed for the adaptation of the European economy¹⁰⁷.

HARMONIZE THE LEGAL FRAMEWORK

→ **Clarify the European taxonomy for adaptation based on a broader, simplified, and operational classification of resilience activities,** ensuring legal certainty, harmonized *reporting*, and *ultimately* enabling the identification of concrete adaptation solutions to be funded. The simplification of the taxonomy's technical criteria currently underway at the EU level (climate and environment delegated acts) is a step in this direction. However, it is important to note here that the key lies less in the classification of adaptation solutions than in a strategic, territorialized, and upstream consultation process between public and private actors to select relevant responses.

¹⁰⁷ European Commission: Directorate-General for Climate Action, Monteleone, L., Roberti, G., Fossati, F., Davies, W. et al., *Assessment of EU and Member States adaptation investment needs – Study on the macro-economic impacts of the climate transition*, 2026, <https://data.europa.eu/doi/10.2834/2895769>

→ **Following the model of the RE2020 regulations for the energy performance of new and low-carbon buildings, a common framework of standards—simple and clear—should be established to ensure the resilience of new buildings against climate-related hazards. This framework could also apply to comprehensive renovations. However, this general framework must be adaptable to meet specific local needs.**

- To strengthen the resilience of new buildings against the risk of clay shrinkage and swelling (shrinkage and swelling of clay, geodrying, etc.), it is therefore recommended to define, in consultation with FEDEA and stakeholders in the construction sector, a specific technical standard applicable to all new buildings located in exposed areas. This “clay swelling-compliant” standard would aim to impose appropriate construction requirements (reinforced foundations, drainage techniques, choice of materials, etc.) to sustainably limit the vulnerability of buildings to this geotechnical phenomenon. The development of this standard would draw on lessons learned from recent disasters, scientific advances, and identified best practices, in order to ensure a consistent and economically sustainable level of protection across the entire affected territory. Its implementation could be accompanied by a monitoring and information system for project owners to ensure its effectiveness and maximize its impact on the resilience of new buildings.

→ **Simplify the user experience for accessing public aid, which is currently fragmented, and prioritize comprehensive, personalized support for project leaders.** For example, it might make sense to merge all funding mechanisms for individual prevention into a multi-hazard framework, backed by the budget line currently funding prevention of clay shrinkage and swelling, whose budget would be increased. **More broadly, building on existing programs such as France Rénov,** develop a single public point of contact to support individuals and businesses in their adaptation efforts and, more broadly, their ecological transition. The “ecological transition for businesses” platform is a first step in this direction.

→ **Promote “building back better” after disasters.** Since insurers’ compensation in the event of a disaster is generally calculated based on identical reconstruction, this approach is often chosen for technical and financial convenience. **Disaster victims should receive better technical support to explore alternatives for more resilient structures, as well as financial support in the event of additional costs, particularly by increasing the visibility of existing mechanisms such as the Barnier Fund.** For example, the **MIRAPI** (*Better Reconstruction After Flooding*) pilot project, which moves in this direction, was successfully carried out in the Hauts-de-France region¹⁰⁸. More broadly, the General Directorate for Risk Prevention (DGPR) could play a pivotal role in engaging the entire reconstruction sector to ensure that repair and reconstruction operations systematically result in more resilient buildings.

108 This pilot project was conducted as part of the Barnier Fund.

SUPPORTING BUSINESSES' ADAPTATION STRATEGIES

→ For businesses and financial institutions, develop a strategic positioning on adaptation while continuing mitigation efforts. The Reference Warming Trajectory for Climate Change Adaptation (TRACC) in France provides a reference framework that economic and financial actors should be able to rely on.

- Encourage the development of an “adaptation” strategy within companies, integrated into the overall ecological transition strategy, with specific measures, dedicated management, and funding, while leveraging existing “green” tools.
- Tools such as ACT Pas à Pas Adaptation, Diag Adaptation, and other initiatives led by ADEME and BPI¹⁰⁹, as well as the Climate Indicator and ODACC, mentioned in this study, enable companies to anticipate the adaptation of their business models. It should be noted that Medef will also publish an updated version of its guide for companies on adaptation. More broadly, these tools can also help financial institutions monitor the commitment of companies in their portfolios.
- Continue the work led by the DGE and ADEME to support voluntary sectors in developing sector-specific guides and compiling feedback from companies committed to an adaptation strategy.

→ Communicate¹⁰⁹, as precisely as possible and tailored to the capabilities and size of businesses, regarding the actions implemented to improve resilience to climate change. This resilience will be an increasingly decisive factor in attracting investors and , and also depends on effective coordination among various environmental challenges (climate, nature, water, etc.).

BETTER EQUIP PUBLIC AND PRIVATE ACTION WITH SHARED DATA, METHODS, AND BENCHMARKS

→ Make the most relevant data on climate risk exposure, vulnerabilities, and projected climate trajectories **available on a national and/or European public platform** (in compliance with the GDPR and ensuring that information sharing does not jeopardize business competitiveness). Promote research and experimentation on solutions, particularly for the most exposed sectors (agriculture, construction, industry, tourism, health, etc.).

→ Strengthen studies on inequalities in the face of climate change to guide adaptation solutions so that they address and reduce inequalities (gender, regional, or socio-professional).

109 Disclosure on physical risks and adaptation actions is governed by the European Sustainability Reporting Standards (ESRS) (ESRS E1-2; E1-3; E1-4, and E1-5, according to the structure of the EFRAG technical advice of November 2025) for companies with more than 1,000 employees and revenue exceeding €450 million. Companies below these thresholds may voluntarily disclose this information using Module C4 of the VSME standards, which provide a simplified framework.

→ **Gradually incorporate the reference warming scenario into all public planning documents.** To this end, (i) update and publish maps of major hazards in the regions, (ii) develop their municipal emergency plans (PCS), their risk prevention plans (PPR), and their Territorial Climate-Air-Energy Plans (PCAET) (and the SRADDETs at the regional level), (iii) assess the economic cost of resilient development in the most exposed regions and of other measures such as risk prevention, water management, building renovation, etc. In general, taking climate resilience challenges into account is particularly critical for all local government actions related to land-use planning strategies.

→ **Strengthen support for local authorities by making the use of socio-economic studies standard practice prior to the implementation of adaptation measures.** These analyses would make it possible to assess the effectiveness, relevance, and cost-benefit ratio of the options under consideration, thereby ensuring sound public decision-making. The service recently established by the CCR, whose function is to conduct this type of assessment, could be strengthened to provide this support.

→ **Develop “regional adaptation task forces” (experts, engineers, economists).** To this end, expand and sustain the “Adaptation Mission”—a unified government engineering service for adaptation aimed at local governments—as well as the GRACCs (Regional Climate Change Adaptation Groups). The model of *resilience officers* in American cities may also be worth considering.

ESTABLISH A STRATEGY FOR INDUSTRIAL SOVEREIGNTY REGARDING ADAPTATION SOLUTIONS

→ **Define a European repository of adaptation solutions identified in the practices of stakeholders, which could assist in particular with structuring financing strategies. Among these solutions, it will be useful to identify those that are critical for the development of sovereign economic sectors.** This list should include both technologies and services, particularly in the areas of the circular economy and nature-based solutions. A recent Commission study provides an initial mapping of the adaptation levers necessary for the European economy¹¹⁰.

→ **Integrate adaptation into industrial policies to create a truly sovereign industrial sector composed of companies providing adaptation solutions (sector planning; support from Bpifrance; etc.).**

110 European Commission: Directorate-General for Climate Action, Monteleone, L., Roberti, G., Fossati, F., Davies, W. et al., *Assessment of EU and Member States adaptation investment needs – Study on the macro-economic impacts of the climate transition*, 2026, <https://data.europa.eu/doi/10.2834/2895769>

ESTABLISH AN ONGOING DIALOGUE AMONG STAKEHOLDERS AND DEVELOP EXPERTISE

→ **From a collective risk management perspective, streamline and strengthen multi-stakeholder dialogue forums** at both the national and local levels, bringing together public authorities, experts, businesses, financial actors, and residents. Ecological planning must be able to fully resume this role, particularly with the support of the National **Committee for Financing the Ecological Transition**.

- **Ensure access to insurance for all through transparent and ongoing dialogue between public and insurance sector stakeholders to anticipate insurability challenges and identify and implement initiatives that can mitigate these challenges.** Greater coordination between insurers and the government is essential to maintain an adequate level of insurability for climate risks across France, following the example of the promising pilot projects conducted under the “Drought Initiative.”
- **Strengthen collaborative dialogue among stakeholders to address the critical issue of assets abandoned by public authorities in coordination with local regions.** This effort must be combined with a regular assessment of the national territory’s exposure to climate risks (floods, droughts, fires, etc.) and a detailed identification and prioritization of funding needs across the territory. More broadly, in line with its mission, the Insurability Observatory will also help identify areas where insurance supply is likely to become constrained.

→ **Launch large-scale, attractive training programs for professions in construction, real estate, urban planning, agriculture, etc.,** by leveraging research and scientific knowledge on climate change and concrete solutions for adapting to it.

B. PROJECT LEADERS – MAKING ADAPTATION ECONOMICALLY ATTRACTIVE FOR HOUSEHOLDS, BUSINESSES, AND REGIONS

These recommendations aim to remove the central barrier identified during the study: the insufficient “perceived” economic profitability of adaptation projects. They seek to significantly mobilize private financing and integrate resilience as an explicit criterion of economic value. By making adaptation more accessible, better funded, and more highly valued in investment decisions, the goal is to align the interests of households, businesses, and regions with the requirements of climate resilience. More broadly, adaptation can be a source of innovation.

STRENGTHENING PUBLIC SUPPORT FOR PROJECT LEADERS

→ **Earmark public aid such as the Barnier Fund** to accelerate regional prevention efforts and provide better support to households. The Barnier Fund is financed by a 12% levy on the Cat Nat surcharge paid by insurers. However, today, a significant portion of these revenues is transferred to the general federal budget. We propose increasing the resources allocated to natural disaster prevention in line with this dedicated levy.

→ **Strengthen the Green Fund’s adaptation component** to provide financial support to local authorities for their territorial adaptation projects.

→ **Incorporate into the EU adaptation strategy currently under development a massive multi-year investment plan** to support local and regional authorities in financing the adaptation of territories and sectors identified as priorities. This could involve expanding the adaptation component of ERDF regional aid as well as targeted loans facilitated by the European Investment Bank (EIB). Since adaptation must be viewed as a matter of Europe’s economic sovereignty—particularly through the resilience of value chains—the overall framework, including the financial framework, must be defined at the EU level.

→ Strengthen “public-private” blended finance initiatives aimed in particular at lowering the cost of capital, thereby incentivizing private investment in adaptation. In particular:

- Strengthen public guarantee mechanisms for investments earmarked for adaptation, such as Bpifrance’s green guarantees for businesses, to reduce the perceived risk associated with adaptation projects.
- In this regard, extend the zero-interest eco-loan (éco-PTZ) to adaptation investments for households and farmers, building on the existing model for thermal renovation.
- Accelerate the tax depreciation of businesses’ adaptation-related investments.
- Promote “public-private” Payments for Environmental Services to address adaptation challenges in local areas (for example, for projects related to agricultural transition, soil resilience, and the restoration of natural areas and wetlands, etc.).

C. FINANCIAL TOOLS – MOBILIZING PRIVATE FINANCING AND TAILORING FINANCIAL SUPPORT TO NEEDS

This final set of recommendations focuses on transforming financial practices to foster a genuine “adaptation reflex.” This involves integrating physical risks into valuation models, developing tailored financial products, and creating the conditions for a surge in private investment. The ambition is twofold: to scale up insurance-based prevention and to structure new financial instruments capable of supporting regional projects as well as the industrial sector’s transition toward adaptation. In the face of increasing climate risks, the goal here is for financial actors to adopt an approach of supporting these regions through a framework of constructive dialogue to build a prosperous and resilient economy.

DEVELOPING AN “ADAPTATION REFLEX” IN FINANCIAL PRACTICES

→ **Make adaptation an environmental issue also monitored by the governance bodies of financial institutions.**

→ **Strengthen training on resilience issues within financial institutions.** Little-known yet already operational resources deserve to be mobilized (for example, taxonomies and resources already define what constitutes an adaptation investment)¹¹¹. Develop training on climate risk forecasting and climate resilience issues, certified by public authorities, and tailored to the various business lines within the financial sector. And expand the training content as knowledge on the subject matures.

→ **Accelerate dialogue among different financial sectors on adaptation. In particular, within the insurance industry, leverage synergies between the insurance and investment sectors as much as possible, capitalizing on insurers’ detailed knowledge of physical risks.**

→ **Accelerate and harmonize the engagement process with portfolio companies** most vulnerable to risks by encouraging dialogue based on vulnerability assessments and adaptation plans. The sector is beginning to develop tools and guides that enable investors to align their engagement practices with climate resilience objectives, prioritizing engagement with vulnerable companies and assets, and implementing management practices that promote the adoption of best practices in climate resilience within portfolios.

111 For example, the work of the Climate Bond Initiative, the OECD, and Talwind mentioned in Section I.1. of the report are interesting examples.

CREATE THE CONDITIONS FOR STAKEHOLDERS TO INTEGRATE ADAPTATION INTO THEIR INVESTMENT DECISIONS

→ **Develop a harmonized framework for analyzing and managing climate risks for companies and financial institutions.** Stakeholders can draw on *reporting* frameworks such as the CSRD, which promote the disclosure and harmonization of this information, as well as the European Banking Authority's prudential expectations regarding climate risk management. This framework must be based on standardized data and common metrics. The IFD working group on non-financial analysis methodologies is currently working toward this goal. Caisse des Dépôts has also initiated work on defining “pre-investment” criteria, which could be useful to build upon.

→ **Collectively rethink the calculation of the economic profitability of adaptation projects** by incorporating additional indicators into the traditional ROI calculation, such as indicators on the avoided costs of adaptation actions. More broadly, consider integrating the dimension of corporate economic resilience into accounting standards. Create and promote harmonized sector – e benchmarks to guide stakeholders and compare projects. Further work is needed on this issue.

→ **Integrate adaptation efforts into the valuation of assets (land, real estate, infrastructure) through resilience frameworks.**

STRENGTHEN INSURANCE AND FINANCIAL RISK PREVENTION

→ **Build the capacity of bank advisors and insurance brokers to discuss climate adaptation measures for their clients' assets.** In particular, insurers can raise awareness among policyholders and advise them on effective strategies for adapting their assets. The expertise of the “Reconnu Garante de l'Environnement” (RGE) network could be expanded to address adaptation issues.

→ **Plan for a long-term strengthening of the commission system under the CatNat regime to increase incentives for insurers to prevent climate risks,** in line with the rise in these risks, based on feedback from the first contracts. More broadly, anticipate demand for these types of mechanisms from policyholders.

DEVELOP INVESTMENT TOOLS TAILORED TO THE NEEDS OF REGIONS AND THE DEVELOPMENT OF AN INDUSTRIAL ADAPTATION SECTOR

→ Strengthen financial and insurance innovation among financial institutions to structure new, tailored products. On the part of banks and asset management firms, several mechanisms are emerging (adaptation impact funds, adaptation bonds, subsidized loans, investments in new adaptation technologies, etc.) that respond to growing demand and enable financial actors to manage their own climate risks. **Similarly, in the insurance sector: new insurance mechanisms are being developed that are specifically tailored to climate challenges (e.g., parametric insurance, impact insurance, etc.) or dedicated to prevention (subsidized premiums with the implementation of adaptation measures, a percentage of home insurance premiums dedicated to prevention, etc.) to foster a “risk culture.”** These initial pilot projects, once their relevance has been assessed, deserve to be rolled out more widely.

→ Following the model of the “Climate Objective” and “Biodiversity Objective” funds, explore the possibility with the Caisse des Dépôts and local institutional investors of launching an “Adaptation Objective” fund. This initiative could strengthen the dialogue between private and institutional investors on adaptation, similar to what has been achieved on the topics of transition and biodiversity.

→ Create local funds through regional coalitions that bring together stakeholders (local governments, industrialists, farmers, residents, banks, and insurers) who share a common interest in carrying out the necessary **adaptation work in their regions**. This recommendation stems from the observation that local economic stakeholders may have a strong interest in adapting not only their sites but also the regions they occupy through their activities: public-private partnerships could be considered when interests converge locally. The piloting of an adaptation fund in Guadeloupe could serve as an interesting example for addressing these local challenges. However, this financial innovation currently relies entirely on public funding.

LIST OF MEMBERS OF THE “FINANCING SOLUTIONS FOR THE ECOLOGICAL TRANSITION – ADAPTATION” WORKING GROUP AT THE IFD

IFD Coordinators: Vincent Burnand-Galpin, Lucie Pecqueur

ADEME

Stanislas Ray
François Boisleux
Romane Delevoie

AEMA Group

Dendo Azema

Afep

Nicolas Boquet

AFG

Ana Pires
Sarah Kalmouni

AMF

Camille Mauguy

Crédit Mutuel Arkéa

Maeva Bourel
Aurore Verrier
Frédéric Homo
Yvonne Baudet
Florian Labasque

Aspim

Anne-Laure Bouin

AXA

Benoît Galaud

AXA Climate

Ariane Kaploun
Stefano Bonelli
Nicolas Saint-Bris
François Lanevere

Bank of France

Augustin Lion-Atlan
Théophile Anquetin

BL Evolution

Eugénie Fraisse
Sylvain Boucherand
Jeanne Le Conte
Lucie Lambreth

Blunomy

Sébastien Guillo
Inès Galichon
Clément Leguyader
Louis Drapeau
Paul Gronner
Jeanne Mansoux

BNP Paribas

Ziaian Golnaz
Jeanne Aing
Simon Le Bacle
Guillaume Poupy
Binta Kante

BofA

Alice Thuillier

BPCE

Magali Schweitzer
Olivier Picard

BPCE Insurance

Laura Slomian

Bpifrance

Hélène Quillien
Kim Tworke

Caisse des Dépôts

Maria Scolan
Marguerite Culot
Virginie Vitiello
Laurence Roux
Andreia Delassus
Claire Abbamonte
Laetitia Verghaeghe
Michel-François Delannoy

Carbone 4

Morgane Leguen
Violaine Lepousez
Eloïse Meyer
Inès Delacombe

CCR

François-Xavier Hay
Valérie Quiniou

CDC Biodiversity

Valentine Noreve

CGDD

Tamara Gouel
Alix Dardennes
Anne-Cécile Pawlak
Eric Dodemand

CNP Insurance

Aurélia Smotriez
Paul Laguitton
Noureddine Aichour

European Commission

Magdalena Lewandowska
Martin Spolc

Covéa

Elena Canale
Alain Ourvoy

Crédit Agricole

Isabelle Lambert
Toufik Boudiaf

Crédit Agricole Insurance

Mathilde Auffret

Danone

Emmanuel Marchant
Grégoire Bonello

Deloitte

Martina Spriano

DGEC

Marie Carrega
Philippine Richer

Dom Finance

Hugo Priou
Vincent Priou

EDF

Elisabeth Bertin

Edmond de Rothschild

Eric de Tessieres

Engie

Agathe Van Den Broek

FBF

Sébastien Soleille
Aliénor Camp
Marthe Peyredieu du Charlat

France Assureurs

Clémence Heems

France Invest

Damien Brisemontier

Greenflex

Elise Bourmeau

I4CE

Vivian Depoues
Guillaume Dolques
Romain Hubert
Maxime Ledez

Independent

Michel Laviale

Louis Bachelier Institute

Stéphane Voisin
Lita Marret
Nestor Toroman
Timothée Quin

Kearney

Nicolas Lioliakis
Serge Imasdounian
Bertille Marchand

LBP

Pierre-Alix Binet
Skender Sahiti Manzoni
Virginie Vitiello

LBPAM

Julien Girault

MACIF

Christophe Picamilh
Anne-Sophie Musset

MEDEF

Mona Rivet
Nadezhda Dobrova

ORSE

Jean-Charles Fournol
Géraldine Fort

Spring of the Lands

Sylvain Goupille
Laurent Piermont

Proparco

Barbara Kong

SCOR

Elsa Blotière
Charlotte Leduc
Yun Wai Song
Alix Chabaud
Gulnaz Magazova

SGPE

Lea Boudet

Société Générale

Sandrine Enguehard
Thibaud Delplancke
Fatoumata Sambare
Aurélien Guillot

Director General of the Treasury

Xavier Coeln
Mathieu Marceau
Clément Roman
Mathieu Valdenaire
Agathe Veniez
Clarisse Hida

Veolia

Laetitia Ghander
Mathieu Tolian
Pierre-Yves Pouliquen

WWF

Caroline Sourzac Lami

LIST OF INTERVIEWS

INDUSTRIAL COMPANIES (INTERVIEWED IN COLLABORATION WITH ORSE)

Danone

Emmanuel Marchant
Grégoire Bonnello

EDF

Elisabeth Bertin
Alexandre Marty

ENGIE

Louise Fournon
Agathe Vandenbroek

La Poste

Anne-Sophie Cospin

Michelin

Francis Renault

SNCF

Anne Guerrero

Thales

Anne-Brigitte Spitzbarth
Philippe Tallendier

Veolia

Laetitia Ghander
Mathieu Tolian
Pierre-Yves Pouliquen

BANKS

Arkéa E&I Bank

Frédéric Homo
Yvonne Baudet

BPCE

Magali Schweitzer
Olivier Picard

Crédit Agricole

Toufik Boudiaf
Mathilde Auffret
Isabelle Lambert

La Banque Postale

Virginie Vitiello
Pierre-Alix Binet

Société Générale

Fatoumata Sambare
Thibaud Delplancke
Lucile Darlix

INSURERS

AXA

Benoît Galaup
Eugène Olivier

AXA Climate

Ariane Kaploun
Nicolas Saint-Bris
François Lavenere
Stefano Bonelli

AEMA Group

Dendo Azema
Jean-François Coppenolle
Anne Sophie Musset
Christophe Picamilh

BPCE Insurance

Laura Slomian
Jean-François Paganus

CNP Insurance

Aurélia Smotriez
Nouredine Aichour

INVESTMENT

Ardian

Laurent Fayollas
Amor Boufath
Simo Santavirta

Amundi

Perrine Theillard

Bernstein

Virgile Haddad

BNP Paribas

Guillaume Poupy

Rothschild & Co AM

Andrea Sekularac

Jefferies

Jacqueline Murdock

PROFESSIONAL ORGANIZATIONS

FBF

Sébastien Soleille
Aliénor Camp

France Assureurs

Christophe Delcamp
Anne-Sophie Roussel-Truffy
Clémence Heems
Philippe Taffin
Claire Berchatsky
Stéphane Pénét

AFC

Sarah Kalmouni
Ana Pires

Sustainable Real Estate Observatory

Juliette Daire

Chambers of Agriculture

Hélène Aussignac
Stefano Migliore
Garance Seistrunck
Juliette Boillet
Frédéric Ernou

LSEG

Lily Dai

MEDEF

Myriam Nicolas
Jean-Baptiste Baroni
Nadezhda Dobрева

Fransylva

Antoine D'Amecourt
Laurent de Berthier
Eric Toppan

PUBLIC SECTOR ACTORS

ADEME

François Boisieux
Stanislas Ray
Mathieu Garnerio
Thibault Limon

Loire-Bretagne Water Agency

Loïc Obled

Rhine-Meuse Water Agency

François Bigorre
Marina Pitrel
Pacal Vauthier
Guillaume Monaco
Katia Schmitzerber

French Development Agency

Serge Snrech
Catherine Simonet
Céline Boulay

AquaNova

Hervé Gaboriau
Didier Vallon

Bank of France

Augustin Lion-Atlan
Marie Delorme

Bpifrance

Kim Tworke
Helene Quillien

DG CLIMA – European Commission

Martin Spolc
Magdalena Lewandowska

DGE

Julia Nguyen

DGEC

Philippine Richer
Adeline Favrel

SGPE

Lea Boudet

DG Treasury

Mathieu Valdenaire
Agathe Veniez
Clarisse Hida

Strasbourg Eurometropolis & Climate Agency

Maxime Ammendolea
Claude Mammosser
Paul Macherel
Aymeric Noel
Mélanie Trommenschlager
Nathalie Leclerc

Banque des Territoires

Laurence Roux

Caisse des Dépôts

Marie Sclan
Marguerite Culot
Laetitia Verghaeghe
Michel-François Delannoy

CCR

Valérie Quiniou
Antoine Quantin
Nicolas Bauduceau
Olivier Bouc

EXPERTS, FIRMS, THINK TANKS, AND RESEARCH INSTITUTES

Blunomy

Inès Galichon

Breizh ALEC

Jeanne Grueau
Lucile Fauviaux

Carbon 4

Morgane Leguen
Violaine Lepousez
Eloïse Meyer
Inès Delacombe

I4CE

Vivian Depoues
Guillaume Dolques
Romain Hubert
Maxime Ledez

INRAE

Philippe Delacote

Independent expert

Karim Selouane

Hummingbirds

Alexandre Lépée

AgroParisTech Foundation

Margaux Morin

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INFORMATION ABOUT THE REPORT

Publication Director

Yves Perrier, President of the IFD

Authors

This document was written by the team at the IFD, Vincent Burnand, Deputy Director for Climate and Environment, and Lucie Pecqueur, Head of Biodiversity and Adaptation, with the support of Cécile Goubet, Executive Director, Nicolas Lancesseur, Director of Climate and Environment, and the teams at the consulting firm Kearney, including Serge Imasdounian, Bertille Marchand, Alice Lepore, and Nicolas Lioliakis.

FOR MORE INFORMATION

contact@ifd-paris.com

