



BANCA D'ITALIA
EUROSISTEMA

Don't Stop Thinking About Tomorrow: Building Resilience to Climate Shocks Today¹

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Introduction

Ladies and Gentlemen,

It is a pleasure and an honour to open the Green Swan Conference 2026, jointly organized by the Bank for International Settlements (BIS), Bangko Sentral ng Pilipinas, Banca d'Italia, and the Network for Greening the Financial System (NGFS).

I would like to thank Governor Remolona and the Bangko Sentral ng Pilipinas for their generous hospitality.

This year's conference focuses on navigating climate risks amid uncertainty, and the topic could hardly be timelier.

When the first Green Swan Conference was held in 2021, climate change was already recognized as a major long-term risk. Since then, the evidence has become more compelling. What was once regarded mainly as a threat to future generations is already affecting economic and financial conditions.

Mitigation remains indispensable, but it cannot eliminate physical climate risk, and some climate-related damage is already unavoidable. This makes resilience increasingly important.

In a world of greater climate uncertainty, we need to understand risks better, share and absorb them more effectively, and invest more decisively in reducing exposure and vulnerability. These are the three issues I will focus on today.

¹ The title refers to the song 'Don't Stop', written by Christine McVie and performed by Fleetwood Mac. I wish to thank Enrico Bernardini, Alberto Felettigh, Fabrizio Ferriani and Luciano Lavecchia for their comments and contributions.

The economic case for strengthening resilience is clear. Climate change is reducing productivity, destroying physical capital and placing pressure on public finances. Extreme weather events caused more than USD 200 billion in direct damages in 2025, more than double the level recorded in the early 2000s.² Climate-related shocks can also affect inflation. Their effects can be particularly severe in emerging market and developing economies, where exposure is often greater and the capacity to absorb shocks is more limited.

Responsibility for climate policy rests first and foremost with governments. They have the democratic legitimacy and the instruments needed to guide the green transition, support adaptation and protect the most vulnerable. Climate policies must be economically viable, socially sustainable and institutionally credible. Overly rigid or frequently reversed policies can undermine public support and deter private investment.³

Central banks and supervisory authorities have a different but clearly defined responsibility. We need to understand how climate-related risks affect inflation, economic activity and financial stability, so that monetary policy, financial supervision and risk assessment remain effective.⁴ The challenge is not to expand our mandates. It is to fulfil our existing mandates in a changing environment.

1. Understanding climate risk

The first pillar of resilience is a better understanding of physical climate risk. Despite considerable progress, significant gaps remain in the availability, quality and comparability of climate-related data. Physical risks are highly localized and their impacts are often concentrated in specific periods, when extreme events trigger abrupt and disruptive damage. They also interact with economic and financial conditions in complex ways, while historical observations may become a less reliable guide as extreme events change in frequency and severity.

These features make climate risks difficult to identify, measure and price. Better information is therefore essential not only for assessing vulnerabilities, but also for directing capital and public resources towards the areas where adaptation is most needed.

Central banks and statistical authorities can contribute to this effort. The Irving Fisher Committee has long been working on climate-related data needs,⁵ and Banca d'Italia has been analysing data and methodologies to assess climate-related and environmental risks.⁶

² NGFS, 'NGFS Note on the economic and financial impacts of extreme weather events', May 2026.

³ F. Panetta, 'The heat is on: challenges and opportunities of the energy transition', opening remarks to G7-IEA conference on 'Ensuring an orderly energy transition', Rome, 16 September 2024.

⁴ E. Bernardini, I. Faiella, L. Lavecchia, A. Mistretta and F. Natoli, 'Banche centrali, rischi climatici e finanza sostenibile', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 608, 2021.

⁵ Irving Fisher Committee on Central Bank Statistics, 'Addressing climate change data needs: the central banks' contribution', BIS, IFC Bulletin, 63, March 2025; Irving Fisher Committee on Central Bank Statistics, 'Addressing climate change data needs: the central banks' contribution', BIS, IFC Bulletin, 63, March 2025.

⁶ L. Lavecchia et al., 'Data and methods to assess climate-related and environmental risks in Italy', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 732, 2022.

Measurement is only the first step. Climate risks must also be integrated into financial institutions' governance, internal controls and risk management. Many institutions have made progress, including in Italy⁷ and the euro area,⁸ but implementation remains uneven.

Climate risk should not be treated as a separate compliance exercise. It should be integrated into the assessment of credit, market, operational and insurance risks.

Technology can strengthen this process. Artificial intelligence can improve climate modelling, weather forecasting, early warning systems and the assessment of extreme event risks.⁹ These tools cannot replace reliable data, sound models or human judgement. However, if used carefully, they can improve our ability to anticipate shocks and identify vulnerabilities before risks materialize.

We cannot eliminate climate uncertainty, but we can improve our capacity to understand it and prepare for its effects.

2. Sharing and absorbing climate risk

Understanding risk is essential, but risks that cannot be prevented must also be shared and absorbed effectively.

A large part of the losses caused by natural catastrophes remains uninsured. This protection gap leaves households and firms exposed to severe financial distress and often forces governments to intervene after disasters, at considerable fiscal cost.

The consequences can spread well beyond those directly affected. Households may be unable to rebuild; firms may interrupt production or default; public finances may deteriorate precisely when resources are most urgently needed. The shock can then propagate to banks and the wider economy.¹⁰

Insurance is therefore a central component of climate resilience. Its role goes beyond compensating losses. When risks are properly assessed and priced, insurance can also encourage prevention by providing financial incentives to reduce exposure to natural hazards.

Expanding coverage is difficult. Households and firms may underestimate climate risks or consider insurance too expensive, and insurance markets remain underdeveloped in

⁷ Banca d'Italia, *Action plans for the integration of climate-related and environmental risks into LSI business processes: main findings and good practices*, 2025.

⁸ ECB, *Observations from the ECB's five year climate and nature risk programme (2020-25)*, May 2026.

⁹ C. Scotti, 'Digital and green: twice the transformation, twice the win?', closing remarks at the Conference on 'The macroeconomic and financial dimensions of the green transition', European University Institute, Fiesole, 28 June 2024; P.R. Lane, 'AI and the euro area economy', keynote speech at the ECB-SAFE-RCEA International Conference on the Climate-Macro-Finance Interface, Frankfurt, 23 March 2026; R. Ayadi, Y. Forouheshfar and O. Moghadas, 'Enhancing system resilience to climate change through artificial intelligence: a systematic literature review', *Frontiers in Climate*, 2025.

¹⁰ S. Ge, S. Johnson and N. Tzur-Ilan, 'Climate Risk, Insurance Premiums, and the Effects on Mortgage and Credit Outcomes', Federal Reserve Bank of Dallas, Working Paper, 2025.

some countries. At the same time, rising expected losses, insufficient data and modelling uncertainty can make some risks increasingly difficult to insure. Higher premiums may protect insurers' soundness, but can also place coverage beyond the reach of those who need it most.

Reducing the protection gap therefore requires a layered framework that combines private insurance, reinsurance, public backstops and capital-market instruments. Risks should be allocated to those best placed to bear them.

Private insurers can cover smaller and more frequent losses. Reinsurers can absorb larger and more diversified exposures. Public authorities can provide backstops for extreme events that exceed private market capacity, while preserving incentives for prevention.

This approach was developed during Italy's G7 Presidency in 2024 through the High-Level Framework for Public-Private Insurance Programmes against Natural Hazards, and was reaffirmed under this year's French G7 Presidency.¹¹

Capital markets can further broaden risk sharing. Insurance-linked securities, including catastrophe and disaster relief bonds, can transfer risks beyond the traditional insurance sector, attract additional capital and diversify exposures.

To reduce reliance on ex-post government assistance, Italy has recently introduced compulsory insurance against floods, earthquakes and landslides for firms outside the agricultural sector, supported by a public backstop.¹²

The design of these arrangements is crucial. Coverage must remain affordable, premia should reflect risk and public intervention must preserve incentives for risk mitigation. The objective is to prevent losses from falling entirely on those least able to bear them or from threatening the wider financial system.

3. Reducing climate risk

Better measurement and more effective risk-sharing can limit the consequences of climate shocks, but resilience ultimately requires reducing exposure and vulnerability before disasters occur.

This means investing in adaptation.

The need is particularly urgent in countries that combine high exposure to physical risks with limited fiscal space. These conditions can create a dangerous feedback loop: higher

¹¹ G7 Finance Ministers and Central Bank Governors' Meeting, 'High-Level Framework for Public-Private Insurance Programmes against Natural Hazards', G7 Finance Track, Stresa, 23-25 May 2024.

¹² Banca d'Italia, *Annual Report*, 2026; P. Angelini, 'Relazione sull'attività svolta dall'Istituto nell'anno 2025. Considerazioni del Presidente', Rome, 18 June 2026.

debt reduces the capacity to invest in resilient infrastructure and adaptation,¹³ while insufficient investment leaves economies more exposed to future shocks, which then place further pressure on public finances.¹⁴

Breaking this vicious circle between climate and debt requires earlier and more effective action. Adaptation is generally less costly than repeated reconstruction, and should be seen as an investment that reduces future economic losses and fiscal pressures.

Yet adaptation remains severely underfunded, especially in emerging market and developing economies.¹⁵ There is growing recognition of the need to scale up adaptation finance, but translating international commitments into concrete projects and financial flows remains difficult.¹⁶ A shortage of well-designed and investable projects, together with uncertain regulatory frameworks and weak institutional capacity can all deter private investment.

Mobilizing private capital therefore requires credible policies, clear incentives and an appropriate allocation of risks and returns between public and private actors.

Governments have a central role. They can invest in resilient infrastructure, improve planning and building standards, provide information on climate hazards and use public resources to attract private investment.

Multilateral development banks can support these efforts. Through guarantees, blended finance and other risk mitigation instruments, they can make adaptation projects more attractive to private investors and mobilize more capital than public financing alone.¹⁷

Adaptation is shifting too slowly from reactive disaster response to proactive risk management. Progress remains uneven, while the frequency and severity of extreme events continue to increase.¹⁸

¹³ Climate adaptation is the process of adjustment to actual or expected climate change and its effects, in order to moderate damage or exploit beneficial opportunities. Examples include building flood defences, developing drought-resistant crops, and improving irrigation efficiency and water storage capacity.

¹⁴ A. Dryden and U. Volz, 'Breaking the Debt-Climate Trap in Asia and the Pacific', in 'Asia Pathways. The blog of the Asian Development Bank Institute', 18 June 2026.

¹⁵ OECD, *Climate Finance Provided and Mobilised by Developed Countries in 2013-2024. Climate Finance and the USD 100 Billion Goal*, 2026; United Nations Environment Programme, *Adaptation Gap Report 2025. Running on empty. The world is gearing up for climate resilience – without the money to get there*, 2025.

¹⁶ J. Gabbatiss and M. Lempriere, 'Bonn climate talks: Key outcomes from the June 2026 UN climate conference', in 'Carbon Brief', 19 June 2026.

¹⁷ NGFS, 'Scaling Up Blended Finance for Climate Mitigation and Adaptation in Emerging Market and Developing Economies (EMDEs)', December 2023.

¹⁸ United Nations Office for Disaster Risk Reduction, *Global Assessment Report on Disaster Risk Reduction 2025: Resilience Pays: Financing and Investing for our Future*, Chapter 6 'Investing in resilience for economic stability', pp. 158-195.

Technology can strengthen adaptation through advanced forecasting, early warning systems, remote sensing and data-driven infrastructure management. Yet technological progress is not without costs: the expansion of data centres is increasing the demand for energy, water and critical raw materials.¹⁹ These pressures must be managed so that digital innovation strengthens resilience without creating economic and social vulnerabilities.

Adaptation cannot prevent every disaster, but it can determine whether climate shocks remain manageable or not, and whether public resources are used to prevent losses or become repeatedly absorbed by reconstruction.

Conclusions

Ladies and Gentlemen,

Climate change is creating profound uncertainty, which makes preparedness increasingly important.

Resilience depends on our ability to understand risks, share them more effectively and reduce exposure before shocks occur. These elements reinforce one another: better information improves the pricing and allocation of risk, better risk-sharing strengthens the capacity to recover from adverse events, and adaptation reduces the losses that ultimately need to be absorbed.

No single institution can achieve these objectives alone. Governments, financial intermediaries, insurers, businesses, multilateral development banks and central banks have distinct but complementary responsibilities.

International cooperation is equally essential. Climate shocks cross borders through trade, financial markets and supply chains, while the knowledge and solutions needed to strengthen resilience are often shared across countries.

The Green Swan Conference was created to foster this exchange among policymakers, academics and market participants. Today's discussions can help us improve our understanding of climate risks, share effective solutions and accelerate investment in resilience.

Our economies and financial systems need to be able to absorb climate shocks without allowing them to develop into broader economic and financial crises.

As the title of this address suggests, thinking about tomorrow means strengthening resilience today.

Thank you for your attention, and I wish you a productive and successful conference.

¹⁹ IEA, *Energy and AI*, 2025; F. Ferriani and A. Gazzani, 'Powering the digital economy: the global expansion of data centres and its energy implications', Banca d'Italia, *Questioni di Economia e Finanza* (Occasional Papers), 1014, 2026.

