

OECD Work on Climate Adaptation

Overview of OECD work in support of climate adaptation

Progress towards net zero greenhouse gas emissions by 2050 must go hand in hand with a concerted effort to strengthen the resilience of people, economies and ecosystems to the rapidly increasing impacts of climate change. Adaptation efforts help reduce current and future vulnerability and exposure to the impacts of climate change.

The OECD supports countries' efforts to deliver on national and international climate adaptation objectives, such as those established through the Paris Agreement, the Sendai Framework or the Sustainable Development Goals. It does so by translating the latest scientific insights into needs for policy action and provides evidence-based policy analysis to inform sound adaptation decisions. The OECD's work sheds light on evolving climate risks and their social, economic and environmental consequences. It identifies effective policy responses and appropriate adaptation finance mechanisms. It works with countries to help formulate adaptation targets and measure adaptation progress. This work has been facilitated by the OECD Task Force on Climate Change Adaptation, and most recently by the OECD Working Party on Climate Change, which provides a platform for countries to exchange experiences and share good practices.

“Adaptation is the process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects.”

(Intergovernmental Panel on Climate Change, 2018)



Understanding climate risks

Understanding climate risks is essential for determining priorities for adaptation action as well as for evaluating their effectiveness. This allows decision makers to establish a baseline against which objectives for climate risk reduction can be set and progress measured. The OECD's work brings together the latest policy-relevant insights from science on selected climate risks to

understand how climate change is changing the patterns in extreme events from coastal storms to droughts or wildfires. It sheds light on the past and projected social, economic and environmental consequences as a basis for determining the needs for policy, institutional and regulatory adjustments as well as the adaptation investments needed to address these rapidly evolving risks and uncertainties.

Climate risk assessments identify the likelihood of future climate hazards and their impacts on communities, economies and the natural environment

International Programme for Action of Climate (IPAC)

In 2021, the OECD created the International Programme for Action on Climate (IPAC). This programme is designed to offer participating countries a new steering instrument, complementary to and consistent with the UNFCCC and the Paris Agreement, to pursue progress towards the transition to the net-zero greenhouse gas emissions goal and a more resilient economy by mid-century, thanks to a precise evaluation of their action and the sharing of good practices.

IPAC leverages the OECD's quantitative working methods to develop evidence-based analysis and the sharing of good practices and results, building on existing data and indicators, policy tools, advice and guidance developed by the OECD family, including the International Energy Agency (IEA), the International Transport Forum (ITF) and the Nuclear Energy Agency (NEA).

Additional information can be found here: <https://www.oecd.org/climate-action/ipac/>.

OECD Recommendation on the Governance of Critical Risks

To help countries build resilience to the physical and economic impacts of extreme events and disasters, the OECDs Recommendation on the Governance of Critical Risks (2014) proposes actions that can be taken at all levels of government, in collaboration with the private sector to better assess, prevent, respond to and recover from the effects of extreme events, as well as to build resilience to and rebound from unanticipated events. The Recommendation calls on governments to identify and assess risks taking interlinkages into account, invest more in risk prevention, develop flexible capacities for preparedness, response and recovery and establish transparent and accountable risk management systems.

Additional information can be found here: <https://www.oecd.org/gov/risk/recommendation-on-governance-of-critical-risks.htm>.

Sea level rise-induced coastal flooding is projected to cause annual losses equivalent to 4% of global GDP by 2100

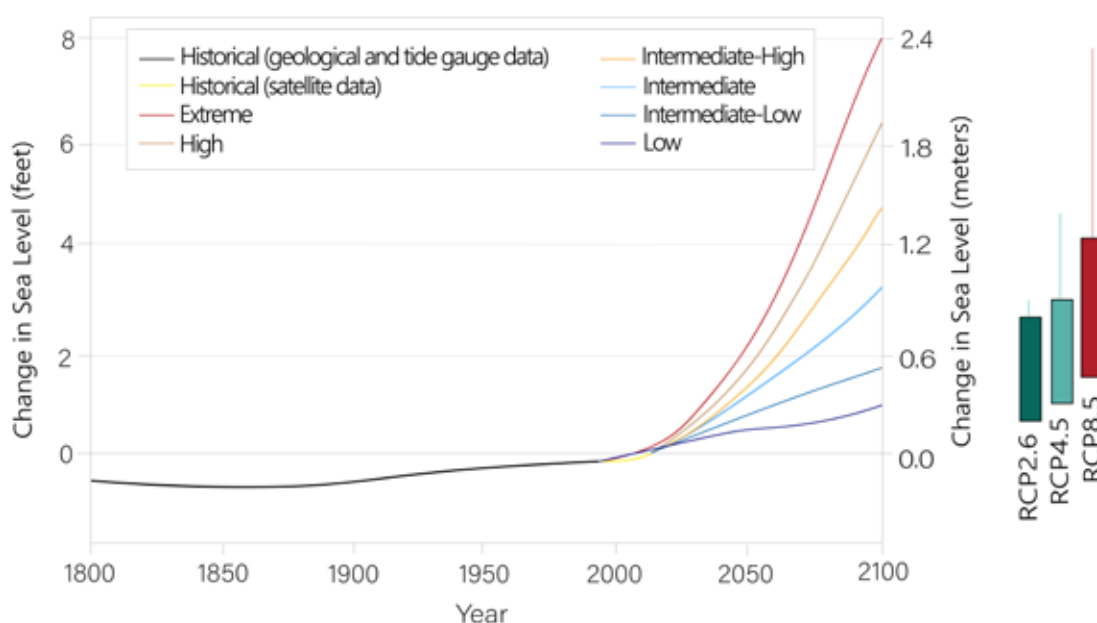
Sea level rise and coastal climate risks

Coastal areas are particularly vulnerable to the impacts of climate change. Coastal areas are home to 40% of the world's population and generate a considerable share of global economic output. For example, over 80% of globally traded goods rely on maritime freight transport. Climate-induced sea level rise will produce significant and to some extent existential threats to coastal communities, economies and ecosystems. The complex interactions between

the impacts of densely populated coast lines on fragile coastal ecosystems, and in return the threat posed by ecosystem degradation and climate change on coastal communities and livelihoods pose complex challenges that require adapted and co-ordinated policy responses.

Read more here: <https://www.oecd.org/ocean/topics/climate-change-ocean/>.

Sea level rise trends, 1800-2100



Note: RCP2.6 represents a scenario where greenhouse gas emissions are strongly mitigated, maintaining the increase in global temperatures within 2°C by 2100. RCP4.5 is considered an intermediate scenario, in which greenhouse gas emissions decline after reaching their peak in 2040. RCP8.5 represents a worst-case scenario, in which greenhouse gas emissions continue to rise throughout the 21st century.

Source: USGCRP (2018).

Adapting to extreme wildfire risk

The frequency and severity of extreme wildfires are on the rise in many regions of the world, fuelled by climate change as well as by environmental degradation and unsustainable land-use practices. The growing incidence of extreme wildfires has severe impacts on communities, economies and ecosystems and has increasingly showed the limits of traditional emergency response strategies in containing losses and damages. This highlights the need for countries to adapt to changing wildfire risk by strengthening preventive measures that can reduce or contain the risk and impacts of wildfires before these occur. OECD analysis supports countries in undertaking this fundamental shift, which requires governments to adapt their policy, institutional, regulatory and financial arrangements to tackle the wildfire challenge at its roots.

Learn more about the ongoing OECD work on wildfire risk and management here: <https://www.oecd.org/climate-change/wildfires/>

“Globally, area burned is projected to increase by 19% by 2050 compared to 2000, under a moderate-emission scenario.”

Taming Wildfires in the Context of Climate Change (OECD, 2023)

<https://doi.org/10.1787/dd00c367-en>





Policy responses to adapt to climate risks

OECD work aims to identify and stay abreast of innovative and effective policy responses that countries and specific sectors can adopt to effectively adapt to evolving climate risks. This includes work on specific policy measures, financing adaptation or measuring progress in the implementation of adaptation actions.

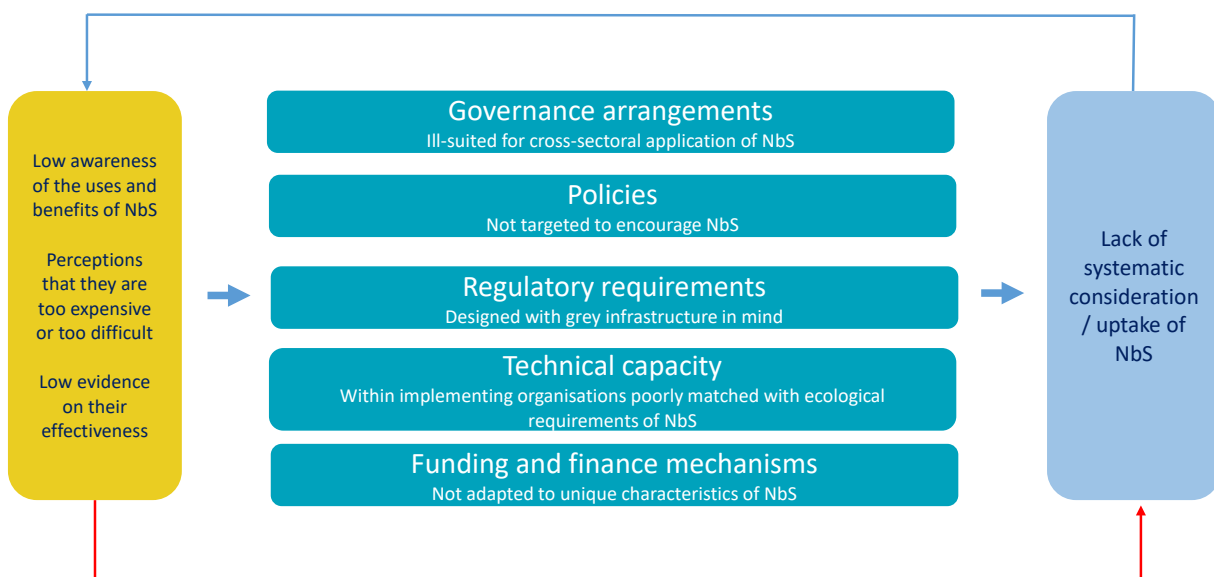
floods through increasing water retention, which is an ecosystem service. Nature-based Solutions (NbS) have been increasingly recognised for their potential in adapting to the current and future risks posed by climate change as they provide flexible and cost-effective ways to reduce vulnerability and exposure.

Nature-based solutions for climate resilience

Healthy ecosystems, and their associated services, can provide effective natural protection against climate-related risks. For example, floodplains and wetlands can protect communities from

OECD work shows that while the adaptation and multiple other co-benefits of NbS are widely recognised, their uptake remains piecemeal and often limited to one-off smaller scale projects. The OECD has therefore focused its work to support countries in establishing an enabling environment for NbS.

OECD policy evaluation framework for Nature-based Solutions



Legend: yellow box: factors that limit the consideration/uptake of NbS; light blue boxes: components of the policy evaluation framework that were found to limit NbS uptake; turquoise box: result.

Note: NbS: Nature-based Solutions.

Source: <https://www.oecd.org/climate-change/nbs/>.

Measuring progress in implementing national adaptation policies

To strengthen resilience to the impacts of climate change, OECD countries have made climate change adaptation a national priority, as illustrated by the wide adoption of national adaptation strategies (NAS) or plans (NAPs). Measuring progress in implementing these is critical to understanding how adaptation actions contribute to strengthening climate resilience, and whether they do so effectively.

OECD work has focused on helping countries to establish measurement frameworks that formulate realistic adaptation objectives and targets, identify data and indicators that can be used to measure them, and that define roles and responsibilities to carry out measurement tasks.

Additional information on adaptation measurement can be found here: <https://www.oecd.org/climate-change/adaptation-measurement/>.

Scaling up finance for climate adaptation

To achieve the Paris Agreement's goal of aligning finance flows with climate resilience, as well as the Glasgow Climate Pact that urges developed countries to double their collective adaptation finance to developing countries by 2025, it is essential to avoid investments that undermine climate resilience, while also encouraging patterns of finance and investment that actively contribute to societal resilience. Furthermore, maintaining the insurability of climate risks – and even enhancing the role of insurance markets in providing financial protection – will be critical for mitigating the economic impacts of a changing climate. To help countries in this endeavour, the OECD has developed a programme that aims to develop and operationalise a systemic framing of finance and investment for climate resilience.

Read more: <https://www.oecd.org/environment/climate-resilient-finance-and-investment-223ad3b9-en.htm>.

OECD Recommendation on Disaster Risk Financing Strategies (2017)

To further support countries in building financial resilience against and adapting to the impacts of climate change, the OECD has created the **OECD Recommendation on Disaster Risk Financing Strategies (2017)**, which provides guidance for governments on managing the financial impacts of disasters that will become increasingly important in the context of a changing climate.

Additional information can be found here: <https://www.oecd.org/daf/fin/insurance/OECD-Recommendation-Disaster-Risk-Financing-Strategies.pdf>.

Mainstreaming climate adaptation across government and sectors

Agriculture

Climate change puts pressure on land and water, creating a need for the agricultural sector to adapt and build resilience to climate risks and other hazards. Risk management strategies and tools can help farmers adapt to climate change and manage these current and future risks effectively. The OECD supports actors in the agricultural sector by providing them with guidance on how to develop effective policies that include a holistic approach to risk management and strengthen the enabling environment for investments that build resilience to risk by scaling up farmers' capacities to absorb, adapt and transform in response to weather, market or other shocks.

More information can be found here: <https://www.oecd.org/agriculture/topics/risk-management-and-resilience/>.

Infrastructure

Infrastructure networks are strongly affected by – but also play an important role in building resilience to – the impacts of climate-related risks. Decisions related to infrastructure, including the design, location, maintenance and operation play an important role in society's vulnerability and exposure to the impacts of climate change. As part of a broader OECD focus on quality infrastructure, the adaptation work of the OECD on climate resilient infrastructure has aimed at promoting the integration of resilience measures in the planning, design and operation of infrastructure networks across all sectors. The OECD has developed a framework that aims at enhancing the enabling environment for the development of climate-resilient infrastructure. In applying this, the OECD has supported countries seeking to enhance the climate resilience of infrastructure assets and networks.

More information can be found here: https://www.oecd-ilibrary.org/environment/climate-resilient-infrastructure_4fdf9eaf-en.

An OECD guidance for governments and development co-operation providers to navigate the information on approaches to strengthen climate resilience

ASPIRATIONS

- Country ownership
- Inclusive approaches
- Environmental & social sustainability

MECHANISMS

- Multi-level governance & policy cycles
- Sector-level approaches
- Financial management & instruments
- Monitoring evaluation & learning

ENABLERS

- Data & information
- Awareness & capacity
- Technologies

Source: <https://www.oecd.org/development/climate-resilience/>.



With the Sustainable Infrastructure Programme in Asia (SIPA), the OECD supports selected Central and Southeast Asian countries scale up energy, transport and industry infrastructure investments, and shift them towards infrastructure projects consistent with low-emission, resilient development pathways and the Sustainable Development Goals.

More information can be found here: <https://www.oecd.org/site/sipa/>.

Development Co-operation

Developing countries have been recognised to be disproportionately affected by the impacts of climate change. To help developing countries and countries that provide development finance with strengthening their resilience to climate change, the OECD has worked on several reports, such as the report on "Strengthening Climate Resilience", that aim to support partner country governments and development co-operation providers in planning and implementing actions related to climate resilience efforts.

The OECD also works directly with developing countries to support them in strengthening climate resilience and achieving energy, food and water security. For example, the OECD conducts economic and financial analysis of policy options and investment activities in Central Asian countries to facilitate political dialogues amongst them on climate adaptation and natural resource security.

More information can be found here:
<https://www.oecd.org/dac/environment-development/>.

Losses and damages from climate change

Climate change is driving fundamental changes to the planet with adverse impacts on human livelihoods and well-being, putting development gains at risk. The scale and extent of future risks for a given location is subject to uncertainties in predicting complex climate dynamics, as well as the impact of individual and societal decisions that determine future greenhouse gas emissions and patterns of socio-economic development and inequality. The OECD explores different approaches to reducing and managing losses and damages from climate change. The work looks at how key financial, policy and scientific issues are relevant to losses and damages, as well as how development co-operation providers are engaging in this space.

Learn more about current and future work on losses and damages by visiting the programme's website: <https://www.oecd.org/environment/cc/losses-and-damages/>.



Climate-related extreme weather events can occur simultaneously – such as heatwaves, droughts and wildfires. Their cascading impacts are difficult to predict, and increasingly challenging to manage

Biodiversity

Biodiversity, and the ecosystem services that are created by it, provide numerous invaluable benefits to human health and wellbeing, as well as economies. Although the Convention on Biological Diversity has long recognised the importance of biodiversity and the need to conserve and sustainably use it, global trends in biodiversity continue to decline. The OECD provides evidence-based analysis and good-practice insights to help countries develop robust policies that are environmentally effective, economically efficient and distributionally equitable.

Additional information on the OECD's work on biodiversity can be found here: <https://www.oecd.org/env/resources/biodiversity/>.



Water

Water risks can affect people's health and well-being, the environment and economies. The impacts of climate change are putting increasing stress on global water supplies, in terms of both quality and quantity. The OECD provides guidance for developed and developing countries on how to manage water in a way that contributes to resilience, sustainable

growth and development. OECD work focuses on water economics and governance, including analyses that help to improve the information base, identify good practices and provide a forum for exchanging country experiences.

More information about the OECD's work on water can be found here: <https://www.oecd.org/water/>.

OECD Council Recommendation on Water

To help countries in managing water quantity, improving water quality, managing water risks and disasters, ensuring good water governance and ensuring sustainable finance, investment and pricing for water and water services, the OECD has created the Council Recommendation on Water (2016). It recommends that Adherents set up and implement water policies that are adjusted to local conditions, manage water quantity through a combination of policies that manage demand for water, promote water use efficiency and allocate water where it is most needed and prevent and reduce and manage water pollution. The Recommendation emphasises that these actions can help to accomplish many objectives, including the management of water-related risks and adapting to the impacts of climate change.



Building climate and economic resilience in the transition to a low-carbon economy

Resilience comprises the ability of systems to variously resist, absorb, recover from and adapt to shocks. In the case of climate change, reducing the severity of shocks – by rapidly decreasing greenhouse gas emissions – is a clear prerequisite for improving overall systemic resilience. Drawing on expertise from across the OECD, this horizontal project aims to reframe the climate challenge for the pandemic-affected world and will deliver a practical policy toolkit for an integrated approach to strengthening climate and economic resilience. The project covers both a resilient transition to net-zero emissions – including a focus on ensuring fiscal sustainability and macroeconomic stability – and adapting and building resilience to the impacts of climate change.

More information can be found here: <https://www.oecd.org/climate-change/net-zero-resilience/>.

Adaptation-mitigation linkages

Strengthening linkages between climate change adaptation and mitigation policies can improve the efficiency and effectiveness of actions in support of a low-carbon, climate-resilient economic development. The OECD's work has focused on identifying linkages, shedding light on the synergies that can be achieved as well as the trade-offs that could arise between the two policy agendas, but also across other environmental or social policy objectives. It has aimed at inspiring reflections of fostering linkages.

Read more: https://www.oecd-ilibrary.org/environment/strengthening-adaptation-mitigation-linkages-for-a-low-carbon-climate-resilient-future_6d79ff6a-en.

“By restoring degraded ecosystems and effectively and equitably conserving 30 - 50% of Earth's land, freshwater and ocean habitats, society can benefit from nature's capacity to absorb and store carbon.”

(IPCC WGII 2022)





Tailoring adaptation to local contexts

Cities

Cities and regions have a critical role in building resilience to the impacts of climate change, particularly as these impacts are often felt at the local level. The OECD supports cities, regions and countries in creating climate action plans and strategies, as well as policy instruments.

The Territorial Approach to Climate Action and Resilience (TACAR) programme focuses on localised reporting and monitoring of climate change, developing location-specific recommendations and organising dialogue and knowledge sharing. More information on this programme can be found here: <https://www.oecd.org/regional/cities/tacar.htm>.



Mountainous areas

Mountainous areas are at the forefront of climate change and are increasingly at risk from climate-related hazards. The OECD's work includes guidance on how governments and development co-operation providers can strengthen the climate resilience of mountain communities and ecosystems, particularly in developing countries.



In western North America, South American Andes, the European Alps and High Mountain Asia, warming over recent decades has outpaced the global warming rate, at an average rate of 0.3°C as opposed to $0.2 \pm 0.1^{\circ}\text{C}$ per decade.

Find out more in: Kato, T., M. Rambali and V. Blanco-Gonzalez (2021), "Strengthening climate resilience in mountainous areas", OECD Development Co-operation Working Papers, No. 104, OECD Publishing, Paris, <https://doi.org/10.1787/1af319f0-en>.



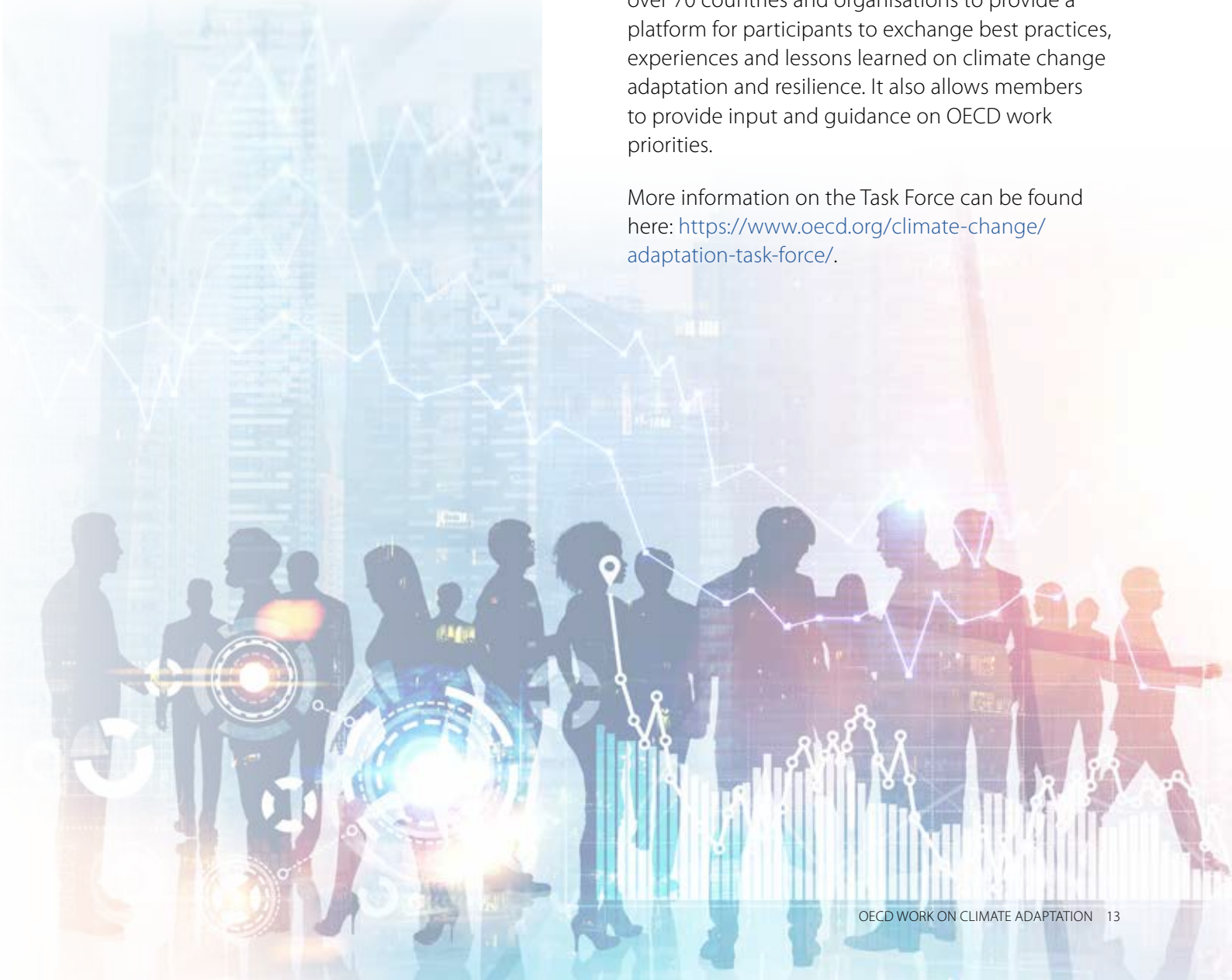
Engaging with countries

The OECD engages directly with delegates from OECD and non-OECD countries, as well as with experts from other organisations, with the objective to inform, inspire and support the development and implementation of climate adaptation policies.

The OECD Task Force on Climate Change Adaptation

Created in 2019, the OECD Task Force on Climate Change Adaptation (TFCCA) brings together over 70 countries and organisations to provide a platform for participants to exchange best practices, experiences and lessons learned on climate change adaptation and resilience. It also allows members to provide input and guidance on OECD work priorities.

More information on the Task Force can be found here: <https://www.oecd.org/climate-change/adaptation-task-force/>.



Key OECD publications

- Adaptation measurement: Assessing municipal climate risks to inform adaptation policy in the Slovak Republic (2023): <https://doi.org/10.1787/dad34bb3-en>.
- Climate-resilient finance and investment (2023): <https://doi.org/10.1787/223ad3b9-en>.
- Developing an Integrated Approach to Green Infrastructure in Italy (2023): <https://doi.org/10.1787/d84bb8e4-en>.
- Enhancing the insurance sector's contribution to climate adaptation (2023): <https://doi.org/10.1787/0951dfcd-en>.
- Net Zero+Climate and Economic Resilience in a Changing World (2023): <https://doi.org/10.1787/da477dda-en>.
- OECD Environmental Performance Reviews: Germany (2023): <https://doi.org/10.1787/f26da7da-en>.
- Taming Wildfires in the Context of Climate Change (2023): <https://doi.org/10.1787/dd00c367-en>.
- Taming Wildfires in the context of climate change: The case of Portugal (2023): <https://doi.org/10.1787/859bb47a-en>.
- Building Financial Resilience to Climate Impacts (2022): <https://doi.org/10.1787/9e2e1412-en>.
- Adapting to a changing climate in the management of coastal zones (2021): <https://doi.org/10.1787/b21083c5-en>.
- Building Agricultural Resilience to Natural Hazard-induced Disasters, (2021): <https://doi.org/10.1787/49eefd7-en>.
- Building resilience: New strategies for strengthening infrastructure resilience and maintenance (2021): <https://doi.org/10.1787/354aa2aa-en>.
- Climate Finance Provided and Mobilised by Developed Countries: Aggregate Trends Updated with 2019 Data (2021): <https://doi.org/10.1787/03590fb7-en>.
- Energy-water-land use nexus in Central Asia (2021): https://issuu.com/oecd.publishing/docs/nexus_project_summaryfull-final.
- Enhancing Financial Protection Against Catastrophe Risks: The Role of Catastrophe Risk Insurance Programmes (2021): <https://www.oecd.org/daf/fin/insurance/enhancing-financial-protection-against-catastrophe-risks.htm>.
- Financial Management of Catastrophe Risks: Approaches to Building Financial Resilience (2021): <https://www.oecd.org/daf/fin/insurance/financial-management-of-catastrophe-risks-approaches-to-building-financial-resilience.htm>.
- Lessons from engaging with the private sector to strengthen climate resilience (2021): <https://www.oecd.org/dac/lessons-on-engaging-with-the-private-sector-to-strengthen-climate-resilience-in-guatemala-the-philippines-and-senegal-09b46b3f-en.htm>.
- Managing Climate Risks, Facing up to Losses and Damages (2021): <https://doi.org/10.1787/55ea1cc9-en>.
- Measuring progress in agricultural water management: Challenges and practical options (2021): <https://doi.org/10.1787/52b4db7e-en>.
- Monitoring, evaluation and learning for climate risk management (2021): <https://doi.org/10.1787/58665de0-en>.
- OECD Implementation Handbook for Quality Infrastructure Investment (2021): <https://www.oecd.org/finance/oecd-implementation-handbook-for-quality-infrastructure-investment.htm>.
- Scaling up Nature-based Solutions to Tackle Water-related Climate Risks (2021): <https://doi.org/10.1787/736638c8-en>.
- Strengthening adaptation-mitigation linkages for a low-carbon, climate-resilient future (2021): <https://doi.org/10.1787/6d79ff6a-en..>
- Strengthening Climate Resilience: Guidance for Governments and Development Co-operation (2021): <https://doi.org/10.1787/4b08b7be-en>.
- Strengthening climate resilience in mountainous areas (2021): <https://www.oecd.org/dac/strengthening-climate-resilience-in-mountainous-areas-1af319f0-en.htm>.
- Common Ground between the Paris Agreement and the Sendai Framework (2020): <https://doi.org/10.1787/3edc8d09-en>. Additional case studies are available on: <https://www.oecd.org/development/climate-resilience/>.
- Nature-based solutions for adapting to water-related climate risks (2020): <https://doi.org/10.1787/2257873d-en>.
- OECD Compendium of Policy Good Practices for Quality Infrastructure Investment (2020): <https://www.oecd.org/finance/oecd-compendium-of-policy-good-practices-for-quality-infrastructure-investment.htm>.
- Strengthening Agricultural Resilience in the Face of Multiple Risks (2020): <https://doi.org/10.1787/2250453e-en>.
- Responding to Rising Seas (2019): <https://doi.org/10.1787/9789264312487-en>.
- Climate-resilient infrastructure (2018): <https://doi.org/10.1787/4fdf9eaf-en>.
- OECD Recommendation on Disaster Risk Financing Strategies (2017): <https://www.oecd.org/finance/oecd-recommendation-disaster-risk-financing-strategies.htm>.
- OECD Recommendation on Water (2016): <https://www.oecd.org/environment/resources/Council-Recommendation-on-water.pdf>.
- OECD Recommendation on the Governance of Critical Risks (2014): <https://www.oecd.org/gov/risk/recommendation-on-governance-of-critical-risks.htm>.

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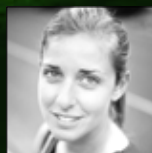
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