

20.06.2025

Climate change adaptation and the financial system: a strategic challenge*

Physical risks and adaptation: a data-driven approach / Green Friday at the Banco de España

Madrid

Soledad Núñez

Deputy Governor

* English translation from the original in Spanish.

Welcome to the latest in the series of Green Fridays, a forum for debate and sharing knowledge and best practices, and a testament to the Banco de España's commitment to discussing and raising awareness about key issues like sustainability or climate change.

In this edition we have focused on how we can improve our analysis of the physical risks associated with climate change and how to adapt to this phenomenon. It is important that we view investing in climate change adaptation as complementary to investing in mitigation.

Decarbonising our economies on the established timelines will no doubt prove difficult, but recognising the importance of adaptation measures will help lessen the impact of extreme physical risks and reduce the costs of recovery. Moreover, adaptation usually brings significant socio-economic benefits, hence the importance of having a first-rate National Adaptation Plan such as that developed by the Spanish Climate Change Office.

For this reason, I would like to draw attention to how the Banco de España is contributing to the green transition and climate change adaptation through the management of its own investment portfolio which, as our Director General Operations, Markets and Payment Systems has pointed out, has incorporated sustainable and responsible investment principles since 2019. These principles are an integral part of the Banco de España's commitment to sustainability. Investment in green bonds has risen steadily, accounting for 5.4% of the total in 2024 (8.1% in portfolios denominated in euro and 4.0% in other currencies). These investments back projects with a positive environmental impact and contribute to the transition to a low-carbon economy.

Global climate change is happening much faster than expected and Spain is no exception. This country, with its diverse geography and climate, is witnessing an increase in the frequency and intensity of extreme weather events, requiring us to step up our mitigation and adaptation efforts.

We need to understand that analysing the physical risks is a crucial part of the debate, especially in a country like Spain, which is particularly vulnerable to extreme weather events such as flash floods. These events will become increasingly frequent and intense, and we must be fully prepared to adapt to them and better mitigate their effects.

In financial terms, according to a recent article published by the Banco de España,¹ the Valencia flash floods had a limited impact on financial stability, given that the credit exposures affected only accounted for a small proportion of the national total, and that mitigation measures were rolled out by the Government. That analysis was possible because we had access to multiple data sources to first identify which municipalities and districts had been affected by the disaster. Copernicus provided location data, with supplementary information being drawn from the Banco de España's Central Credit Register and the Cadastre (Ministry of Finance). This underlines the importance of having high-quality data sources to enable analysis, as discussed in today's second session, which focused on the use of data and the development of tools to better understand the physical risks and their implications.

¹ See Pérez Montes, Carlos, Javier García Villasur, Luis Gutiérrez de Rozas, Gabriel Jiménez, Nadia Lavín, Alexandra Matyunina and Raquel Vegas. (2025). "The impact of the autumn 2024 flash floods from a financial stability standpoint." *Financial Stability Review - Banco de España*, 48, Autumn.

With greenhouse gas emissions reaching record highs, communities, industries and nations are facing an increasingly urgent need to adapt to a changing environment. Floods, prolonged droughts, rising sea levels and extreme weather events are only some of the problems that we must address to protect nature, society and the economy. Investing in adaptation reduces future costs, generates economic and socio-economic benefits and promotes financial stability.

The financial sector also plays a key role in financing adaptation measures and creating a climate-resilient society. The Network for Greening the Financial System has already drawn attention to the need to step up investment in climate change adaptation,² which could have major implications for central banks, regulators and financial supervisors. The European Central Bank (ECB)³ has warned that the costs associated with the physical impact of climate change may pose significant financial risks. That said, only a quarter of climate-related catastrophe losses are insured, which means that investing in adaptation needs to be promoted to limit the exposure to climate-related risks.

The Banco de España has taken up this concern by opening an interesting debate here this morning.

Moreover, the Banco de España has contributed to the Spanish macroprudential authority's (AMCESFI) latest report on the impact of climate change on the financial sector. Chronic and acute physical effects of climate change have a negative impact on the value of certain assets and sources of income and directly and indirectly affect communities, businesses and the economy in general, giving rise to risks for the financial system as a whole. In addition, real estate sector assets account for a large portion of the balance sheets of Spanish financial institutions, exposing them to physical climate risks, for instance, where buildings are located in flood-prone areas.

Indeed, insurance companies are seeing an increase in the cost of claims and expect property values to drop in areas that are vulnerable to certain physical risks, which could ultimately affect the banking sector and institutional investors.

It is therefore reasonable to expect the financial sector to become involved in climate change adaptation, contributing to raising awareness among customers and developing solutions to finance adaptation measures and to support the insurability of climate risks.

Although the banking and insurance sectors have a leading role to play, it is also important for such measures to be established collectively, involving the general public, businesses, governments and other financial institutions. Collaboration is essential.

The Government has a key role to play in climate change adaptation, as the director of the Spanish Climate Change Office has explained today, when she set out the main lines of action of the National Climate Change Adaptation Plan for the next three years. In particular, the Government must guarantee clarity to mobilise private financing. This means defining a sound regulatory framework, a plan with clear priorities and transparent policies on climate

² See NGFS (2024). Conceptual Note on Adaptation, November.

³ See ECB (2023). Policy options to reduce the climate insurance protection gap. Discussion paper, April.

change adaptation, water and land management, flooding risks or rising sea levels, among other issues. In addition, it is essential that the necessary data and tools are provided to best manage this adaptation. Only then can we help businesses to properly estimate the climate-related risks and the costs and benefits of implementing their own adaptation measures.

The financial sector should start viewing the physical risks and adaptation measures as pivotal to improving climate and environmental risk management. Financial institutions must assess their exposure to climate risks and take preventive measures to reduce their vulnerability. Banks should look into how they can help their customers make use of existing measures to reduce climate-related risks. Financial institutions should promote instruments that support climate change adaptation, such as the inclusion of physical risks in their acceptance requirements, sustainability-linked loans and the creation of prevention incentives. In cases where preventive measures cannot be taken or some degree of vulnerability persists after such measures have been implemented, institutions should consider recovery strategies. But perhaps most importantly, as discussed in the previous session, there must be collaboration and cooperation between institutions.

To conclude, adapting to climate change is a matter of urgency. Collaboration between the financial sector, the Government and other actors is essential for implementing adaptation measures and reducing climate-related risks. In doing so, we can build a more resilient society and harness the opportunities that climate adaptation may bring.

I would like to thank you all again for attending Green Friday today. We will continue learning together at the next Green Transition Meeting to be held by the Banco de España in Zaragoza on 26 September, which will focus on “Technology, energy transition and environment.”