



Sendai Framework for Disaster Risk Reduction

Midterm Review 2023 -
Working towards the achievement
of the Sendai priorities and targets

EUROPEAN COMMISSION

Directorate-General for Civil Protection and Humanitarian Aid Operations



Foreword by the European Commissioner for Crisis Management, Janez Lenarčič

2023 marks the halfway point of the Sendai Framework for Disaster Risk Reduction 2015-2030. It is an important time to reflect on how far we have come towards achieving its goals – and how far we still have to go.

In 2015, the EU Civil Protection Mechanism was activated just 19 times in response to crises. Last year, it was activated over 230 times. That is an increase of over one thousand percent in just seven years.

The world is getting more dangerous. Today we face an increasing number of cascading, cross-sectoral and systemic risks. Dangers that seemed distant in 2015 now pose real threats to our society.

In the face of this new reality Europe is working hard to meet the goals set by Framework, making them an integral, cross-sector element of our policy making.

This report, released to mark the Midterm Review at the UN in New York, presents some of the EU's key initiatives on the road to strengthening global preparedness, reducing risk and building resilience. Including the European Green Deal, the new EU Strategy on Adaptation to Climate Change and the European Disaster Resilience Goals.

These efforts align with wider global plans to create a fairer, greener future, such as the 2030 Agenda for Sustainable Development and the Paris Agreement on Climate Change.

It is crucial that we take this moment to recommit ourselves to our collective task. A global framework requires a global effort. Together we must step up our work, matching increased dangers with increased funding and action to keep people safe.

I am grateful for the fruitful collaboration with EU Member States, third countries, partners, and other stakeholders for the progress achieved so far.

2030 is only a few years away. We must continue to work together to make sure that the next decade marks a safer, more resilient world. Our future relies on it.

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1. Introduction

In 2015, the Member States of the United Nations (UN) gathered in Sendai, Japan, to stress their continuous commitment to decrease the number of losses of life and assets through disasters and adopted the Sendai Framework for Disaster Risk Reduction 2015-2030.

The Framework laid down the foundation of a historic shift at global level from *disaster management to disaster risk management*. Its overall objective is to prevent new, and reduce existing disaster risk, to increase preparedness for response and recovery, and to strengthen resilience. To achieve this, the Framework establishes priorities and targets to reduce disaster risks. It also underlines that actions should be based on an all-of-society and all-hazard risk approach across economic, social, and environmental policy areas.

In 2020, the General Assembly decided to hold a **Midterm Review of the implementation of the Sendai Framework in 2023**¹ to assess progress towards the achievement of the Framework's outcome, goals, and global targets by 2030.

At the occasion of the Midterm Review, the objective of this document is twofold:

- To provide a non-exhaustive overview of key initiatives taken at EU level that have contributed to the four priorities and three (out of seven) targets of the Framework. As regards the targets, this document focuses on the qualitative targets that do not rely on data that would need to be provided by Member States.
- To reiterate the EU's commitment to contribute to the achievement, by 2030, of the goals and targets of the Framework.

2. Retrospective review

Since the adoption of the Sendai Framework in 2015, the world has been confronted by multiple, simultaneous challenges and threats whose effects have cascaded across sectors and geography. As recovery from the outbreak of the Covid-19 pandemic continues, a war is raging at the Eastern border of the EU and its consequences are being felt in many parts of the world. The war is causing immense human suffering, has aggravated existing fragilities, for example through the disruption of supply chains and has tightened energy and food insecurity. At the same time, the impact of climate change is increasingly apparent in citizens' lives and further exacerbates vulnerability to crises. Droughts, heatwaves, wildfires and floods, coupled with environmental degradation, biodiversity, pollution, and deforestation are claiming lives, and causing significant economic losses. Against the backdrop of this rapidly changing risk landscape, investing in the prevention of new risk, reducing existing risk and reinforcing resilience is more needed than ever before.

The EU has adopted important initiatives that directly or indirectly support the priorities and targets of the Sendai Framework for Disaster Risk Reduction.

The EU has also played an active advocate role, by participating in the European Forum for Disaster Risk Reduction that took place in November 2021 in Matosinhos, Portugal as well as in the Global Platform for Disaster Risk Reduction in May 2022 in Bali, Indonesia. These Forums were key to galvanising international action on the Sendai Framework, while sharing best practices and solutions.

Building on the “[Action Plan on the Sendai Framework for Disaster Risk Reduction 2015-2030 - A disaster risk-informed approach for all EU policies](#)”², the EU has made a shift from disaster management to disaster risk management across EU policies.

The [European Green Deal](#)³, adopted by the European Commission in December 2019, set the blueprint for a transformational change that aims at making Europe the first climate neutral continent in the world. Objectives that are especially relevant for the priorities and targets of the Sendai Framework include working with nature to protect our planet and health; boosting global climate action; investing in the renovation of buildings for greener lifestyles; and investment in cutting-edge clean technological innovation.

The European Green Deal is the umbrella for many new initiatives and strategies that are highly relevant for disaster risk reduction, for example the [EU Biodiversity Strategy](#)⁴ for 2030 that promotes, among others, nature-based solutions to increase resilience to climate risk, the [Farm-to-Fork Strategy](#)⁵ to make food systems fair, healthy, and environmentally-friendly, and the [EU Forest Strategy](#)⁶ for 2030 to strengthen the protection, restoration, and resilience of forests, for which researchers urge action to curb current trends⁷.

[NextGenerationEU](#)⁸ was adopted in 2020 and will run from 2021-2026. It is the EU's EUR 800 billion temporary recovery instrument to support the economic recovery from the COVID19 pandemic. NextGenerationEU supports, for example, actions to improve water quality in rivers and seas, reduce waste and plastic litter, plant billions of trees, increase the use of renewable energy, and make farming more environmentally-friendly.

In February 2021, the Commission adopted its new [EU strategy on adaptation to climate change](#)⁹. The strategy sets out how the EU can adapt to the unavoidable impacts of climate change and become climate resilient by 2050. It has four principal objectives: to make adaptation smarter, swifter, more systemic, and to step up international action on adaptation to climate change. It highlights that investing in resilient, climate-proof infrastructure pays off and that the Commission will strengthen the synergies between climate adaptation action and the work on disaster risk prevention and management.

To strengthen the resilience of entities operating critical infrastructure the [Directive on the Resilience of Critical Entities \(CER Directive\) entered into force on 16 January 2023](#)¹⁰. The new rules foresee additional measures and closer cooperation to take account of the fact that critical entities are becoming more interconnected and interdependent and therefore also more vulnerable in case of an incident.

In February 2023 the Commission adopted the [Communication “European Union Disaster Resilience Goals: Acting together to deal with future emergencies”](#)¹¹ together with a Commission Recommendation¹². The disaster resilience goals set out five strategic areas where EU Member States and the Commission need to work together to increase Europe’s overall resilience.

These are examples of key policy initiatives that underpin the EU's action in the areas covered by the Sendai Framework's priorities and targets.

3. SENDAI PRIORITIES

To prevent new and reduce existing risk, the Sendai Framework priorities for action focus on understanding disaster risk, strengthening disaster risk governance, investing in disaster risk reduction for resilience, and enhancing disaster preparedness.

The sections below presents some key initiatives taken at EU level, which fall within the scope of these priorities.

3.1. Sendai priority 1: Understanding disaster risk

Disaster risk management needs to be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics, and the environment. In 2020, the European Commission released an [Overview of natural and man-made disaster risks the European Union may face](#)¹³. The aim of the overview was to capture the trends in the ever-evolving disaster risk landscape, discuss the major drivers shaping it, and assess the implications of developments in disaster risks for risk management.

To further increase the understanding of risk, the European Commission has also supported the development of specific tools and fora to allow exchanges between practitioners and scientists such as the following:

The open-source [Index for Risk Management \(INFORM\)](#)¹⁴ combines several datasets to support decision-making on humanitarian crises and disasters at different stages of the disaster risk management cycle.

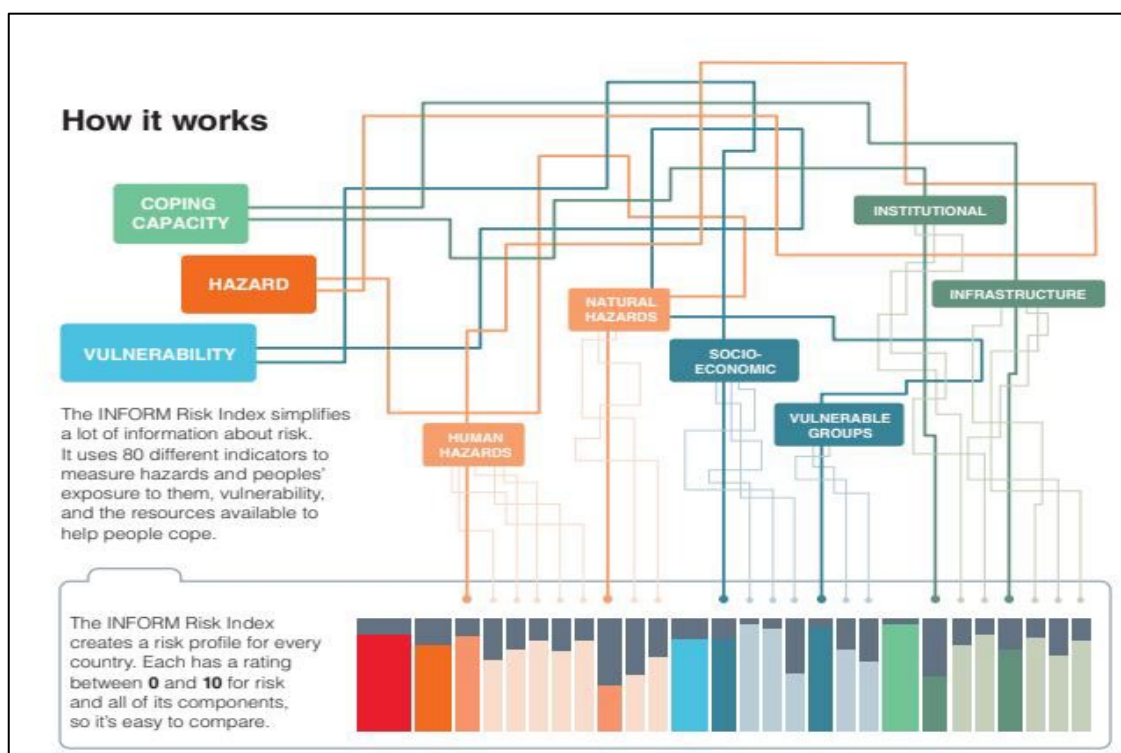


Figure 1: Components of risks covered by the INFORM Risk Index

Source: <https://drmkc.jrc.ec.europa.eu/inform-index/> INFORM report 2022

The [Group on Earth Observation \(GEO\)](#)¹⁵, supported with EUR 1.2 million annually by the European Commission, uses earth observation to create disaster loss data for disaster risk reduction strategies and for reporting on the [Sendai Monitor Global Indicators](#)¹⁶.

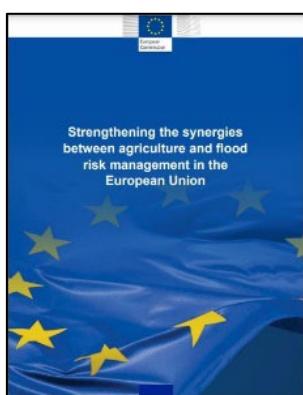
To enable more interaction between researchers and policy-makers in the EU and beyond, the European Commission launched in 2015 the [Disaster Risk Management Knowledge Centre](#)¹⁷. The Centre translates complex scientific data into usable information and advice for policy-making. It also helps the European Commission and Member States to identify research and innovation gaps and provides scientific advice to Member States.

The [Community of European Research and Innovation for Security](#) (CERIS)¹⁸. It gathers a wide community of policymakers, researchers, practitioners, SME/industry, and civil society representatives to exchange information about EU-funded project outputs and inform Member States and Third Countries about available tools, methods and technologies, including in the area of Disaster Risk Management.

The European Commission has also adopted specific sectoral pieces of legislation, contributed to the development of tools, methodologies, guidance documents, and supported science and research that contribute to the understanding of risk in the EU and globally. Amongst these, feature the following:

a) Understanding Flood risk

Floods are the most frequent and costly natural disasters in Europe¹⁹. In order to improve **flood risk management**, the EU adopted in 2007 the Floods Directive²⁰. It establishes a framework for the **assessment and management** of flood risks to reduce the negative consequences of flooding on human health, economic activities, the environment, and cultural heritage in the EU. The devastating floods that hit several European countries in July 2021 are a stark reminder that extreme weather events claim lives, damage homes, and cause significant economic losses. Since the adoption of the legislation, several reference documents on flood risk management have been published, such as [‘Strengthening the synergies between agriculture and flood risk management’](#)²¹, [‘Current practice in flood risk management’](#)²² and the [‘Impact of climate change on floods’](#)²³.



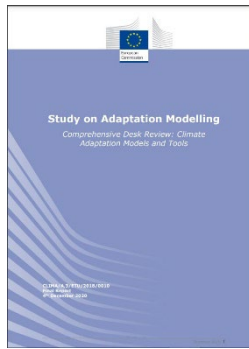
b) Understanding Drought risk

In 2022, drought affected nearly two thirds of the EU territory²⁴. The [European Drought Observatory for Resilience and Adaptation](#) (EDORA) project²⁵ aims at strengthening the **European Drought Observatory** (EDO), by enhancing drought risk assessment and fostering connections and establishment of drought observatories in the EU Member States. These actions will enhance the resilience and adaptation to drought across the EU, by offering a common core of operational data and knowledge about droughts. The main outputs will include a **drought impact database** (structured information on drought impacts over the last 40 years across the EU), and a **drought risk atlas**, identifying the current baseline of drought risks as well as future risks under different climate change scenarios.



c) Understanding General Climate Change Risk

Climate risks can be a threat multiplier for state instability and social disruption in vulnerable societies. The EU is committed to developing a better understanding of the complexity of the **interplay between climate change, environmental degradation, and peace and stability**. One of the tools developed to this effect is the [Global Conflict Risk Index](#)²⁶. The Index provides an accessible, objective, and open-source evidence base to support the EU's conflict prevention capacities and decision-making on long-term



conflict risks. The output of the Index serves as the quantitative input to the EU conflict early warning framework for identifying countries at high risk of conflict and those whose risk is worsening significantly.

A key focus of the new **EU strategy on adaptation to climate change** is closing the knowledge gap. The strategy produced, for example, a [study on climate adaptation modelling, risk assessment, and management tools](#)²⁷, which contribute to the climate-related risk and losses database of the [Risk Data Hub](#)²⁸.

The Risk Data Hub was established in 2017 as a platform to harmonise data recording and collection from EU Member States related to disaster risk management in order to improve the understanding of risk.

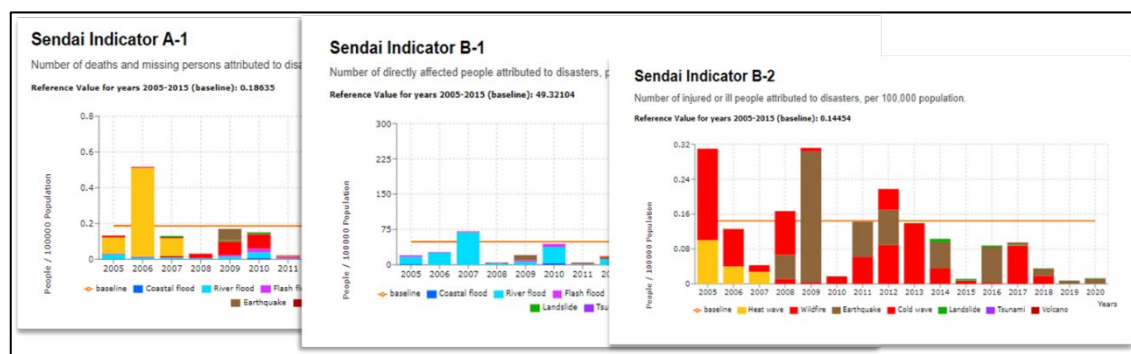


Figure 2: Risk Data Hub: Example of disaster loss data aggregated as Sendai indicators

The [EU Mission on Adaptation to Climate Change](#)²⁹ contributes to putting the [EU's Adaptation Strategy](#)³⁰ in practice by supporting regions, cities, and local authorities in their efforts to build resilience against the impacts of climate change. The Mission looks into various topics, for example climate change risks related to critical infrastructure, land use and food systems, water management, or health and wellbeing. It started in September 2021 and has provided EUR 370 million of funding for research projects. So far, over 300 regional and local authorities from 25 EU countries, with 17 more parties coming from countries associated or potentially associated with Horizon Europe, have confirmed their willingness to join this action and mobilise resources to better understand the risks their regions will be facing by 2030. These research efforts are complemented by actions under the [Civil Security for Society](#)³¹ programme, leading to the development of tools and technologies to anticipate risks related to extreme weather events. An example for this is a European multi-hazard platform providing a better identification of expected weather-induced impacts and their location in time and space before they occur³².

Since 2017, the Copernicus Climate Change Service publishes the [European State of the Climate \(ESOTC\) annual report](#)³³. The report provides a detailed analysis of the past calendar year, with descriptions of climate conditions and events, and explores the associated variations in key climate variables. The ESOTC also gives updates on the long-term trends of key climate indicators.

In December 2021, the Commission kicked off [Destination Earth \(DestinE\)](#)³⁴. It will provide unique digital capabilities to model the Earth system at very high levels of precision and build user-defined scenarios to enhance the EU's ability to monitor and model environmental changes, predict extreme events, and adapt EU actions and policies

to climate change-related challenges. It will provide a user-friendly simulation environment combining data from physical systems (e.g. rainfall and temperature measurements) with those of socio-economic impact systems (food production, health systems, energy availability, etc.). Public authorities will be enabled to develop and run user-defined ‘what-if scenarios’ to visualise global futures under different framing assumptions and detect systemic weaknesses and cliff edge effects, based on an integration of the huge amounts of Earth system data and models with the new EU supercomputing capacities. The first demonstration should be available in mid-2024.



To foster a better understanding of climate risks and help to bridge the gap between science and policymaking, the European Commission jointly with the European Environment Agency (EEA) initiated the preparation of the first [European Climate Risk Assessment](#)³⁵ in May 2022. It will analyse current and future climate change impacts and risks relating to the environment, the economy, and wider society in the European Union. This first Risk Assessment also seeks to cover complex climate risks such as cross-border, cascading, and compound risks.

The European Commission also supports [Adaptation Without Borders](#)³⁶, a global **partnership of researchers** and experts from four continents, who work together on research and policy interface for more effective management of cross-border risks and cascading climate risks. Adaptation Without Borders has launched a report on Transboundary Climate Risks in April 2023.

d) Understanding the Impact of Disaster risk on Cultural Heritage

The Sendai Framework specifically highlights the need to protect historical sites, cultural heritage, and sites of religious interest against the impacts of disasters³⁷. These sites, as any other structures, are exposed to the impacts of natural and human-induced disasters, which threaten their existence or cause damage. The loss or deterioration of these outstanding sites have negative impacts on local and national communities, both because of their cultural importance, and because of their socio-economic value.

In May 2020, the Council of the European Union adopted [conclusions on risk management in the area of cultural heritage](#)³⁸. It called on Member States to, among others, integrate cultural heritage into disaster risk policies and management plans at the local, regional, national, and EU levels. It also called on Member States and the European Commission to raise awareness of and mobilise existing financial and logistical resources for matters related to the safeguarding of endangered heritage. A study³⁹ providing an overview of information available at EU and international level on [risk assessment and prevention to safeguard cultural heritage](#) from natural and man-triggered disasters was published in 2018. The protection of cultural heritage against natural disasters and climate change was also included in the [European Framework for Action on Cultural Heritage](#)⁴⁰ adopted in 2018. Furthermore, the report “[Strengthening cultural heritage resilience for climate change](#)”⁴¹ presents 83 best practice examples from 26 countries that demonstrate the impact of climate change on cultural heritage and how cultural heritage could support climate change mitigation. Finally, “Climate action through culture” and “Safeguarding heritage against natural and man-made disasters” are among

actions outlined in the [EU Work Plan for Culture 2023 – 2026](#)⁴², which pays great attention to these important topics.



e) Understanding Health risk

With a budget of EUR 5.3 billion, the [EU4Health](#) Programme⁴³ is the fourth and largest of the EU health programmes since their launch in 2003. It was adopted in 2021 to strengthen the resilience of EU health systems and promote innovation in the health sector. EU4Health will also make a significant contribution to the post-COVID-19 recovery. It complements the policies of EU Member States, for example in disease prevention, prevention, preparedness, and response to cross-border health threats, and stockpiling of essential crisis-relevant products.

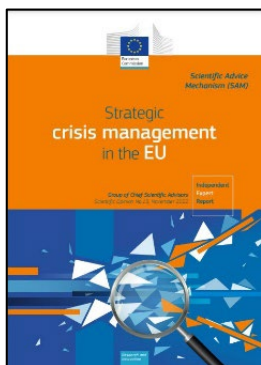
Example: Joint Action [SHARP](#)⁴⁴ - Strengthened International Health Regulations & Preparedness in the EU

SHARP Joint Action (2019 – March 2023) is co-funded by the EU4Health Programme of the European Union (80%) and by contributions (20%) from partners in 30 countries. SHARP works to identify and address gaps in the capacity to prevent, detect, and respond to biological, chemical, and environmental threats to human health. It aims at strengthening the resilience and response capacities of health systems. It will support coherence and interoperability for preparedness and response planning to health threats. This will be done, for example, through strengthening the scientific evidence base to prevent and respond to cross-border health threats, exchanging information, and sharing of best practices within and among Member States; as well as through the development of procedures, business continuity plans, and promotion of interoperability of national preparedness planning.

f) Improving Crisis Management through Knowledge

In 2021, the European Commission launched the [Union Civil Protection Knowledge Network](#)⁴⁵ to strengthen the efficiency and effectiveness of civil protection training and exercises, to promote innovation and dialogue, and to enhance cooperation between Member States' national civil protection authorities.

In a context of increasingly complex and interconnected crises, the **Scientific Advice Mechanism of the Commission** provided in 2022



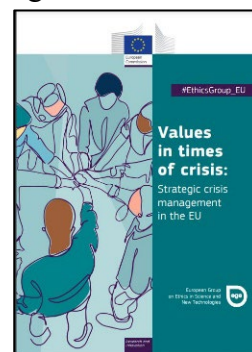
policy recommendations, based on a review of evidence, [on how the EU can improve its strategic crisis management](#)⁴⁶. The EU should

prepare for, respond to and recover from crises with a longer-term view, rather than just focusing on immediate needs. The Advisors recommend actions to build a more networked governance framework at the EU level, and to invest in a more resilient economy. They also advised on stress testing critical infrastructures for resilience and to further develop enhanced information and data management systems bridging and creating

synergies among them.



Attention has also been given to the role played by values in shaping how individuals understand, make sense of, and tackle crises. The **European Group on Ethics in Science and New Technologies** points to the importance of human dignity and solidarity being at the core of crisis management, with processes of deliberation that make values explicit. It shows how public, common and individual interests are intertwined; it outlines how values should direct the prioritisation of scarce resources and highlights the importance of data, good communication, and public trust. From these considerations the Group drew a set of recommendations for policy makers and other stakeholders in its report [“Values in Times of Crisis: Strategic Crisis Management in the EU”](#)⁴⁷ that was completed in October 2022.



3.2. Sendai priority 2: Strengthening disaster risk governance to manage disaster risk

Disaster risk governance at national, regional, and global levels is vital for effective and efficient management of disaster risk. To achieve this, it is important to ensure coordination within and across sectors, coherence of national and local legal frameworks, and to assign clear roles and responsibilities for disaster risk management. To further promote disaster risk governance, the EU has supported the adoption of strategies and legislation, action plans, or exchange of good practices between public authorities such as the following:

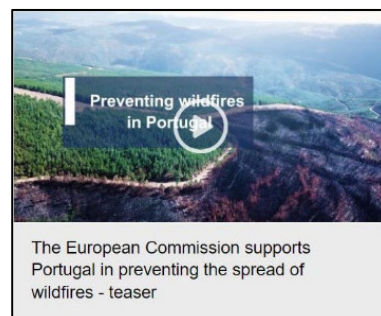
a) Examples of support for disaster risk governance in the EU and its neighbourhood

The [Peer Review Programme](#)⁴⁸ established under the Union Civil Protection Mechanism (UCPM) offers the possibility to EU Member States, to the nine States participating in the Mechanism (Albania, Bosnia and Herzegovina, Iceland, Montenegro, North Macedonia, Norway, Serbia, Türkiye, and Ukraine) and to EU candidate countries and European Neighbourhood Policy countries to carry out on a voluntary basis a screening of a country's disaster risk management system by civil protection experts from other countries (= peers). The objective of this programme is to promote an integrated approach to disaster risk management by linking prevention, preparedness, and response. It essentially supports a wider policy dialogue across Europe to improve consistency and steer progress in civil protection and disaster risk management.

Example: Peer Review in Romania

The most recent volunteer to undergo a peer review was Romania. Represented by the General Inspectorate for Emergency Situations, Romania submitted a request for a peer review in May 2022. The scope of the assessment was co-designed through dialogue and consultations, which involved organisations and stakeholders of the national civil protection system. Four peers were selected through a call for expression of interest circulated among the countries participating in the UCPM. The peers engaged in discussions with representatives of more than 30 ministries, specialised agencies, academic institutions, and civil society organisations. The [peer review report](#) was published⁴⁹ and delivered to the Romanian authorities in February 2023.

The **Technical Support Instrument (TSI)** is the EU programme that provides tailor-made technical expertise to EU Member States for the design and implementation of reforms to recover from the social and economic effects of the COVID-19 pandemic, to improve the quality of public services, and to reinforce sustainable and inclusive economic growth. It supports over 1,000 projects in all 27 Member States⁵⁰. The support provided is demand driven and does not require co-financing from EU Member States. The budget envelope for the Instrument is EUR 864 million for the period 2021-2027 (in current prices)⁵¹. In line with the subsidiarity and proportionality principles, the Union's intervention can bring an additional value by proposing an instrument offering strengthened technical support for the design and implementation of the much-needed structural reforms.



Example: Strengthened resilience and adaptive capacity to climate-related hazards and natural disasters

Through the Technical Support Instrument, [Greece](#) receives advice from experts to improve risk prevention, emergency preparedness, response, and climate change adaptation. It will also help to improve the coordination and stakeholder consultation mechanism and support the development of a climate change adaptation and civil protection Strategic Plan. The national authority that receives technical support through

this project is the Ministry for Climate Crisis and Civil Protection. The project duration is 30 months and started in June 2022.

Example: Prevention and management of wildfires.

The project has supported the Agency for Integrated Rural Fire Management in Portugal with the implementation and operationalisation of the Portuguese National Plan for Integrated Wildfire Management and the National Action Programme within three pilot regions.

The project has contributed to the development of a Model Plan and of an Application Model based on the most appropriate governance structure. Additional factors are taken into account for its replication/adaptation when transposing the model to other regions either at the local and regional level. The project also aims to develop a communication strategy and to organise training activities for key stakeholders and communities. The objective is to mobilise civil society, raise awareness, and protect Portuguese citizens and their property from wildfires.

[Video in EN](https://audiovisual.ec.europa.eu/en/video/I-233164?lg=INT%2FEN) and [Trailer](#) (also subtitled in PT) - <https://audiovisual.ec.europa.eu/en/video/I-233164?lg=INT%2FEN>

The **Technical Assistance and Information Exchange (TAIEX)** supports public administrations on approximation, application, and enforcement of EU legislation and sharing of EU best practices. As such, it can be a useful tool to support the improvement of disaster risk reduction management structures in the European neighbourhood and in enlargement countries⁵². TAIEX is available for all countries covered by the Enlargement process, the European Neighbourhood Policy in the Eastern and Southern Neighbourhoods, as well as to countries and territories covered by the Partnership Instrument and EU development policies.

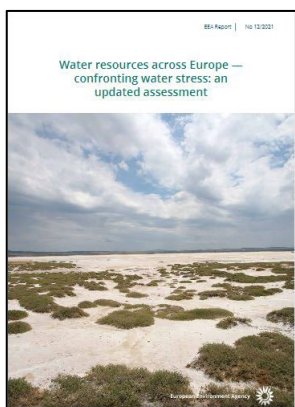
Example: TAIEX Expert Mission on building core capacities for health emergency preparedness and disaster risk management in Albania.

The aim of this mission, with participation from Italy, was to provide advice on the alignment, implementation, and enforcement of specialised EU legislation to Albanian stakeholders on disaster risk reduction practices. It allowed sharing different practices and experiences for the building of community resilience related to natural hazards and public health and medical critical infrastructures. It was followed by a study visit to Italy early 2020 allowing Albanian participants to exchange with Italian partners about the management of seismic risks.

In 2019, the Commission launched the multi-country Action Programme “[European Union Support to Flood Prevention and Forest Fires Risk Management in the Western Balkans and Türkiye](#)”⁵³ which started in 2021. The objective of the programme is to foster regional cooperation among civil protection authorities in the Western Balkans and Türkiye with civil protection authorities in Italy, Romania, Sweden, Slovenia, and Czech Republic. The purpose of the programme is to provide support to align the civil protection legislation of the beneficiary countries with the legislation of the EU and to adapt gradually to comply with EU standards and practices in civil protection in view of a future accession to the European Union. The Programme also funds the development of flood risk management plans and Early Warning Systems for floods. It

also supports risk assessments for forest fires and the development of training and exercising for fire fighters.

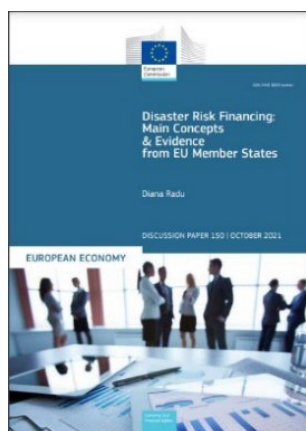
As regards disaster risk governance in the EU, there are some examples of actions that aim at fostering a systemic approach to disaster risk reduction across different actors of policymaking. [The Water Framework Directive](#)⁵⁴ provides, since the year 2000, a **coherent legal tool at EU level** to address, amongst others, water scarcity by requiring long-term planning of water resources, economic tools to incentivise efficient use of water resources, and specific measures on water abstraction and water efficiency. In addition, the new Water Reuse Regulation⁵⁵ helps to improve water resource efficiency. Water stress (which includes water scarcity and droughts) is becoming an ever more pressing problem in Europe because of the accelerating effects of climate change and the growing



demand for water supply. Droughts and water scarcity are no longer rare or extreme events in Europe, about 20% of the European territory and 30% of Europeans are affected by water stress during an average year, according to the latest **European Environmental Agency report**⁵⁶. Increasing water consumption due to food and electricity production and population density in combination with climate change impacts – long periods with no precipitation, combined with rising temperatures - will significantly worsen the existing stress on the availability and quality of freshwater resources in the future. Better-integrated water management and improved efficiency of water use across sectors is one of the core priorities of the

European Green Deal and its initiatives.

The Commission supports the **EU Covenant of Mayors** to assist local authorities in implementing EU climate and energy objectives. In the framework of the **EU Adaptation Strategy**, under the EU Covenant of Mayors, the **Policy Support Facility** was launched to provide expertise to selected municipalities and regions in EU Member States on several climate adaptation-related topics, among others, disaster risk reduction. For example, a feasibility study for surface water drainage for landslide prevention is being carried out, funded by the Policy Support Facility in Smolyan, Bulgaria. Within the programme, a webinar⁵⁷ on ‘Reducing the risk of disasters’ was funded.



The Commission actively engages with Ministries of Finance of EU Member States, independent fiscal institutions, non-governmental organisations, and insurers on how to reflect the fiscal cost of climate change in the national budgetary frameworks. The review of main concepts of **disaster risk financing, evidence from EU Member States**,⁵⁸ and the key elements of a disaster risk financing strategy to **limit the fiscal**



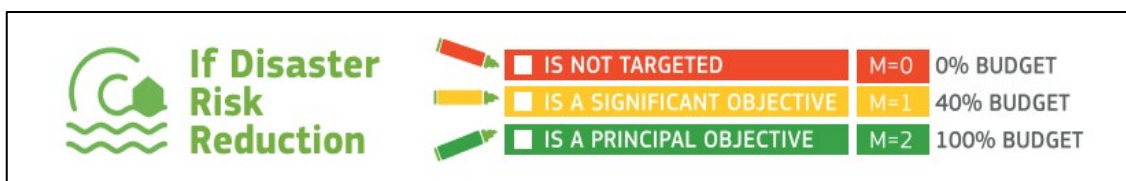
cost of climate-related disasters⁵⁹ aim to raise awareness and promote exchange of best practices among EU Member States.

b) Examples of Support for Disaster risk Governance in Third Countries

In order to enhance disaster risk governance related to climate risk, the Commission co-funded trainings and workshops on climate and disaster risk finance in African countries jointly with its partner, the United Nations Development Programme. These trainings are part of the [Africa Adaptation Initiative](#)⁶⁰ to build knowledge and understanding of disaster risk at a local, national, and regional level, particularly for **governments and policymakers**, so that they can make informed adaptation and climate risk plans.

Through the **EU Climate Dialogues** - a multi-country activity – the Commission exchanges with third country representatives on climate change adaptation practices in order to integrate adaptation and resilience into **national disaster risk planning**. For example, in 2023 a Climate Dialogue with South Africa will develop case studies and organise study visits on floods and droughts in the country.

In order to strengthen coherence and to measure how much funding for disaster risk reduction is provided through development cooperation, the EU has developed the [disaster risk reduction policy marker](#)⁶¹. It has been in use since 2018 and provides an incentive for donors to **mainstream disaster risk reduction in development cooperation**. It also promotes the idea that disaster risk reduction is a development priority, as well as a humanitarian priority with the ultimate goal of fostering consistency and comparability. It should be used alongside the Climate Change Adaptation marker⁶².



Through the project [Up-Scaling Community Resilience through Ecosystem-based Disaster Risk Reduction \(Eco-DRR\)](#),⁶³ the European Commission has supported the countries Ethiopia, Haiti, India, Indonesia, and Uganda from 2019-2023 to launch advocacy campaigns, exchange knowledge, and to develop **action plans for the systematic integration of Nature-based Solutions into national and local development programmes and strategies**. The degradation of ecosystems – such as forests, wetlands, drylands, and coastal and marine systems – is a major driver of disaster risk and a key component of communities' vulnerability to disasters. **'Ecosystem-based DRR'**⁶⁴ is the sustainable management, conservation and restoration of ecosystems to reduce disaster risk, with the aim of achieving sustainable and resilient development. Well-managed ecosystems, such as wetlands, forests, and coastal systems act as natural infrastructure, reducing physical exposure to many natural hazards and increasing socio-economic resilience of people and communities by sustaining local livelihoods and providing essential natural resources, such as food, water, and building materials.

Disaster risk financing is also taken forward globally, given that developing countries typically lack financial protection against the impacts of disasters and rely on retroactive budget reallocations, donor assistance, tax



increases, or post-disaster loans to attempt to meet financing needs⁶⁵. In December 2015, the EU and World Bank / Global Facility for Disaster Reduction and Recovery (GFDRR) signed a [Global Partnership on Disaster Risk Finance Analytics](#)⁶⁶ (EUR 6 million) to pilot the analysis and selection of adequate financial instruments. The project ended in 2022.

Examples: In the **Philippines**, a fiscal disaster risk assessment was carried out to define policy options for disaster risk financing and to prepare analytical tools specifically designed for the country. This work directly supported the placement of a USD 206 million catastrophe risk insurance programme in July 2017, as well as a renewal of the programme for a USD 390 million coverage in December 2018.

Pakistan was included in the project as a pilot country in 2017. A preliminary fiscal disaster risk assessment was completed and preliminary disaster risk financing policy options were identified. A customised analytics tool was developed for the Government of Punjab to support decision making for a crop insurance program. Further consultations with the Government of Pakistan in 2018 led to the development of disaster risk financing analytics tools to support a national disaster risk financing strategy and to secure a line of credit.

3.3. Sendai priority 3: Investing in disaster risk reduction for resilience

Public and private investment in disaster risk reduction is essential to enhance the economic, social, health, and cultural resilience of persons, communities, countries and their assets, as well as the environment. Over the last years, the Common Agricultural and Cohesion Policies have played an important role in funding investments in the prevention of forest fires and flood risk management, among other things. The EU research programme funded research and innovation projects that contributed to the Sendai priorities and targets.

a) Common Agricultural Policy of the EU

The new [EU Forest Strategy](#)⁶⁷ promotes forest-related interventions under the [Common Agricultural Policy Strategic Plans](#)⁶⁸, especially forest-related interventions that have strong synergies with the EU's climate and biodiversity objectives. Over 80% of the



Strategic Plans submitted by EU Member States for funding under the Common Agricultural Policy foresee forestry specific interventions. Most of the Strategic Plans address financing **prevention actions against forest fires** and/or against other natural disasters. They also foresee support for the restoration of forests after fires or other damages under certain conditions detailed in the Strategic Plans.

Interventions can cover both investments related to critical infrastructural elements concerning forest fires or prevention against floods, landslides, and specific management

interventions decreasing the various risk levels in forested areas. Examples on forestry, including various forest risk reduction related projects and activities could be found in the [European Network for Rural Development website](#)⁶⁹.

To enhance the **economic resilience of farmers in the EU**, the Common Agricultural Policy Strategic Plan Regulation offers EU Member States the possibility to provide financial support to farmers and small and medium-sized enterprises in rural areas affected by natural disasters, adverse climatic events, or catastrophic events. Farmers have access to income support that helps to reinforce their resilience and capacity to mitigate the impacts of disasters. Farmers also have access to safety net measures that may assist avoiding and dealing with exceptional disturbances in the markets. On top of this, EU Member States have the possibility to mobilise dedicated risk management tools and investment measures. Possible support includes insurance against losses in farm income or production, farm investments in restoration of agricultural potential, and appropriate preventive actions and support in the form of standalone working capital finance (loans, guarantees).

b) Cohesion Policy of the EU

The EU's cohesion policy and funds support EU Member States and the cooperation between Member States (and Outermost Regions) with non-EU countries via [Interreg](#)⁷⁰ programmes, to reduce disparities between regions and to strengthen economic, social, and territorial cohesion. During the period 2014-2020⁷¹, cohesion policy funds invested in **forest fire prevention**, flood risk management, and resilience against other disasters, thereby protecting millions of citizens. Investments during the period 2021-2027 should promote a transition to a more resilient environment, including the prevention of the most adverse consequences of disaster preparedness of regions, and improvement of cooperation mechanisms among regions facing the same risks, in a cross-border or transnational context⁷². An unprecedented funding envelope is available for climate adaptation and disaster risk prevention with EUR 12.5 billion representing a total of EUR 17.1 billion investments, i.e. with co-funding from states. It will support states, regions, cities, and towns to implement projects to deal with the unavoidable consequences of climate change. Floods are a major threat in many regions. Support to **flood prevention and management** represents EUR 6.2 billion EU funding and EUR 8.5 billion total investments. EUR 1.9 billion of EU funding worth EUR 2.6 billion of total investments will be invested in preventing and managing **forest fires**. These investments are expected to result in 229,372 hectares of new green infrastructure to help adapt to climate change and 86 million hectares of surface covered by new or improved protection measures against wildfires.

Example: Cohesion funding in Poland

The project “Development of Urban Adaptation Plans for cities with more than 100,000 inhabitants in Poland” was implemented with support of the Cohesion Fund by the Polish Ministry of Environment and Climate, in partnership with 44 major Polish cities. The main objective was to assess the sensitivity and vulnerability to climate change and to develop priority adaptation measures adequate to the identified risks for each city.

<https://kohesio.ec.europa.eu/en/projects/Q85044>

<https://www.gov.pl/web/climate/adaptation-plans-in-44-polish-cities>

c) Research and Innovation

Over the past years, the EU Framework Programmes for research and innovation (Horizon programmes) have been funding projects contributing to the implementation of the Sendai Framework. Horizon 2020 has for example already funded projects for a value of more than EUR 15 million in relevant fields, such as **earth observation**⁷³, **climate change**⁷⁴, and **capacity building for communities and first responders**⁷⁵ in emergency and crisis management situations.

For **prevention and response to forest fires** Horizon 2020 allocated EUR 72 million (under the Horizon 2020 Green deal call) that include activities such as training and forest management. The call has an international dimension and involves partners from Brazil, Indonesia, and developing countries⁷⁶.

3.4. Sendai priority 4: Enhancing disaster preparedness for effective response, and to “Build Back Better” in recovery, rehabilitation and reconstruction

Experience indicates that disaster preparedness needs to be strengthened for response that is more effective and to ensure that capacities are in place for effective recovery. Disasters have also shown that the recovery, rehabilitation, and reconstruction phase, is an opportunity to ‘Build Back Better’ through the integration of disaster risk reduction measures.

Over the years, the EU has launched and invested in various activities to enhance the preparedness of the EU and beyond. Key initiatives are presented below.

a) Disaster Preparedness in the EU

The outbreak of the COVID-19 pandemic revealed vulnerabilities in European health preparedness and crisis response for serious cross-border threats to health. EU Member States encountered difficulties in ensuring monitoring on needs, swift development, manufacturing, procurement, and equitable distribution of key medical countermeasures. Overall, the pandemic revealed vulnerabilities in global supply chains, and insufficient oversight of manufacturing capacities and research priorities in the EU. There is currently no EU-level medical countermeasures anticipatory risk assessment mechanism in place, and no EU overview of supply chain networks, which makes it difficult to anticipate potential supply issues and vulnerabilities for critical medical countermeasures. [The Health Emergency Preparedness and Response Authority \(HERA\)](#)⁷⁷ was created by the European Commission in September 2021 in the aftermath of the COVID-19 pandemic. It will anticipate threats and potential health crises through intelligence gathering and building the necessary response capacities. HERA’s mission is to prevent, detect, and rapidly respond to health emergencies. HERA is a shared resource and mission control centre for Member States and EU institutions to better prepare the EU for cross-border health threats. During the preparedness phase, HERA works closely with Member

States to analyse, identify, and prioritise possible health threats. This will be the basis for strategic coordination for the development of medical countermeasures, and the industrial capacity to produce and supply those countermeasures. During the crisis phase, HERA will rely on its anticipatory management system and deploy it in the context of an emergency framework activated by the Council on a proposal of the Commission. HERA launched its first work plan with EUR 1.3 billion for preparedness and response to health emergencies in 2022.

To improve the preparedness of EU civil protection authorities to jointly respond to **cross-border disasters**, the EU's Research Programme Horizon 2020 funded the [project IN-PREP](#) (2017-2020)⁷⁸. In the event of a cross-border disaster, countries are faced with the challenge of developing shared response planning and sharing information in real time. The project developed a Handbook on Transboundary Preparedness and Response Operations⁷⁹, a Mixed Reality Preparedness Platform for response planning and scenario building, situational awareness modules, and a decision support mechanism. If, for example, an organisation has doubts that its communication tools will function properly in the event of a cross-border disaster, IN-PREP can provide support by developing a transboundary scenario in which existing capacities are challenged, tested, and assessed. Other research inputs to enhanced disaster preparedness focus on societal resilience, in particular empowering local communities to assess their resilience and develop strategies to improve it⁸⁰, and identify solutions (strategies, tools, technology) based on analyses of historical crises to enhance collaboration among public authorities, first responders, and citizens⁸¹.

b) Common Actions in support of Disaster Preparedness in the EU and Third Countries

The European Commission has supported the civil protection services of EU Member States and of countries that acceded to the UCPM⁸² through a dedicated **training and exercises programme**. It supplements the national training offered to experts and intervention teams by their home country or organisation to better prepare them for international deployments under the [Union Mechanism](#)⁸³.

Example: During 2015–2022, the following trainings and exercises were organised at the UCPM level:

93 modules field and table-top exercises (MODEX) with more than 8,100 participants for example on floods, CBRN (chemical, biological, radiological, and nuclear) disasters, forest firefighting and urban search and rescue; 28 full-scale exercises (FSX) with more than 20,000 participants, for example to improve response to an earthquake; 341 training courses with more than 3,800 experts participating, for example training for response to mass burns and environmental emergency missions;

1,700 experts participated in the UCPM Exchange of Experts in Civil Protection programme.

Disaster preparedness for more effective response is also supported through the [Copernicus EU Earth Observation satellite system](#)⁸⁴. It provides data that can be transformed into tailor-made images and



cartography, which is regularly used by authorities and emergency services in the EU and throughout the world to collect situational intelligence in the event of a disaster. Copernicus data is provided through five services: Atmosphere Monitoring Service, Marine Environment Monitoring Service, Land Monitoring Service, Climate Change Service, and Emergency Management Service. All these services can be accessed fully, freely, and with no restrictions. This means that Copernicus data and services are available anywhere in the world and at no cost for end-users.

c) Disaster Preparedness in Third Countries

The European Commission has been a pioneer in promoting humanitarian preparedness, both through a specific funding programme, and through mainstreaming Disaster



Preparedness across EU-funded humanitarian aid projects. A growing number of people and assets are exposed to disasters, especially in fragile and conflict-affected states. Instead of providing emergency response only, international efforts should help governments and communities invest in understanding risks and building preparedness capacities for pre-emptive and early action. Since 2015, through the **Disaster Preparedness Programme**, the Commission has invested over EUR 420 million. The actions under this programme support communities, for example through setting up or scaling up early warning systems, ensuring communication of early warnings to communities including the last mile, and delivering training and capacity building to communities. In 2021, the Commission released a new [Disaster Preparedness Guidance Note](#)⁸⁵, which promotes multi-hazard preparedness and a risk-informed approach.

Example: Strengthening preparedness and improving response modalities in the Dominican Republic.

The objective was to ensure that the population in the Hispaniola Island benefitted from a faster and more efficient response to emergencies with improved and coordinated supply chain capacities and response strategies. The project resulted in the creation of a humanitarian corridor that facilitated regional humanitarian response in the Dominican Republic and neighbouring countries. It also funded the setup of an emergency humanitarian stockpile to guarantee a fast and effective response to vulnerable populations.

Web links, pictures, videos: Dominican Republic World Food Programme project:

<https://www.wfp.org/countries/dominican-republic>

Example: Let's get ready! Communities and municipalities in hurricane-affected areas in Guatemala and Honduras are prepared for disaster response.

The project aims at reducing the impact of multi-hazard disasters through the active participation of civil society, government, and private sector. The project is implemented in Honduras and Guatemala in the areas affected by the hurricanes Eta and Iota. Based on the risk analysis, the communities were not adequately prepared to anticipate and respond

to the impacts of likely, imminent, or current hazardous events. By supporting them in identifying the required measures such as risk analysis, contingency plans, early warning systems and coordination for effective decision-making and coordinated response, the project strengthens communities and their capacities through floods and landslide monitoring systems, early warning and mitigation tools, and through evidence, learning, and dissemination practices.

Example: Disaster preparedness in Cuba - Cuenca Resiliente: a multi-hazard, inclusive Early Warning System in the basin of Cuyaguaje river.

The project adopts a multi-hazard approach with a focus on the most vulnerable people and areas to strengthen the disaster risk management system. It works closely with institutions, civil society, affected communities and agricultural cooperatives aiming at improving knowledge and developing inclusive practices of risk monitoring, assessment, warning and preparedness, against hydro meteorological events. The project also supports the improvement of the early warning system emphasising protection and inclusion of vulnerable persons.

The establishment of safe, protective, and quality learning environments is central to the European Commission's approach to build individual, community, societal, and state resilience. This is linked to preventing and tackling crises and reducing chronic vulnerabilities. In its policy framework on **Education in Emergencies and Protracted Crises** (2018-2019)⁸⁶, the European Commission references the Sendai Framework and includes specific actions to strengthen education systems in third countries where humanitarian aid is provided to prepare for and respond to disasters, such as through the Comprehensive School Safety Framework. Typical activities supported by the education in emergencies projects include lifesaving and life skills training, establishment and management of children's clubs on disaster risk reduction and/or school committees, teacher and administration training, training of school staff and community members on how to conduct school risk assessments and develop Safety Management Plans, Emergency Response Plans, experience sharing platforms for school safety programming, disaster risk reduction advocacy, awareness raising and training with communities and local authorities.

The European Commission funded a project to **reduce the vulnerability to industrial/ecological risks in eastern Ukraine**. The Action project 13,834 direct beneficiaries, 163 local and international organizations and 171,292 indirect beneficiaries. At national level, partners successfully advocated to fill legislative gaps and investment priorities in Disaster Risk Management and for enhanced coordination among key stakeholders through the organisation of conferences, and the development of documents, for example, the project developed nine local mitigation/evacuation plans and five Area-Based Risk Assessments. It also conducted a live simulation, five trainings on data management, geo information systems and drone piloting, and provided additional ad-hoc/technical support. Finally, to enhance community awareness, preparedness, and response, the project conducted 26 First Aid trainings and 40 Psychosocial First Aid trainings.



Example: Reduce vulnerability to industrial/ecological risks in eastern Ukraine

1st video - https://m.facebook.com/537872126249267/videos/689074705084362?_rdr

2nd video - <https://www.youtube.com/watch?v=rgXJEUOr1LY>

3rd video – <https://www.youtube.com/watch?v=wJs3G68vhk4>

an online photobook – source of picture above:

https://myalbum.com/album/sLdKaQvhxt7B/?fbclid=IwAR3x31YodMJRnK_AkacQ5Www-q3CuTCcwKnKL80u6B2wAIvUVUlcLj17_b4

One project presentation on the “Radio Svoboda” local radio see [here](#) at 19:35min.

The European Commission also funds joint **prevention, preparedness, and response activities** with civil protection authorities in [Middle Eastern and North African countries](#)⁸⁷ and French, Italian, and Spanish Civil Protection Directorates. The Programme was launched in 2018 and focuses on extreme hydro-meteorological risks (e.g. floods, storms, forest fires) and seismic risks (earthquakes) in Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, Palestine, and Tunisia. Activities include earthquake risk assessment and the development of earthquake impact scenarios and earthquake risk maps.

Following the devastating earthquake that hit Albania in 2019, the European Commission supported among others, the [EU4Schools](#)⁸⁸ and the [EU4Culture](#)⁸⁹ projects. Both projects explicitly follow the “**Build Back Better**” approach of the Sendai Framework for the recovery, rehabilitation, and reconstruction in order to increase the resilience of infrastructure to future disasters.



4. SENDAI TARGETS

The Sendai Framework includes seven global targets that were defined to support the measurement of the achievement of the overall outcome and goal of the Sendai Framework. i.e. to reduce and prevent new and existing disaster risk.

The sections below outline activities taken at EU level that have contributed to targets D, F and G (targets A, B, C require specific national data and E is directed to states).

4.1. Sendai target D: Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030.

Critical entities, as providers of essential services, play an indispensable role in the maintenance of vital societal functions or economic activities in the internal market in an increasingly interdependent Union economy. It is therefore essential to have a Union framework with the aim of both enhancing the resilience of critical entities in the internal market by laying down harmonised minimum rules and assisting them by means of coherent and dedicated support and supervision measures. It is also necessary to shift the approach towards ensuring that risks are better accounted for, that the role and duties of critical entities as providers of services essential to the functioning of the internal market are better defined and coherent, and that Union rules are adopted to enhance the resilience of critical entities. Critical entities should be able to reinforce their ability to prevent, protect against, respond to, resist, mitigate, absorb, accommodate, and recover from incidents that have the potential to disrupt the provision of essential services. [The new Directive on the Resilience of Critical Entities \(CER Directive\)](#)⁹⁰ entered into force on 16 January 2023. It covers eleven sectors: energy, transport, banking, financial market infrastructures, health, drinking water, wastewater, digital infrastructure, public administration, space, and food. Member States need to adopt a national strategy and carry out regular risk assessments to identify entities by 17 January 2026 that are considered critical or vital for the society and the economy. By 17 July 2026, each Member State shall identify the critical entities in the sectors and subsectors covered by the Directive.

While the CER Directive focuses on the physical aspects of critical entities, it is complemented by the [Network Information Systems \(NIS2\) Directive](#)⁹¹, focusing on the same eleven sectors, but from the cyber-security standpoint. The Council adopted on 8 December 2022 a [Recommendation](#)⁹² to accelerate efforts at all levels to step up cooperation and coordination of an EU response to strengthen the resilience of critical infrastructure. The Recommendation calls on Member States to carry stress tests on critical infrastructure starting with the energy sector, strengthen the cybersecurity of critical infrastructure, adopt a Blueprint on the response to critical infrastructure incidents and crises and strengthen cooperation with NATO and key partner countries.

Weather and climate hazards can be a major threat to the functioning of critical infrastructure. It is therefore important that climate considerations be taken into account when infrastructure projects are being developed. In 2021, the European Commission published [technical guidance on the climate proofing of infrastructure in the period 2021-2027](#)⁹³. The guidance defines climate proofing as a process that integrates climate change mitigation and adaptation into the development of infrastructure projects.

The promotion of resilience of new and existing infrastructure systems to climate and disaster risks in support of sustainable development also takes place in cooperation with third countries⁹⁴. The [Coalition for Disaster Resilient Infrastructure \(CDRI\)](#) was launched in 2019 under the leadership of Government of India at the UN Climate Change Summit. The EU joined CDRI in 2021⁹⁵, contributed EUR 5 million and worked jointly with Australia, India, the United Kingdom, and representatives of Small Island Developing States on the co-creation of **Infrastructure for Resilient Island States (IRIS)**. Launched at COP26 during the World Leaders Summit, IRIS is an initiative to achieve sustainable development through a systemic approach to promote resilient, sustainable, and inclusive infrastructure.



4.2. Sendai target F: Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of this framework by 2030

Support to resilience at all levels is an integral part of the [European Consensus on Development](#)⁹⁶ adopted in 2017 by the EU and its Member States. It defines a shared vision and action framework for development cooperation, which fosters a dynamic and multidimensional approach to resilience, in order to deal with vulnerability to multiple hazards and interrelated risks. It calls for the EU and its Member States to systematically integrate resilience into their action, ensuring that individuals, communities, institutions, and countries can better prepare for, withstand, adapt to, and quickly recover from stresses and shocks without compromising long-term development prospects.

The European Commission has increased funding for investment in disaster risk reduction in developing countries from EUR 10 million in 2014 to EUR 845 million in 2020 (and EUR 790 million in 2021). Most of the supported investments have addressed various components of disaster risk reduction and management, ranging from disaster risk governance, risk assessments, and early warning systems to community resilience programmes and climate risk insurance. Disaster risk reduction investments often complement (and sometimes overlap with) the EU's climate change adaptation efforts⁹⁷. The EU, its Member States, and the European Investment Bank are together the world's leading climate finance providers, contributing at least one third of the world's total public climate finance (EUR 23.04 billion in 2021). The [Neighbourhood, Development and International Cooperation Instrument – Global Europe \(NDICI\)](#)⁹⁸ includes an increased spending target of 30% for climate action (raised from 20% in the previous programming period 2014-2020). An additional EUR 4 billion pledged by the Commission President in 2021 brings the EU climate finance target therefore de facto to 35% (EUR 27.85 billion) of the EU international cooperation overall budget for 2021-2027 (which is EUR 79.5 billion).

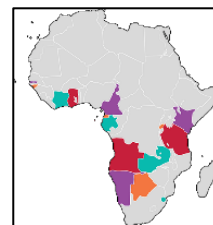
A major EU initiative that supported disaster risk reduction activities in third countries was the [Global Climate Change Alliance Plus \(GCCA+\)](#)⁹⁹. It started with just four pilot projects in 2008, but became a major climate initiative that funded over 80 projects of

national, regional and worldwide scope in Africa, Asia, the Caribbean, and the Pacific with a budget of EUR 737.5 million. It ended in 2023.

Moreover, the EU is strongly committed to be at the forefront of the collective efforts to scale up **climate finance** provision and mobilisation – and particularly **adaptation finance** with a focus on low income and vulnerable countries and communities. This points to the synergies between the implementation of the Sendai Framework and the implementation of the United Framework Convention on Climate Change as well as the Paris Agreement. The EU, its Member States and the European Investment Bank currently provide a third of the world's public climate finance. In 2021 alone, the contribution to the collective USD 100 billion per year goal amounted to EUR 23.04 billion – with a balanced share between mitigation and adaptation¹⁰⁰.

Examples of EU support for resilience building:

- **Sub-Saharan Africa:** Many African countries suffer from a lack of accurate information to take risk-informed decisions. While the magnitude and intensity of disasters is increasing in the region, national capacity to systematically record the disaster losses and damage is low. Having a disaster loss accounting system helps countries and communities to build resilience based on reliable, nationally sustained information that helps to take future risk-informed decisions for preventing and reducing disaster risk. The **Building Disaster Resilience to Natural Hazards in Sub-Saharan African Regions, Countries and Communities** project was launched in July 2015 by the EU and the Organisation of African, Caribbean and Pacific States (OACPS), to provide effective implementation of a comprehensive framework to secure development gains through more accurate risk information and improved systems for decision-making.



Example: From 2018-19, country-level disaster risk profiles were developed for 16 countries (Angola, Botswana, Cameroon, Côte d'Ivoire, Equatorial Guinea, Eswatini, Ethiopia, Gabon, The Gambia, Ghana, Guinea-Bissau, Kenya, Malawi, Namibia, São Tomé and Príncipe, Tanzania and Zambia). These profiles include, for example, information on floods and droughts in a changing climate projected over the next 50 years. Detailed graphic reports and data are available on <http://riskprofilesundrr.org/riskprofiles/>.
<https://www.youtube.com/watch?v=P57EgOjag6E>
https://www.gfdrr.org/sites/default/files/ATLAS%20RISQUES%20CEEAC_lig ht.pdf

- **African, Caribbean and Pacific States:** African, Caribbean, and Pacific States (ACP) are among the most vulnerable countries in the world. The Organization of African, Caribbean and Pacific States (OACPS), previously known as the ACP Group of States, consists of 79 member states and six regions, who are signatories of the Cotonou Agreement, which legally consolidates their partnership with the EU. Since as early as 2004, OACPS and the EU took the initiative to pioneer action on disaster risk reduction and resilience, expanding from humanitarian assistance and response to a more pro-active and holistic approach to prevent and manage disaster risks caused by natural hazards. The 10th European Development

Fund (EDF) **ACP-EU Natural Disaster Risk Reduction Programme** was launched in 2011 and closed in December 2021. It funded activities in 70 ACP countries through 149 projects. It contributed, for example, to the following results: 30 countries integrated disaster risk reduction and climate change adaptation in their national planning processes; 3 river basins have improved their flood risk management; 15 countries have developed risk financing and insurance strategies; 20 countries have developed national capacity for post-disaster needs assessments; and 20 countries have gained access to early warning systems for natural hazards.

Example: 10th EDF ACP-EU Natural Disaster Risk Reduction Program
<https://www.gfdr.org/en/acp-eu>
<https://www.gfdr.org/en/dominica-hurricane-maria-post-disaster-assessment-and-support-recovery-planning>
<https://www.gfdr.org/en/pacific-catastrophe-risk-assessment-and-financing-initiative-phase-3>
<https://www.gfdr.org/en/senegal-strengthening-urban-and-coastal-resilience-saint-louis>
<https://www.climsa.org/>

- **Central Asia:** The **Strengthening financial resilience and accelerating risk reduction in Central Asia programme** (EUR 8.5 million, 2017-2024) supported among others the development of a framework for the creation of a regional early warning system and Regional Coordination Centre for Emergency Response based on the [Centre for Emergency Situations and Disaster Risk Reduction](#)¹⁰¹.
- **South-East Asia:** The [National Copernicus Capacity Support Action Programme for the Philippines](#)¹⁰² aims to reduce vulnerability of populations and ecosystems, potentially for the whole Association of Southeast Asian Nations (ASEAN) region, by setting up a regional Copernicus mirror site and improving digital connectivity. The Commission has also supported the ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management (AHA Centre)¹⁰³, which aims to contribute to the goal of the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) to achieve a substantial reduction of disaster losses in lives and in the economic, social, physical, and environmental assets of ASEAN Member States.
- **Latin America:** The Commission has supported the establishment of regional Copernicus centres in Panama and Chile. They will provide services at regional level for emergency management, climate change adaptation, coastal and ocean monitoring for sustainable use of natural resources, protection of biodiversity, and monitoring of greenhouse gases.

4.3. Sendai target G: Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to people by 2030

The importance of Sendai target G was recently emphasised by the UN Secretary-General. Recognising the importance of people-centred and end-to-end, multi-hazard early warning systems in saving lives and reducing disaster impact, the Secretary-General of the UN announced on 23 March 2022 (World Meteorological Day), that “*the United Nations will spearhead new action to ensure every person on Earth is protected by early warning systems within five years*”¹⁰⁴. On 7 November 2022, the Secretary-General announced an Executive Action Plan for the Early Warnings for All initiative at the Climate Change Conference (COP27), which calls for initial new-targeted investments of USD 3.1 billion between 2023 and 2027. The European Union has developed and uses many early warning systems with support of its space capabilities and funds the development of early warning systems in other parts of the world.

The European Commission’s **Emergency Response Coordination Centre (ERCC)** coordinates the delivery of assistance to disaster-stricken countries, such as relief items, expertise, civil protection teams, and specialised equipment. In addition, the ERCC monitors potential risk situations and supports the coordination of information among EU Member States and third countries to complement the joint collection of disaster-related information. For this purpose, the ERCC has several **early warning systems** developed by the European Union and partly based on the Copernicus Emergency Management Services at its disposal.

The European/Global Flood Awareness System (EFAS/GLOFAS)¹⁰⁵ – EFAS provides flood early warning information up to 15 days in advance to the national/regional hydrological services, civil protection authorities and the Centre. GLOFAS provides an overview of current and future hydro-meteorological situations, and ongoing and future river flood events around the world. GLOFAS recently included the Global Flood Monitoring that provides a continuous monitoring of floods worldwide by immediately processing and analysing satellite data.

The European/Global Forest Fire Information System (EFFIS/GWIS)¹⁰⁶ – EFFIS provides fire danger forecast up to 10 days and near-real time information on active fires and burnt areas in Europe, Middle East and North Africa. GWIS will soon provide similar information at a global scale.

The European/Global Drought Observatory (EDO/GDO)¹⁰⁷ – EDO provides drought risk information in Europe, for example, information on soil moisture anomalies, vegetation stress, and river low flows. GDO adds the components of exposure and vulnerability to assess the risk of impacts in different sectors.

In addition, and in close coordination with the United Nations Office for the Coordination of Humanitarian Affairs, the European Commission has developed the **Global Disaster Alert and Coordination System (GDACS)**¹⁰⁸, which follows a multi-hazard approach integrating the above-mentioned three global systems. GDACS provides automated alerts and preliminary impact estimates at global level on natural disasters.

Meteoalarm¹⁰⁹ provides information to prepare for extreme weather in Europe.

Furthermore, the Centre has a **Scientific and Technical Advisory Facility (STAF)**, which provides 24/7 emergency reporting, monitoring, scientific experts on demand, and support to scenario building.

How does it work in practice? Example: The EU's Response to the Earthquakes in Türkiye and Syria.

On 6 February 2023 at 04.17 local time, an earthquake of magnitude 7.8M, with a depth of 18 km, occurred near Gaziantep city, in south-eastern Türkiye, close to the border with Syria. GDACS issued a Red Alert about 32 minutes after the event. The situation was soon confirmed. One hour and a half after the event, Türkiye reached out to the European Response Coordination Centre requesting search and rescue teams as well as medical teams. A total 38 teams were deployed in the field through the UCPM assisting more than 11,000 patients and saving 101 lives. In addition, since beginning of February, the European Commission, EU Member States, UCPM Participating States, and humanitarian partners continue to closely assess the needs in the affected areas in Türkiye and Syria and are delivering essential assistance. The Copernicus Emergency Management Service was activated for rapid and risk and recovery mapping. Since 6 February, a localised meteorological forecast has been established every day.

More information: Global Disaster Alert and Coordination System (GDACS) - <http://www.gdacs.org>; Copernicus Emergency Management Service - <https://emergency.copernicus.eu/>

Information about an imminent disaster needs to be received not only by the disaster management authorities, but also by citizens. To alert citizens, civil protection authorities make use of a variety of alert systems: sirens, email, social networks, TV, Radio, cell broadcast, location-based SMS, etc. Under the European Electronic Communication Code, EU Member States had to establish efficient Public Warning Services by mid-2022. Satellite technology can complement these systems and contribute to reinforcing the robustness of alert systems. **Galileo** is the European Union global navigation satellite system¹¹⁰. It is introducing a new service in its portfolio, the Emergency Warning Satellite Service. This service can send alert messages to people located in a specific geographical area, everywhere on Earth. The alert message transits through the usual navigation signals and is received directly on standard navigation receivers, such as those equipping people's smartphones, car navigators, or those installed on top of buildings or public infrastructure (billboards, signage, etc.). By 2025, the Emergency Warning Satellite Service will be fully deployed, and available for use by EU national civil protection authorities.



The EU co-funds the **Climate Risk and Early Warning Systems (CREWS)**¹¹¹ initiative with EUR 10 million. CREWS is a mechanism that provides financial support to Least Developed Countries (LDCs) and Small Island Developing States (SIDS) to establish risk-informed early warning services.

Climate change will imply significant risks for health and well-being, and significant strains on public health systems caused by growing heat stress, emerging infectious disease threats, food and water safety and security problems, the rise of new allergens, mental health effects, wildfire, and flood risks. Much can be done to reduce these risks and the benefits and cost-savings of preventive actions are likely to be substantial.

However, this requires effective ways of gathering, sharing, and spreading the necessary knowledge. The [European Climate and Health Observatory](#) was set up for this purpose. It covers the 38 European Environmental Agency member and cooperating countries i.e. including all 27 EU Member States. Launched in 2021, the Observatory supports, among others, public authorities to anticipate and prevent climate-related short and long-term threats to health in a timely manner. Observatory partners are supporting the development of suitable mechanisms – such as public surveillance, forecasting, and **early warning systems** - to enable timely detection and response to climate-sensitive health risks. The ‘evidence on climate and health’ section of the observatory website¹¹² already provides a great deal of knowledge about climate-related health effects, projection-builders, and modelling tools for near and longer term risk detection, and an overview of the related European and national early warning and health warning systems.



Example: European Climate and Health Observatory:

The Vibrio bacteria: the ‘Vibrio map viewer’ is a near real-time model shows the environmental suitability for the growth of dangerous Vibrio bacteria in the Baltic Sea, based on daily updated remote sensing data which can cause disease in humans (e.g. cholera).

The Copernicus Atmosphere Monitoring Service will be providing short-term forecasts for various air pollutants (NO₂, PM_{2.5}, PM₁₀, pollen PM₁₀ from wildfires only; dust) which entail serious health risks, especially when combined with heat waves.

Africa is the continent with the biggest gaps in multi-hazard early warning systems and risk information. The EU and some EU Member States have been supporting the establishment of the **Africa Multi-Hazard Early Warning and Early Action System**. The African Union Commission launched this programme in 2022 as a network of dedicated situation rooms, climate centres, specialised meteorological centres, and mechanisms for disease and conflict warning at national, regional, and continental levels. It builds on the 2020 “[African Road Map for Improving the Availability, Access and Use of Disaster Risk Information for Early Warning and Early Action](#)”, including in the Context of Transboundary Risk Management¹¹³ which was developed with the financial support of the EU.

5. Conclusions and outlook

The United Nations Office for Disaster Risk Reduction (UNDRR) report on the [Main Findings and Recommendations of the Midterm Review of the Implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030](#)¹¹⁴ has shown that, despite progress, the pace of implementation is too slow. Overall, the international community is not fully on track to achieve the Framework expected outcome and goals by 2030.

The Midterm review of the Sendai Framework is an opportunity for all stakeholders, including the EU, to restate their commitment to achieving the overall objectives of the Framework, namely, to prevent new risks, to reduce existing risks, and to strengthen resilience. This report has provided examples of actions the EU has taken to support EU Member States, third countries, and other stakeholders to progress towards the

achievements of the priorities and targets of the Sendai Framework for Disaster Risk Reduction.

On the way towards 2030, the EU will continue its progress on implementing the Sendai Framework. Examples of areas where the EU will work further include:

Implementing the Disaster Resilience Goals: through the five Disaster Resilience Goals, the Commission presented a new agenda for disaster resilience at home and abroad. Together with its Member States, the Commission will work on the implementation of the Goals and their respective flagship initiatives.

Building resilience by acting ahead of disasters: the Commission is exploring effective ways of scaling up anticipatory action. Both the European Commission's Disaster Preparedness programming and the Communication on EU's Humanitarian aid recognise anticipatory action as a priority and present a commitment to scale it up.

Addressing disaster-related displacement and migration: more efforts are needed to address the challenges associated with disaster-related displacement and migration. Future actions will focus, among other things, on better understanding the multifaceted nature of climate-related displacements, better policy and programming coherence at all levels, and the promotion of research, data collection, exchange of knowledge, and capacity building¹¹⁵.

Strengthening risk assessment and research: building on the wealth of existing policies and tools, the Commission will work further on strengthening a better understanding and assessment of risks. With regard to the latter, the first ever *European Climate Risk Assessment* will be published in 2024. Promoting research and bridging science and policy-making are paramount. The European research programme, Horizon Europe, will continue to fund projects contributing to the implementation of the Sendai Framework as for example under the Civil Security for Society programme. At the same time, the Union Civil Protection Knowledge Network will continue to offer an important platform to exchange knowledge and good practices, and to connect practitioners, policy-makers, and the science community.

Contributing to the reduction of disaster risk globally: through development cooperation, a number of initiatives at national, regional and continental level across Africa, Asia and the Pacific, Latin America, and the Caribbean, supporting the targets and priorities of the Sendai Framework are being rolled out. These actions will also contribute to the [Early Warning for All Initiative](#)¹¹⁶ launched by the UN Secretary-General.

The Commission will strive to, integrate and align the approach to disaster risk reduction with other global agendas, conventions and frameworks, such as the Paris Agreement, the 2030 Agenda for Sustainable Development, and the Global Biodiversity Framework (GBF). Through these and other actions, the EU will continue to work together with EU Member States, third countries, partners such as the UNDRR, and other stakeholders to contribute to the achievement of the goals and targets of the Sendai Framework by 2030.

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