European Union

ISSUE 15 | JULY 2025
ISSN 2811-6852

Union Civil Protection Knowledge Network

INTRODUCTION

Hans Das, Deputy Director-General and Chief Operations Officer, DG ECHO © EU 2025

In an era marked by escalating climate-related hazards, renewed security threats, and increasing budgetary pressures, innovation is essential for enhancing our efficiency and effectiveness in disaster risk management and crisis preparedness. As civil protection authorities face increasing demands with limited resources, artificial intelligence (AI) and new tech already offer powerful tools to improve the efficiency, accuracy, and timeliness of our prevention, preparedness, and response efforts.

European civil protection stands at a pivotal moment, with a real opportunity to take bold but thoughtful steps toward integrating new technologies across all phases of our work – from early warning and preparedness to crisis response.

This ambition is echoed in the Niinistö report, which underpins the Preparedness Union Strategy, and highlights the urgent need to bridge the gap between research and innovation funding and the operational deployment of solutions on the ground.

While recognising the wealth of excellent research already being conducted, we must be mindful that many promising innovations have yet to reach implementation, particularly within public authorities and practitioner communities.

At the Directorate-General for European Civil Protection and Humanitarian Aid Operations (DG ECHO), we are committed to helping close this gap in the future. As part of this effort, we recently convened a capacity-building workshop with EU Civil Protection Mechanism (UCPM) Member States and Participating States, showcasing new initiatives from the Commission, the private sector, and both UCPM and Horizon Europe projects, with a focus on the practical application of AI in disaster risk management. These efforts are just a start, but they reflect our shared commitment to turning innovation into impact across the Union.

You might also have noticed in the latest Horizon Europe 2025 Work Programmes that the Commission has put a significantly higher emphasis on closing this gap than before. There will, for example, be one topic on **AI / machine learning (ML)** for cross-border prevention, preparedness and response.

Meanwhile, civil protection projects across the EU are already exploring the potential of AI in exciting and innovative ways. Projects like the TEMA digital twin project in Sardinia are opening up new possibilities in fire management by providing real-time, data-driven insights into fire behaviour and resource deployment. Similarly, the Horizon project CARMA develops autonomous unmanned ground vehicles capable of working in symbiosis with humans to support and supplement first responders and assist citizens in disaster situations.

Looking ahead, we will continue to foster this momentum. In December, we will **host the third meeting of the** UN Global Initiative on Resilience to Natural Hazards through AI as a high-level 'Building Capacity on AI for Disaster Preparedness' event. We also look forward to demonstrating more research and innovation for implementation at next year's Civil Protection Forum.

Both AI and ML hold real promise to transform the way disaster risk managers and civil protection professionals save lives. We are only at the beginning of this journey, but we hope many in our civil protection community will join us in exploring how these tools can enhance our collective impact. Of course, AI is only one of many areas for innovation in disaster risk management – there is much more that can be done for the benefit of all.

Hans Das

Deputy Director-General
and Chief Operations Officer, DG ECHO

IN THIS ISSUE

CONTENTS

FEATURED

LEARNING

SCIENCE

FROM THE COMMUNITY

IN CASE YOU MISSED IT

FEATURED

Devastating fire in North Macedonia triggered life-saving medical evacuations

North Macedonia activated the EU Civil Protection Mechanism (UCPM) on 16 March 2025 after a fire left many victims severely burnt and in urgent need of highly specialised treatment.

The fire broke out at a nightclub in the town of Kočani in North Macedonia in the early hours of Sunday 16 March. The impact was devastating; it resulted in 59 deaths and over 150 people injured, many of whom suffered severe burns.

European Civil Protection team member oversees operations on the airport tarmac
© EU 2025

North Macedonian emergency services transferred injured people to the hospital in Kočani and onwards to hospitals in Skopje for advanced medical treatment. At the same time, authorities requested international support for the immediate transport of patients with severe burns to countries that could provide the necessary medical treatment through the activation of the UCPM. The request was updated several times in the days that followed the disaster.

Sixteen EU Member States (MS) and UCPM Participating States (PS) responded to the requests, offering treatment and/or transport. An additional five MS/PS carried out medical evacuations (Medevac) outside the UCPM framework on a bilateral basis.

In total, 40 patients were evacuated, starting with the first eight patients arriving in Hungary, Lithuania and Slovenia on 17 March.

The assistance included aircraft equipped for medical evacuation with medical teams and necessary equipment, including oxygen and intubation support, to ensure patient safety during transport. Patients then received treatment in hospitals specialised in severe burn injuries.

From 19 to 22 March, the European Commission's Emergency Response Coordination Centre (ERCC) deployed liaison officer Angel Castillo Alfaro to Skopje to help coordinate the EU response on the ground. 'My main role was to facilitate smooth communication between North Macedonia's Ministry of Health, civil protection authorities, EU embassies, and the offering countries', said Castillo Alfaro. 'In fast-moving emergencies like this, having real-time information is key.'

He described his typical day: 'I met daily with key counterparts and, when Medevac flights were happening, I was at Skopje International Airport to solve any last-minute issues. For example, I was there during the operation that transported eight patients to Spain.'

Looking back, Castillo Alfaro shared: 'My greatest satisfaction was seeing EU countries come together to help. Knowing that all the patients considered severe, including several minors, were evacuated and received treatment was deeply rewarding.' The European Commissioner for Preparedness, Crisis Management and Equality, Hadja Lahbib, expressed her deepest condolences to the families of the victims and all those affected and thanked European countries for quickly offering treatment and assistance to the victims via the UCPM.

North Macedonia has kept the request for assistance open in case another need for a Medevac or other type of support arises.

Reflecting on the lessons learnt, Castillo Alfaro added: 'Every small action counts, even the administrative ones you don't always see. And one thing I've learned from working at the ERCC is the importance of flexibility – adapting quickly on the ground complements the UCPM's structured procedures and ultimately strengthens Europe's collective response.'

Evolving European civil protection: new implementing act brings key adaptations to UCPM operational rules

Civil protection experts take part in a coordination meeting at the Emergency Response Coordination Centre (ERCC) © EU 2025

As disasters grow in scope and intensity, the frameworks designed to mitigate impact must also evolve. The EU Civil Protection Mechanism (UCPM), a cornerstone of EU disaster response, is adapting to today's changing landscape in coordinating disaster response across the European Union and beyond. However, the dynamic nature of disaster management necessitates a more modern and coherent operational framework within the UCPM. Recognising these changes, in 2023, the European Commission launched a comprehensive review and modernisation of the implementing acts, which form part of the UCPM legal framework to ensure continued relevance and effectiveness.

A dedicated Directorate-General for European and Civil Protection and Humanitarian Aid Operations (DG ECHO) B2 legal team, in close cooperation with other DG ECHO colleagues, led the process. Following extensive discussions with Member States' experts, the new Implementing Decision (EU/2025/704) was approved by the Civil Protection Committee and adopted by the Commission on 10 April 2025.

What are the key adaptations?

Update of European Civil Protection Pool (ECPP)

Over the past decade, some provisions of the implementing act for the ECPP have become outdated. The revised act ensures their practical application and aligns them with recommendations from the Commission expert group on capacities. The result is a significant expansion of the types of response capacities that Member States and Participating States can commit to the ECPP. Moreover, the new act streamlines certification requirements for the capacities.

Strengthening rescEU

The new act enhances the rescEU framework with two key changes. First, it mandates that capacities remain deployable for their entire operational lifespan, recognising differences across assets like aerial firefighting planes and medical stockpiles. Second, to avoid wastage, it allows the hosting Member State, with Commission approval, to donate capacities that may otherwise expire.

Robust deployment

Deployment procedures have been improved by streamlining ERCC analytical briefs, tailored to each mission, and by allowing Member States to directly request reports from the scientific and technical advisory. Host Nation Support is now obligatory, covering subsistence, lodging, fuel, and supplies, with a liaison established by the receiving country to facilitate access to these resources for deployed response teams.

Simplification of financial Union assistance

The act introduces a single, unified request format for Union assistance, enabling UCPM Member States and Participating States to seek financial support, pooling assistance, or access to market services in one streamlined procedure. As a result, the ERCC can respond more effectively with its full view of operational needs.

The Commission is confident that the new set of operational rules will bring clarity and boost efficiency in disaster preparedness and response efforts.

How science shaped the EU's earthquake response in Myanmar

A strong earthquake of 7.7 magnitude at a depth of 10 kilometres occurred on Friday 28 March at 06:20 UTC (12:50 local time) in the Sagaing Region, central Myanmar. Several aftershocks with magnitudes between 4.1 and 6.7 were recorded over the following days. Within 19 minutes of the initial earthquake, the Global Disaster Alert and Coordination System (GDACS) issued a red alert, informing the humanitarian aid community that international assistance would likely be necessary to cope with a major disaster. Overall, more than 3 700 people died, 5 000 were injured and 6.3 million were left in need of humanitarian aid.

The Emergency Response Coordination Centre (ERCC) sought the support of the European Commission's Joint Research Centre (JRC) for an integrated scientific perspective.

The first moments after a disaster are critical for response planning and decision-making at both political and field level. Thanks to the initial information provided by GDACS and the scientific community, the analysis informed emergency humanitarian funding by the European Commission (ReliefEU) as well as the planning an EU Civil Protection Mechanism (UCPM) operation.

The first ECHO Daily Map was published on the same day, with subsequent updates over the next weeks, providing a shared situational awareness on the impact and the EU response.

For a more in-depth remote damage assessment, the ERCC also activated the Copernicus Emergency Management Service (CEMS) on the same day. The areas were chosen according to the intensity of shaking, the population density, vulnerability of the area, critical infrastructure, and input from field experts. Remote sensing and modelling played a critical role as the conflict-affected location hindered access. In total, 93 products were delivered to over 57 areas (EMSR798).

Severe building damage in Myanmar following the 7.7 magnitude earthquake © Magdalena Chodownik

Several dams were included in the areas of interest to remotely assess potential breaches. Copernicus satellite maps showed a deformation at the Sedawgyi Dam, located 55 kilometres from the earthquake epicentre. Concerned about structural damage and proximity to populated areas, the ERCC requested the JRC's European Crisis Management Laboratory (ECML) to simulate a potential breach, assuming the worst-case scenario: the complete failure of the dam and reservoir at its full capacity. The simulation results supported field experts in planning their response.

The UCPM was activated at the request of the United Nations Environment Programme (UNEP) / United Nations Office for the Coordination of Humanitarian Affairs (OCHA) Joint Environmental Unit (JEU), UN-OCHA Myanmar, and the World Health Organization (WHO). Seven EU Member States provided shelter items, food rations, latrines, medical items, medicines and other non-food items. An EU Civil Protection Team was deployed to coordinate incoming assistance and liaise with the humanitarian community on the ground. The damage assessment and analytical products were highly valued as these enhanced their situation awareness and supported EU response efforts: 'It felt like our colleagues in Brussels and Ispra were right there with us – working side by side', said Johanne La, ERCC Liaison Officer.

No one works alone during an emergency: scientists and analysts came together across organisations to support the response. This included the collaboration with the Global Earthquake Model Foundation on impact estimates, such as fatalities, injuries, building damage, and economic damage, as well as the information exchange with the World Meteorological Organization (WMO) through the WMO Coordination Mechanism (WCM).

The findings were exchanged during the daily emergency coordination meetings led by the UN OCHA-coordinated Assessment and Analysis Cell. Several complementary analyses were conducted, including impact estimation, conflict situation assessment, and monitoring of the ongoing and forecasted meteorological situation.

EU engagement and priorities at the 2025 Global Platform for Disaster Risk Reduction

The eighth session of the Global Platform for Disaster Risk Reduction took place from 2 to 6 June 2025 in Geneva, Switzerland. Organised every three years by the United Nations Office for Disaster Risk Reduction (UNDRR) and a host country (this year Switzerland), the event brought together over 3 000 participants from 164 countries. Discussions built on findings from five regional platforms: Africa, the Americas and Caribbean, the Arab States, Asia Pacific, and Europe and Central Asia.

The EU and its 27 Member States prepared a joint Statement that was presented during the platform. Commissioner for Equality, Preparedness and Crisis Management, Hadja Lahbib, participated in the Ministerial Roundtable on school safety, highlighting the EU's efforts to integrate disaster preparedness into classrooms.

Commissioner Hadja Lahbib with Head of UNDRR Kamal Kishore © EU 2025

The Joint Research Centre (JRC) emphasised bridging the science-policy gap in a thematic session on 'Strengthening the understanding of disaster impact data and its application in decision-making'.

The Directorate-General for European Civil Protection and Humanitarian Aid Operations (DG ECHO), represented by Olimpia Imperiali, participated in the first Global Early Warning for All (EW4ALL) multi-stakeholder forum. In a panel discussion 'Accelerating EW4ALL through international, regional, and national cooperation and partnership', she highlighted the EU's commitment to supporting early warning systems globally and emphasised the importance of legislative frameworks. She also recalled EU-developed early warning and forecasting tools, which are freely available worldwide to assist authorities and the international community.

DG ECHO organised the second high-level dialogue under the EU–Latin American and Caribbean Memorandum of Understanding on disaster risk management, aiming to strengthen cooperation and discuss disaster risk financing. The event was attended by the International Federation of Red Cross and Red Crescent Societies (IFRC), National Societies of the Red Cross from Latin America and the Caribbean, EU Member States and several international development banks and financial institutions.

The EU also hosted a high-level ministerial event with representatives from across Latin America and the Caribbean, Asia, and South Africa, with the latter serving as the Chair of the G20 working group on disaster risk reduction. Commissioner Lahbib reaffirmed the EU's commitment to international disaster risk management. Participants thanked the EU for an already strong collaboration and called for strengthened partnerships focusing on vulnerable groups, innovation in technology and finance, and a whole-of-society approach. They called for sustained leadership from the EU, G20 and global/regional UNDRR platforms.

In a world faced with multiple crises and growing complexity, the platform aimed to raise awareness of the urgency to act under the motto 'Every Day Counts, Act for Resilience Today'. With five years remaining to implement the Sendai Framework for Disaster Risk Reduction 2015-2030, progress has been made in reducing disaster-related mortality, strengthening governance, increasing countries with disaster risk reduction strategies, and improving the global availability of early warning systems.

However, significant work remains, as outlined in the outcome document 'Geneva Call for Disaster Risk Reduction. Priorities include enhancing data quality, harnessing emerging technologies, such as artificial intelligence, breaking institutional silos, increasing prevention investment, scaling up early warning systems, and preparing to 'Build Back Better' after disasters.

UCPM response to foot and mouth outbreak in Slovakia: a first for a CBRN team from the European Civil Protection Pool

In March and April 2025, Slovakia grappled with multiple outbreaks of foot and mouth disease (FMD) in cattle farms, primarily in the Dunajská Streda district near the Hungarian border, with a further case in the Malacky District close to Austria. Concurrently, Hungary faced four outbreaks on farms near the Slovakian border.

Faced with this biosecurity threat, Slovakia declared a state of emergency on 25 March. To curb the spread of the disease the government sought assistance from the EU Civil Protection Mechanism (UCPM) on 22 March, requesting three chemical, biological, radiological and nuclear (CBRN) decontamination teams and 10 specialised trucks, later adding a request for two more decontamination gates.

Austria was the first to respond, offering its certified CBRN decontamination team, registered since 2024 in the European Civil Protection Pool. This offer was formally accepted on 24 March, thereby facilitating an immediate and coordinated response to the unfolding crisis. The Austrian Forces Disaster Relief Unit (AFDRU) remarkably exemplified international cooperation. As part of the CBRN decontamination team, a contingent of 52 personnel and 19 vehicles from the Austrian Armed Forces journeyed into Slovakia to establish a base of operations in Gabčíkovo.

'Knowing that this was the first CBRN-related deployment of the UCPM filled us with pride and simultaneously encouraged us to deliver a strong professional performance' noted a member from the management team that was deployed in Slovakia, emphasising the historical significance of this deployment.

Civil protection teams conduct vehicle decontamination © EU 2025

From 26 March to 5 April, the deployed teams operated with high efficiency, decontaminating over 6 000 vehicles at the pivotal Rajka border crossing with Hungary.

The extensive decontamination efforts were crucial in containing the spread of FMD in Slovakia and the success of this operation can be attributed to the strong cooperation and coordination among national and international response teams. These efforts not only tackled a significant public health threat but also highlighted the effectiveness of cross-border collaboration among diverse response units in managing complex CBRN challenges.

Personnel in protective gear perform a decontamination procedure on transport vehicles (ERCC) © EU 2025

LEARNING

Strengthening EU preparedness through private sector collaboration

Participants at the workshop on private sector engagement for stronger EU crisis preparedness © EU 2025

In times of crisis, the collaboration between the public and private sectors emerges as a critical linchpin to alleviate the burden on affected communities. The COVID-19 pandemic demonstrated how the private sector can complement state efforts not just in the delivery of services, but through know-how, data and technology. Similarly, amidst the ongoing conflict in Ukraine, the establishment of the EU's rescEU hubs to facilitate additional private sector donations serves as a prime example of effective collaboration, providing logistics support and partial coverage of transportation costs to private donors.

On 3 and 4 April 2025, the Directorate-General for European Civil Protection and Humanitarian Aid Operations (DG ECHO) hosted a pivotal workshop on private sector cooperation under the EU Civil Protection Mechanism (UCPM). The event brought together 50 delegates from 27 countries and selected private sector representatives to discuss options for reinforced cooperation with the private sector in civil protection. It explored opportunities, models and dynamics for engaging with the private sector to enhance crisis preparedness. The initiative aims to move beyond a civil protection-centric response and contribute to the broader EU preparedness agenda.

Participants recognised that working closely with the private sector is strategic for addressing challenges in an increasingly complex threat landscape. The workshop discussed how to move from ad hoc support to systematic frameworks to enable donations from the private sector.

Furthermore, it reflected on concrete ways the public sector could achieve synergies by working with private actors already engaged in the disaster risk management (DRM) cycle, as large multinationals – particularly those with dedicated humanitarian branches – can serve as effective operational partners in large-scale crises by bridging key logistical and capacity gaps. Participants also explored coordinated, incentivised models on how to involve the private sector more extensively in stockpiling, how to streamline information sharing with the private sector, and how to integrate it into preparedness planning, training and exercises.

The workshop reaffirmed the strategic value of private sector engagement in the DRM cycle. While national authorities retain primary responsibility, the European Commission was encouraged to provide legislative, logistical and financial support to foster effective public-private partnerships. Moving forward, a collaborative and trust-based approach will be essential for building a resilient and responsive Europe in line with the vision established by the EU Preparedness Union Strategy.

First EU MODEX in Ireland tests wildfire preparedness

The first ever EU MODEX (exercises on civil protection modules, other response capacities, Technical Assistance and Support Teams (TAST), and European Union Civil Protection Teams (EUCPT)) took place in Ireland from 23 to 29 March 2025, funded by the European Commission, under the EU Civil Protection Mechanism (UCPM) Exercise Programme. Two EUCPTs, each supported by a light TAST, composed of 27 experts from various European countries took part in this unique advisory mission.

The scenario simulated an advisory mission assessing Ireland's preparedness for wildfires and forest fires. The teams evaluated national frameworks for Host Nation Support, integration of aerial firefighting resources, and inter-agency coordination. The mission aimed to review existing policies, operational capabilities, and available resources to identify gaps and provide actionable recommendations.

The first days of the exercise focused on strategic and operational meetings. Topics included Host Nation Support, aerial coordination, and forestry management. The teams then observed a national wildfire exercise in the Wicklow Mountains, which featured a large-scale, multi-agency response.

Aidan Dempsey, chief fire officer of Wicklow County Council, explained: 'The Air Corps, the National Parks & Wildlife Service, the Garda (Irish Police), the Irish Coast Guard, the Civil Defence, private helicopter operators, mountain rescue, 6 local authorities and 10 agencies participated.'

The coordinated response demonstrated during the exercise offered valuable insights into Ireland's emergency response mechanisms. Observations and findings from the advisory mission were compiled into two reports and presented to the Irish government in Dublin on the final day.

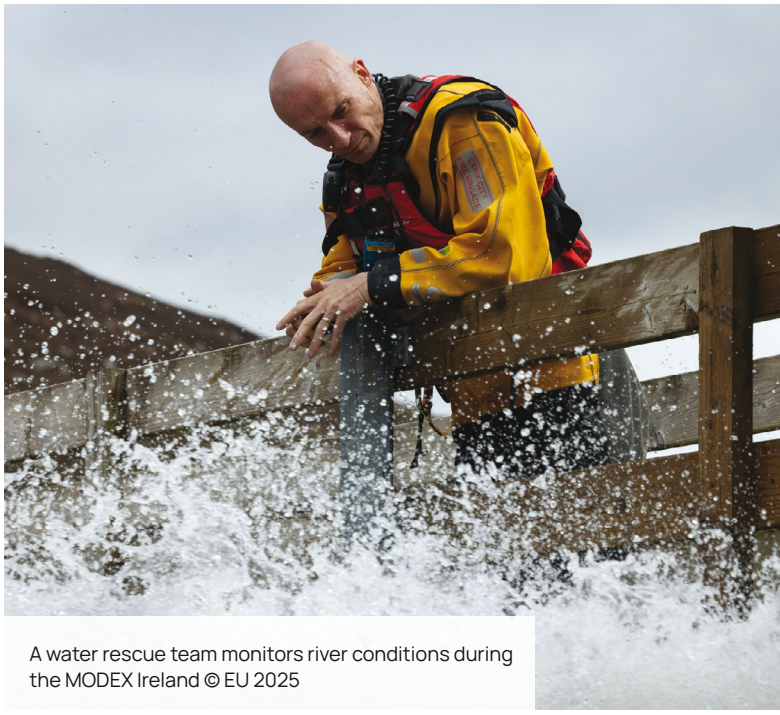
Reflecting on the week, Project Director Dr Bogdan Pop remarked: 'The exercise was an excellent opportunity for the participants and Irish colleagues to exercise together and learn from each other.'

More than 30 people from exercise control, support staff, and National Liaison Officers helped facilitate the exercise. A distinctive feature of this EU MODEX was the absence of role-players. All participants and interlocutors engaged with the teams in their professional capacity, conducting their regular duties throughout the mission. This realistic set-up added authenticity and depth to the experience.

Dr Bogdan Pop, project director for this EU MODEX, highlighted the importance of this approach:

'We conducted this advisory mission exercise with strong support from our Irish partners and good contributions of the consortium members. This set-up is very important because it focuses on training the management level of future members of EUCPTs.'

Led by Romania's Departamentul pentru Situații de Urgență (Department for Emergency Situations, DSU), the consortium and participants found the week both challenging and rewarding. The experience served as excellent preparation for future deployments under the UCPM framework.



A water rescue team monitors river conditions during the MODEX Ireland © EU 2025

Looking ahead, the second exercise of Lot 4 will take place in Tenerife in September 2025. Four members of the Cabildo de Tenerife, the island's civil protection authority, attended the Ireland exercise as observers. The opportunity equipped them with practical expertise for their role hosting the upcoming event.

Knowledge Library publication review

Gender dimensions in disaster preparedness

In each edition, we highlight a new publication in our Knowledge Library. This month, Victoria Drezniak (formerly of Unit B3, DG ECHO) considers Gender Dimensions of Disaster Risk and Resilience by the Global Facility for Disaster Risk Reduction and Recovery (GFDRR) part of the World Bank Group. For further insights on our commitment to inclusive disaster preparedness, visit our Equality page.

Civil protection responders in action during a MODEX © EU 2025

Gender dimensions in disaster preparedness

Disasters do not impact all individuals equally. According to the report, gender plays a significant role in how communities respond to and recover from disasters. Women and girls often face increased vulnerabilities in disaster situations, which are further exacerbated when combined with other factors, such as disability – a concept known as intersectionality. Recognising these distinct and intersecting experiences of men, women and gender-diverse individuals, is critical for creating inclusive disaster risk management strategies (GFDRR, World Bank).

The report states that traditional gender roles shape the distribution of responsibilities and resources within households and communities. In many societies, women's caregiving and domestic duties limit their access to information and resources essential for disaster preparedness. Studies show that women are less likely than men to receive early warnings due to their limited participation in public spheres where such information is often shared (GFDRR, World Bank).

Conversely, GFDRR and the World Bank highlight that these same caregiving roles make women adept at managing household-level crises and resource allocation during disasters. Their experience in managing food, water, and medical needs positions them as essential actors in building community resilience.

Men, on the other hand, are frequently expected to assume protective roles, such as engaging in evacuation efforts. These expectations can lead to heightened stress and risk-taking behaviours. Moreover, societal norms discourage men from seeking psychological support, which can hinder long-term recovery (GFDRR, World Bank).

Differential impacts of disasters

The report underscores that gender disparities in social and economic status exacerbate disaster impacts. Women and girls frequently encounter greater challenges in accessing healthcare, sanitation, and safety during and after disasters, highlighting the need for tailored approaches.

Economic vulnerabilities compound these challenges. Women are more likely to work in informal sectors with little job security. Disasters can lead to prolonged income loss, severely impacting their ability to recover and rebuild. In contrast, men, particularly in agriculture or heavy industries, may also face job losses but often have better access to recovery resources and financial aid (GFDRR, World Bank).

Gender-inclusive preparedness strategies

GFDRR and World Bank findings demonstrate that integrating gender perspectives into risk assessments, early warning systems, and capacity-building initiatives significantly enhances preparedness. The collection and analysis of gender-disaggregated data are essential for understanding different vulnerabilities and capacities.

The report emphasises that engaging women in disaster preparedness decision-making strengthens community resilience. Women-led community groups play a critical role in disseminating information and resources, ensuring preparedness measures reach all households. Furthermore, gender-sensitive early warning systems result in broader coverage (GFDRR, World Bank). By using multiple communication channels – social media, radio, and community networks – these systems ensure information is accessible even to those isolated by caregiving responsibilities or social norms.

Disasters are not gender-neutral events. By integrating gender perspectives into disaster risk management, policymakers and civil protection practitioners can create more inclusive strategies, leading to more effective and equitable outcomes.

To visit the Knowledge Library, including to submit a document, go to civil-protection-knowledge-network.europa.eu. To review a publication, contact ECHO-CP-KNOWLEDGE-NETWORK-PLATFORM@ec.europa.eu.

SCIENCE

How can AI strengthen disaster preparedness in Europe?

From 16 to 18 June 2025, the European Commission organised the AI for Preparedness workshop, bringing together stakeholders from public institutions, research bodies, and industry to explore how artificial intelligence (AI) can enhance disaster risk management (DRM) within the EU's Preparedness Union Strategy (PUS).

Hans Das, Deputy Director-General of the Directorate-General for European Civil Protection and Humanitarian Aid Operations (DG ECHO), opened the workshop, noting the increasing frequency and severity of natural hazards, emerging security risks, and budget constraints. He emphasised AI's potential to improve disaster prevention, early warning and response systems, highlighting the necessity to bridge gaps between research and practical implementation.

'New technologies such as AI can be game-changing, but we need to invest in closing the gap between funding research and actually getting the projects into operation', said Hans Das.

Two panel discussions provided practical examples of AI applications in Europe, including digital twins, early warning systems, and satellite monitoring tools by companies like ICEYE and OroraTech. Participants highlighted the importance of public-private partnerships, transparent data sharing, ethical standards, and end-user engagement to ensure practical value and trust in AI tools.

On the second day, technical sessions showcased practical AI tools under EU and national programmes. The Destination Earth initiative demonstrated digital twins for disaster forecasting. The Joint Research Centre (JRC) discussed explainable AI to ensure transparent, understandable outputs.

Notable initiatives included:

- C2IMPRESS: cross-border disaster management with real-time scenario planning;
- SafeLand: AI for assessing landslide risks in data-limited regions;
- ENSOSP and Entente Valabre: AI-powered realistic training simulations for French firefighters;
- CARMA: autonomous robots enhancing human response in complex disaster scenarios;
- SYNERGISE: ANYmal robot, capable of navigating dangerous environments to locate victims.

'AI is not a standalone solution. It must be embedded into operational workflows and linked to legal, ethical, and societal safeguards', said Christina Corbane (JRC).

On the final day, breakout groups identified critical areas where AI could significantly impact DRM, including early warnings, real-time situational awareness and rapid impact assessment. Discussions addressed challenges like fragmented data, trust issues and infrastructure gaps. Participants emphasised the importance of tailored training programmes focusing on ethical considerations and practical application.

Recommendations included clear procurement guidelines, stronger collaboration across ministries and enhanced involvement of end users.

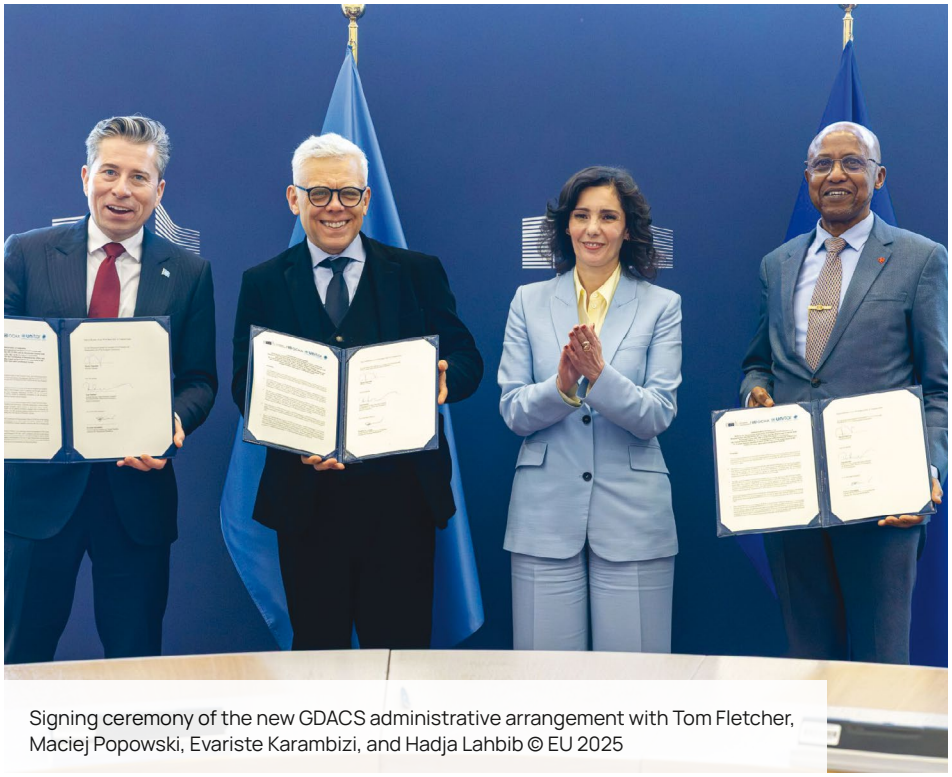
Concluding the event, DG ECHO stressed the importance of collective efforts in training, coordination, and governance frameworks. Outcomes from the workshop will inform future initiatives, reinforcing the EU's commitment to effectively integrating innovation into disaster preparedness and response efforts.

Panel discussion at the AI workshop © EU 2025

Upcoming actions

- Developing AI-focused disaster preparedness e-learning on the EU Academy
- 4th Destination Earth User eXchange (25-26 June, Vienna)
- Combined Copernicus Emergency Management Service (CEMS) and Disaster Risk Management Knowledge Centre (DRMKC) annual event (4-6 November, Turin)
- Hosting the 3rd UN global initiative meeting on AI for resilience in early December

Administrative arrangement strengthens early warning and global disaster response



Signing ceremony of the new GDACS administrative arrangement with Tom Fletcher, Maciej Popowski, Evariste Karambizi, and Hadja Lahbib © EU 2025

'If GDACS had not been invented 20 years ago, we would have invented it now, in a hurry, given the acceleration of natural disasters we are witnessing.' This is an indirect quote from one of the speeches at the signature ceremony of the new administrative arrangement for the Global Disaster Alert and Coordination System (GDACS), on 19 March 2025.

Signed by the UN Office for the Coordination of Humanitarian Affairs (UN-OCHA) Coordinator Tom Fletcher, Directorate-General for European Civil Protection and Humanitarian Aid Operations (DG ECHO), Director-General Maciej Popowski, and the United Nations Institute for Training and Research (UNITAR) Director Karambizi with Commissioner for Preparedness and Crisis Management Hadja Lahbib as witness, this formalised arrangement reaffirms the successful collaboration between the European Commission (DG ECHO and the Joint Research Centre (JRC)), UN-OCHA, and UNITAR / United Nations Satellite Centre (UNOSAT). The video of the signing ceremony is available here.

For over 20 years, GDACS has been a vital early warning tool, providing rapid impact estimations, early alerts and anticipatory actions. As a globally recognised platform, it plays a key role in international humanitarian aid and disaster relief, ensuring timely and effective interventions that save lives.

In its 21 years of operations, GDACS has supported the humanitarian community in responding to more than 130 000 events, including the 2004 Indian Ocean tsunami, the 2013 Typhoon Haiyan, the 2015 Nepal earthquake and the 2023 Türkiye-Syria earthquake. By acting as a central hub for coordination, it enhances collaboration between the United Nations, the European Commission and disaster managers worldwide.

This arrangement strengthens long-standing cooperation and ensures continued investment in GDACS. It also highlights the excellent collaboration not only with UN partners but also between Commission services, particularly DG ECHO and the JRC. The goal is to enhance its capabilities, solidifying its role as the main alert, information-sharing and coordination platform for the international disaster management community.

As climate change increases disaster risks, this partnership underscores a shared commitment to preparedness and rapid response. With improved technology and coordination, GDACS will continue to make a difference, ensuring the world is better equipped to handle future crises.

Flooded streets and strong winds impact a residential area during a tropical storm © Satoshi Kina - adobe.stock.com

Transparent intelligence: how XAI enhances risk management

Artificial Intelligence (AI) is revolutionising how we forecast and understand extreme events, from hurricanes to heatwaves. Faster and more accurate predictions promise to sharpen our preparedness and response – yet many AI models remain 'black boxes', obscuring how they reach their conclusions. In high-stakes settings such as civil protection and humanitarian aid, this opacity can undermine trust and stall adoption. Explainable AI (XAI) bridges that gap by illuminating model logic, bolstering confidence, and enabling experts to make informed, accountable decisions.

This is where XAI plays a pivotal role, providing much-needed insight into how AI systems reach their conclusions and supporting more informed decision-making in disaster risk management (DRM). XAI enhances our understanding of 'black-box' models, fostering trust in their outputs and potentially accelerating their adoption.

To address the lack of transparency in black-box models, XAI techniques aim to clarify model decisions, such as by identifying which features most influence predictions and visualising image regions leading to a specific classification. It can expose unintended biases, detect spurious correlations, and help identify errors – making AI systems more robust, fair, and accountable.

Such interpretability is crucial for decision-makers in civil protection, who must validate AI-driven insights against their domain expertise and physical understanding of natural hazards. Thus, AI holds transformative potential for understanding, predicting, and communicating extreme weather and climate events. By enabling accurate, transparent, and trustworthy models that integrate limited and heterogeneous data, AI can support disaster preparedness and risk reduction.

The European Commission's Joint Research Centre (JRC) recently applied XAI to DRM in several areas guided by three pillars: interpretability, probabilistic forecasting with uncertainty estimates, and integration of expert knowledge. One application involves analysing displacement triggered by extreme weather events. By combining XAI with causal inference methods, researchers go beyond identifying correlations to uncover underlying causes of forced migration. These insights can directly inform policy and improve the design of emergency response strategies.

In another analysis, machine learning models forecast internal displacement caused by violent conflict. These models anticipate large-scale migration patterns, providing critical lead time for humanitarian agencies. XAI techniques ensure model reasoning is transparent and accessible to decision-makers.

JRC has also applied XAI models to assess climate hazards impacting agriculture in Europe, such as droughts and heatwaves. These models not only detect vulnerable areas but also explain the main contributing factors behind each prediction, ensuring consistency with expert understanding and improving trust in early warning systems (see Fig. 1).

Across these examples, one lesson stands out: for AI to meaningfully support disaster risk management, it must be transparent and trustworthy. Interpretability allows experts to assess not only **what** is being predicted, but also **why** and **how likely** the outcome is. This empowers civil protection agencies and humanitarian actors to validate predictions against real-world knowledge and act with greater confidence. Embracing explainability is not just about improving AI – it is about building systems that earn trust and support critical decisions to protect lives, livelihoods and infrastructure in the face of growing risks.

Contact:
Michele Ronco michele.ronco@ec.europa.eu,
Arthur Hrast Essenfelder, arthur.hrast-essenfelder@ec.europa.eu.

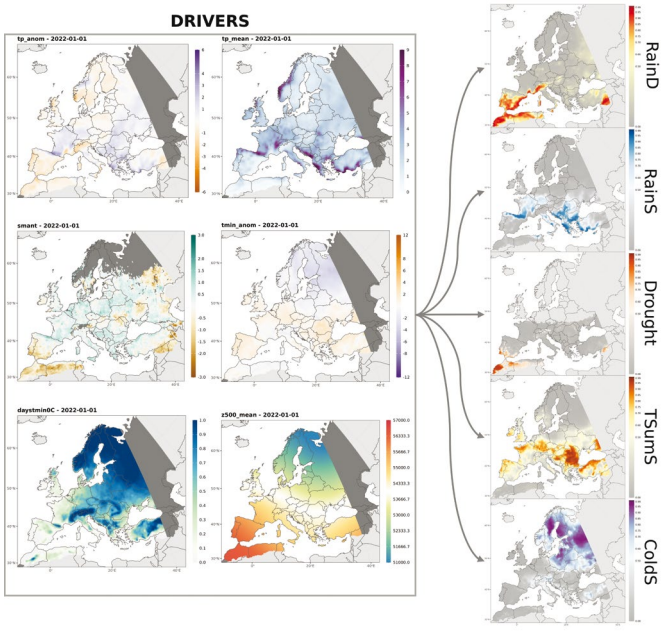


Figure 1: Expert-driven XAI model outputs showing multi-hazard probabilities across Europe. Left: meteorological drivers (e.g. temperature, precipitation). Right: predicted hazard classes (e.g. rain deficit, rain surplus, drought, temperature surplus, and cold spell) where darker colours indicate higher hazard probability (Essenfelder et al., 2025).

New technologies can save lives: the commitment of Tiina Ristmäe

Innovative ground robot SMURF used in urban search and rescue exercises to detect and locate victims under debris
© EU 2025

Tiina Ristmäe, project coordinator at Germany's Federal Agency for Technical Relief (THW), believes research can improve the lives of first responders and increase the number of people they save. Her work on the CURSOR project is a key example, offering solutions that enhance preparedness and improve disaster response. The project has gained international attention, including showcases at the G7 Summit and the 2025 Osaka World Expo.

Tiina is also a member of the Commission expert group for the Community for European Research and Innovation for Security (CERIS) and a co-author of its first report. Coming from a background in safety promotion and crime prevention, she initially wondered how to contribute to research without a scientific background – yet she has since become a driving force in the development of technologies for disaster response.

'I enjoy collaborating with researchers, industry partners and first responders', Tiina says. 'We can encourage people to try things out in a safe environment that would be dangerous in real-life operations.'

Her experience in CURSOR underscored the importance of involving first responders in development. 'When I involve THW responders to test our technologies, I see how interested they are that someone is working to improve the way they operate.'

One such solution is SMURF, a small robot that can detect people trapped under rubble. The robot's design was directly improved based on first responder feedback: 'The original wheels were not suitable for post-earthquake surfaces. Responders suggested a better type, which was implemented in the next prototype – a significant improvement.'

Clear communication is critical: 'Feedback from first responders is crucial in ensuring that the technologies we develop meet their needs and are effective in real-world scenarios. By involving them in the development process, we can identify potential issues and make improvements that might not have been apparent otherwise', she notes. Their input ensures the tools meet operational needs – even if that means a tool is deemed unfit.

Tiina also sees value in Horizon Europe's Cluster 3 requirement to involve end-users: 'We now need to clearly define their role and what testing and validation mean in practice.'

Her advice to new applicants: 'Just do it. There's nothing to lose. At THW, we began as an associated partner, then became a partner and now we coordinate projects. It is a learning process.'

Projects like CURSOR and SYNERGISE demonstrate how new technologies can support disaster response and preparedness. Tiina stresses the importance of training – not only for first responders but also for local officials who are key in decision-making during emergencies.

The EU Preparedness Union Strategy promotes 'preparedness by design' and outlines 30 actions to improve resilience. Tiina's work reflects this, highlighting the need for collaboration, innovation and training. By developing user-informed technologies, EU research helps save lives.

Launch of the SUNSHINE pilot project: improving accessibility and promotion of EU space services for disaster management

Based on a recommendation from the European Parliament, and building upon the Niinistö report, the European Commission has launched the SUNSHINE project to **encourage national civil protection entities to better utilise EU space services**.

SUNSHINE aims to bridge the gap between EU space capabilities and the operations of civil protection authorities. The project seeks to increase the uptake and understanding of EU space-based services, such as:

- the Galileo Emergency Warning Satellite Service (EWSS);
- the Copernicus Emergency Management Service (EMS);
- Space Situational Awareness (SSA);
- the European Union Governmental Satellite Communications (GOVSATCOM), which provides secure satellite communications using existing capacities operated by EU Member States;
- and IRIS², a new system designed to provide secure government telecommunications as well as the Galileo authentication capability 'OSNMA'.

The project will offer live training seminars, webinars, dedicated bilateral meetings with civil protection experts, simulation exercises, demonstrations, and tailored technical assistance for integrating EU space services into national systems.

Group photo of participants at the kick-off meeting of the SUNSHINE project © EU 2025

The training content that will be developed will be made available on the EU Civil Protection Mechanism (UCPM) Knowledge Network portal in the form of training modules that can be reused offline by the civil protection community.

The first live seminar will take place in Strasbourg, France, in September 2025, for three days. Stay tuned for further information!

Fostering disaster resilience across Europe

SUNSHINE seeks to improve the understanding and accessibility of the EU space services for disaster management within EU Member States. A cornerstone of the project is its comprehensive **capacity building programme**, designed to increase knowledge of EU space assets and operational uptake across EU Member States. This capacity building programme includes:

- **training:** tailored sessions to build foundational and advanced expertise in using EU space services such as Galileo EWSS and Copernicus EMS;
- **demonstrations:** practical showcases of EU space services in action, highlighting their value in real-world disaster scenarios;
- **simulation exercises:** hands-on activities that replicate disaster events, enabling participants to apply EU space data and tools in a controlled environment to improve response capabilities;
- **integration support of Galileo EWSS:** online and on-site technical assistance and tailored guidance, assisting national authorities to effectively integrate Galileo EWSS into their national alert systems.

The project is led by Telespazio France and was officially launched at the European Commission's Directorate-General for Defence Industry and Space (DG DEFIS) premises in Brussels, Belgium, on 23 January 2025. It will run for 24 months.

Status of disaster damage and loss data management in Europe

A recent Joint Research Centre (JRC) report investigated the current practices, challenges and opportunities in disaster loss data collection and management among the 37 countries participating in the EU Civil Protection Mechanism (UCPM). In October 2024, a survey was sent to the UCPM Member States and Participating States. The survey was developed by the Risk Data Hub (RDH) team from the JRC with support from the Directorate-General for European Civil Protection and Humanitarian Aid Operations (DG ECHO). It included 36 questions covering disaster loss data collection practices and processes, methodology and quality control, and data usage and sharing. Responses were received from 23 institutions across 18 European countries.

The survey revealed considerable variations among the countries. While over half reported having legal frameworks to support disaster loss and damage data collection, nearly 40 % indicated the absence of such frameworks. It covered both natural and technological hazards. Most countries noted that they collect data for both types; however, a quarter of the participants focus solely on disaster losses related to natural hazards, and 4 % concentrate exclusively on technological hazards.

Among the disasters related to natural hazards, losses from flash floods were the most frequently recorded, followed closely by river floods and wildfires. Losses from storms, droughts, heatwaves, and epidemics are commonly documented, while tsunamis and volcanic activity are less frequently documented.

Furthermore, the survey inquired about the types of losses, distinguishing between economic and non-economic. Results indicated that direct economic losses, such as those resulting from damage to buildings, are the most frequently reported. Indirect economic losses, including business interruptions, are also collected but to a lesser extent. Non-economic data primarily focuses on fatalities, affected populations and injured individuals.

The survey also explored the tools used for collecting disaster loss data, the spatial levels of interest, and additional questions regarding methodologies, frequency, standards and data validation.

The survey concluded by identifying current challenges in disaster loss data collection and highlighting key areas needing international cooperation. Reported obstacles include resource limitations, institutional fragmentation, and legal and regulatory barriers, such as privacy concerns. Despite the widespread recognition of the importance of data sharing, legal restrictions and the lack of formal agreements still impede cross-border and multi-institutional collaboration.

Therefore, the report underscores the need for harmonised guidelines for loss data collection and centralised reporting systems. Guidelines are crucial to ensuring consistency in disaster loss data management, facilitating cross-border data sharing and knowledge exchange, and supporting a more coordinated response to transboundary disasters.

A new RDH Disaster Losses and Damages Dashboard has been developed for a comprehensive overview of disaster losses throughout Europe, highlighting the results of data collection, harmonisation, and disaggregation efforts. This dashboard enables users to examine disaster losses across the EU-27 and at the country level from 1980 to the present.

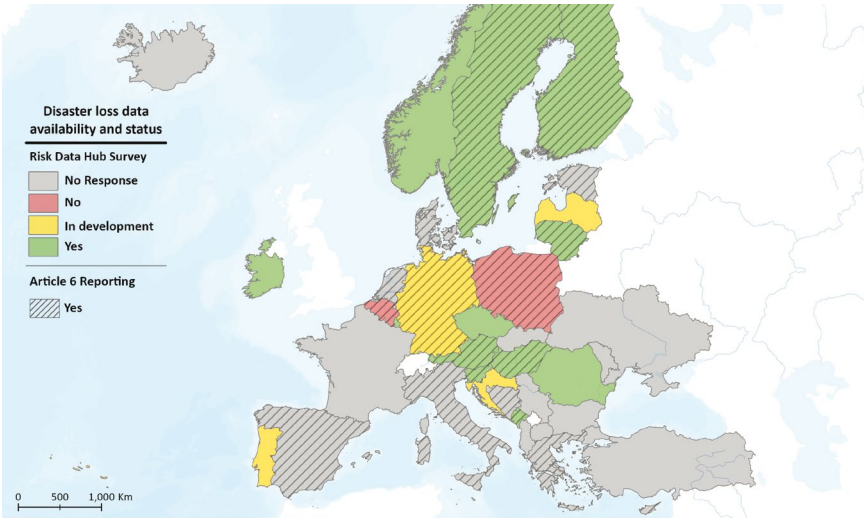


Figure 1: Map of the UCPM participating countries showing their responses to the current survey on disaster loss data (green for countries that collect disaster loss data, yellow for countries with systems in development, red for countries currently with no system in place, and grey for countries that did not reply). Hatched areas indicate countries that reported having a disaster loss data collection process in place as part of the response to question 18 in the 2023 call related to the Reporting Guidelines on Disaster Risk Management, Art. 6(1)d of Decision No 1313/2013/EU.

Source: Data from DG ECHO, map produced by JRC, RDH

Contact information
Christos Bountzouklis:
christos.bountzouklis@ec.europa.eu

Country	River Flood	Coastal Fl.	Flash Flood	Mass movement	Earthquake	Tsunami	Wildfire	Storms	Drought	Heatwave	Coldwave	Volcanic activity	Epidemic	
AT	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No	9
BE	No	No	No	No	No	No	No	No	No	No	No	No	No	0
CZ	Yes	No	Yes	No	No	No	Yes	Yes	No	No	No	No	No	4
DE	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	10
FI	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes	9
HR	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	13
HU	No	No	No	No	No	No	Yes	No	No	No	No	No	No	1
IE	Yes	Yes	Yes	No	No	No	No	Yes	No	No	Yes	No	No	5
LT	Yes	No	Yes	Yes	No	No	Yes	Yes	Yes	No	No	No	Yes	7
LU	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	9
LV	Yes	Yes	Yes	No	Yes	No	Yes	No	No	Yes	Yes	No	Yes	8
ME	No	No	Yes	No	Yes	No	Yes	No	No	No	No	No	Yes	4
NO	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	12
PL	No	No	No	No	No	No	No	No	No	No	No	No	No	0
PT	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	12
RO	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	11
SE	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No	No	Yes	9
SI	Yes	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No	No	No	7
	14	9	15	8	10	2	14	13	11	11	10	2	11	

Figure 2: Types of natural hazards covered in data collection: the number of institutions covering each type of natural hazard in their data collection.
Source: JRC, RDH, 2025

	Economic losses			Non-economic losses					
Country	Direct	Indirect	Insured	Fatalities	Affected population	Injured population	Agricultural	Cultural heritage	Critical infrastructure
AT	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes
BE	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
CZ	Yes	No	No	Yes	No	Yes	No	No	No
DE	Yes	No	No	Yes	Yes	No	No	No	No
FI	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes
HR	Yes	No	No	No	No	No	No	No	No
HU	No	No	No	Yes	No	Yes	No	No	No
IE	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
LT	Yes	No	No	Yes	No	Yes	Yes	Yes	Yes
LU	Yes	No	No	No	No	No	No	No	No
LV	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
ME	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes
NO	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No
PL	No	No	No	No	No	No	No	No	No
PT	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No
RO	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No
SE	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes
SI	Yes	Yes	No	No	No	No	Yes	Yes	No

Figure 3: Number of reports for each loss type: the number of reports documenting each type of loss.
Source: JRC, RDH, 2025

Europe's interconnected risks need a unified response

Visual representation of key risks facing the EU: health emergencies, environmental degradation, climate-related disasters, and cybersecurity threats © EU 2025

A new Joint Research Centre (JRC) report reveals a complex and evolving risk landscape in Europe, shaped by climate change, geopolitical tensions and technological advances. Scientists analysed 47 risks – natural and human-made – that threaten people, infrastructure, economies and the overall stability of the EU.

Europe needs a comprehensive, all-hazard approach involving all of society to manage these risks and to protect vital systems.

The report benefited from strong collaboration between the JRC and the Directorate-General for European Civil Protection and Humanitarian Aid Operations (DG ECHO), reflecting the need to integrate science and policy to address today's complex risk landscape.

Risks are complex, interconnected, cross-border – and intensifying

Based on 38 reports from EU institutions, relevant scientific publications and stakeholder consultations, the report finds that the risk landscape in Europe is well documented. However, it also reveals fragmentation across risk definitions and classification, methodologies, and standards. While these heterogeneities pose significant challenges, they also present an opportunity for improvement.

Scientists highlighted that risks rarely occur in isolation. Climate change, for example, is causing more intense wildfires and longer wildfire seasons which negatively impact air quality, health and the economy. Cyberattacks, for example, can disrupt interconnected systems across EU countries, as with floods and pandemics, which spread across borders and require coordinated responses.

This study identified several common risk drivers among the 47 risks examined: geopolitical instability is the most common, followed by weak governance, climate change and urbanisation.

Different types of risks – related to natural, technological, or societal hazards – often result in overlapping and cascading impacts. A frequent outcome is economic disruption, which can ripple through supply chains, damage industries, create geopolitical tensions and impact livelihoods.

The report also examined losses associated with each risk, demonstrating that cyber threats, climate-driven weather extremes, hydrological and geophysical events, biological hazards, and technological disruptions all show a marked rise in both direct and indirect consequences. These often affect multiple and vital functions.

Building resilience by managing growing risks and threats

Enhanced foresight capabilities are essential for addressing critical, yet often low-probability risks, such as solar storms, nuclear incidents or pandemics. Earth system tipping points are also facing a major threat. Scientists have identified 16 'tipping points' that could trigger severe consequences if crossed. While past tipping points may have occurred over centuries or even millennia, future ones could potentially occur in mere decades (e.g. coral reefs, subpolar gyre) to centuries (e.g. Atlantic Meridional Overturning Circulation (AMOC)).

To stay ahead of the risks facing Europe, the EU must adopt a comprehensive approach to prevention and preparedness. This requires an inclusive, multi-sector approach to risk management.

FROM THE COMMUNITY

Europe moves towards unified wildfire strategy

As wildfires grow more frequent and severe, experts from across Europe gathered in Brussels to propose a new Integrated Wildfire Risk Management (IWFRM) Strategy, aimed at bridging gaps between science, policy and operational preparedness.

The two-day event, Innovating with Wildfire Risk Management – A New Strategy for Europe, was convened by the Firelogue coordination project alongside the European Research Executive Agency (REA), with support from four major European Green Deal research initiatives: **FirEUrisk, FIRE-RES, SILVANUS and TREEADS**. Together, these projects have identified systemic weaknesses in wildfire management and designed solutions to address them. Their joint efforts underpin the draft strategy proposal.

One key aim is to shift from fragmented, reactive responses to a shared, proactive framework that builds long-term resilience. In the face of climate change, which is reshaping Europe's fire risk geography, this shift is urgent.

'Wildfires are no longer seasonal phenomena', said one project lead. 'They are persistent, systemic threats – and they require a systemic response.'

While wildfires have long impacted southern Europe, northern and central regions are now increasingly affected. This has stressed civil protection systems and revealed the need for stronger EU-level coordination.

The strategy supports the EU Civil Protection Mechanism (UCPM), promoting a holistic approach that connects landscape management, preparedness, awareness and real-time data. Local authorities are seen as critical actors, requiring greater investment in prevention capabilities.

Europe must treat wildfire not just as a seasonal emergency, but as a year-round governance challenge, demanding cross-border cooperation.

The proposal goes beyond goals, offering operational tools grounded in research. Innovations include drone-monitoring systems, risk-simulation platforms and mobile apps for first responders. A virtual-reality training module allowed teams to experience simulated fire scenarios.

While promising, speakers stressed that technology alone is not enough – implementation must be supported by training, political will and investment.

Collaborative platforms such as fire forums, which bring together scientists, civil protection agencies and policymakers, are essential for building trust and sharing knowledge – especially in regions with limited institutional capacity.

Participants engage in an open discussion during a breakout session at the Firelogue project closing event © EU 2025

The event concluded with a round-table discussion including representatives from the Directorate-General (DG) for European Civil Protection and Humanitarian Aid Operations (DG ECHO), DG for Environment (ENV), the Joint Research Centre (JRC), the World Bank and national agencies. Discussions focused on aligning the strategy with existing EU programmes and identifying legal and institutional gaps.

'The strategy offers a blueprint, but its success will depend on political will and institutional readiness at all scales', one official remarked.

With wildfire risk escalating, the IWFRM Strategy marks a turning point in Europe's climate adaptation efforts. By linking research to practice and prioritising civil protection, the strategy proposes a long-term approach to preparedness.

The next step is collaboration between the Commission, Member States and regions to translate this proposal into policy.

To access the strategy working document, visit – An Integrated Wildfire Risk Management Strategy for the EU: developing resilient landscapes and safer communities. To take part in a short survey on the strategy proposal, go to http://bit.ly/4krxRyb.

Integrating coordination and medical evacuation in disaster response: the Italian CROSS experience

Civil protection and air force teams prepare for a CROSS-coordinated medical evacuation aboard a C-130 aircraft © EU 2025

Medical evacuation (Medevac) is increasingly vital in disaster response, enabling patient transfers by sea, land or air from areas where accessible healthcare is insufficient. Effective integration of coordination and evacuation capabilities ensures operational success.

The CROSS (Centrale Operativa per le Operazioni di Soccorso Remoto in Italian) is the operational arm of the Italian Department of Civil Protection and has gained extensive experience in coordinating numerous disaster relief operations, particularly involving Medevac. Notable operations include the earthquake in Albania, the COVID-19 pandemic, the crisis in Ukraine, and the evacuation of severely burnt patients from Libya and Armenia. These operations were conducted under the supervision of the Italian Department of Civil Protection, some of them within the framework of the EU Civil Protection Mechanism (UCPM) operations.

More recently, since early 2025, the CROSS has established operational cooperation with the Italian Air Force (46th Brigade), aimed at developing a rapidly deployable evacuation capability with a well-defined standard of care. The advantages are shorter response times, guaranteed availability of resources and the ability to assist even critically ill patients. Specifically, this project integrates healthcare personnel from the national health system with military air force personnel (including pilots, flight crew and sometimes additional health staff) to operate onboard C-130 military aircraft and can be activated within 12 hours. This operational set-up enables the evacuation of patients with varying levels of criticality (up to four patients requiring ventilatory support). The configuration also considers the number of relatives accompanying each patient (depending on the mission set-up), which is crucial, particularly for paediatric patients.

In some scenarios, it is also possible to send an assessment team in advance to optimise the entire Medevac process. This asset has proven especially useful in complex scenarios, where obtaining patients' up-to-date medical information remotely is challenging.

Since the agreement with the air force, four Medevac operations have been successfully conducted (three from Gaza and one from North Macedonia), involving 35 patients, many of whom were children. The most frequent medical conditions were oncological diseases and burn-related injuries, treated at 17 highly specialised Italian hospitals.

This initiative represents one of the first experiences combining an advanced coordination capacity (CROSS centre) with a variable-set-up Medevac capability. Thus far, the experience has proven to be an effective strategy for the timely transfer of high-need patients, often belonging to vulnerable populations, to non-disaster countries where specialised resources are available. Concrete advantages have emerged from the civil-military integration, where the combination of experiences, competencies and operational protocols has enabled a particularly effective synergy in managing high-complexity operations.

Authors

Bargagna M., Aiardi M., Alesi A., Annovi A., Avvanzo G., Biagini A., Bruschi G., Ciambriello S., Coduti F., Desideri B., Fini F., Menici R., Pace G., Pagliai S., Petrucci N., Prudentino F., Riganti C., Selmi L., Tempestini L., Paolini P., Nicolini A.

Breaking ice with local communities through philosophical cafes for enhancing disaster preparedness – A Japanese experience

Philippe Quevauviller
University of Pau and Adour Region, France

The way in which societies react to disasters is highly dependent upon the culture of risks that local communities may have acquired through education and/or sometimes their own experiences. This culture is closely related to social inclusion, societal resilience, and the level of knowledge that people may gain from evidence-based information. However, according to recent Eurobarometer surveys (June 2024), almost half of European citizens (49 %) do not feel well informed about disaster risks that could affect them, and 65 % of them call for more information that would enable them to be better prepared for disasters or emergencies.

In this respect, an approach used by Japan might provide an inspiration for Europe. Japan regularly faces geohazards and extreme weather events, prompting the country to experiment with different ways of communicating risk prevention and preparedness information to local communities, in particular to vulnerable (elderly and children) people in rural areas. Through the leadership of Prof. Yama (Kwansei Gankui University), who participated in philosophical cafes while studying in Paris, and Prof. Norio Okada (Kyoto University), the principle of such 'philosophical' meetings has been adapted to collect testimonies of local community representatives about their knowledge or feelings related to disaster threats.

Gatherings of local people are regularly organised with the involvement of academic people who are there to listen and share knowledge. Discussion topics are chosen with the audience (e.g. personal responsibility in the event of a disaster, intergenerational transfer of knowledge, etc.) and participants freely express their views, experiences and knowledge.

Experiences in Higashimyioshi on 15 December 2024 and Suzu in the Noto Peninsula in early January 2025 highlighted the value of such exchanges, which was further discussed in one of the sessions during an EU-Japan workshop co-organised by the Disaster Prevention Research Institute (DPRI) of Kyoto University and the European Commission (Community of European Research and Innovation for Security (CERIS)) on 3 to 4 March. The workshop involved EU-funded projects, Japanese university representatives and first-responders.

This experience showed that philosophical cafes represent an innovative way to enhance public awareness and societal disaster resilience, acting as 'eye and heart openers' to realities often overlooked by populations. In other words, such gatherings can effectively engage communities. This approach could strengthen local communities' awareness in the EU and (re)build a culture of risks that has often faded, especially as threats to societies are increasing, affecting particularly vulnerable populations.

The Japanese experience, originally inspired by European practice, offers new ways to combine evidence-based information and innovative artistic approaches to enhance risk awareness and societal resilience, which aligns closely with the EU Preparedness Union Strategy.

Using gathering practices through art, and in particular through philosophical cafes, could represent a necessary paradigm shift towards a culture of preparedness and resilience in an 'all-of-society' approach.

Residents take part in a philosophical café in Japan, fostering dialogue on disaster preparedness and community resilience © EU 2025

EPOS ON calls for expert collaboration in early warning systems

Search and rescue team with dog during an urban disaster response exercise © EU 2025

The European Plate Observing System (EPOS) is a multidisciplinary research infrastructure that integrates solid Earth science data, models, and facilities across Europe. It fosters collaboration among scientists, decision-makers, and the public to improve understanding of geohazards, georesources, and Earth dynamics. EPOS supports open access to high-quality findable, accessible, interoperable, and reusable (FAIR) data, crucial for earthquake, volcano, tsunami, and geodesy research. Since becoming fully operational in 2023, EPOS has continuously evolved to better respond to emerging needs in geoscience research.

Building on this foundation, the EPOS Optimization and EvolutioN (EPOS ON) initiative is actively seeking input to align its services with the needs of frontline practitioners and decision-makers. Civil protection and disaster risk management stakeholders are invited to contribute their expertise and help shape future disaster resilience efforts through EPOS ON.

This new initiative aims to deepen interdisciplinary collaboration and establish stronger links with both early-career researchers and the private sector. It will also promote ethical standards, evaluate environmental sustainability, and increase the overall impact of Earth science research.

EPOS ON will enhance EPOS's capacity to define concrete services that contribute to tackling societal challenges by improving interoperability, refining forecasting models and supporting real-time alerting systems. Key activities include developing integrated platforms and rapid-impact assessment tools, as well as fostering collaboration between scientific, technological and operational communities.

A central component of the EPOS ON project is advancing and integrating services for early warning and rapid post-event assessment for earthquakes, tsunamis and volcanic activities. The resulting innovations will leverage the application of EPOS services to boost preparedness capacities for communities facing natural hazards.

EPOS ON encourages civil protection authorities and disaster risk experts to actively participate in shaping existing and future EPOS services. Stakeholders interested in collaboration are urged to engage directly with the project team (Giovanna Forlenza at giovanna.forlenza@ingv.it and Fabrizio Romano at fabrizio.romano@ingv.it) to share specific requirements and insights, helping to ensure the initiative's outcomes effectively address real-world needs.

IN CASE YOU MISSED IT

Save the date: DRMKC/CEMS event, 4-6 November – Turin

Mark your calendars for the upcoming Disaster Risk Management Knowledge Centre (DRMKC) seminar, this year in a special format as a joint event with the Copernicus Emergency Management Service (CEMS)! Join experts, policymakers, and stakeholders to collectively advance disaster risk reduction and management efforts, in the framework of the newly established Preparedness Union Strategy. The seminar will explore concrete actions, the role of technology and innovation, and advances in science towards robust all-hazards, whole-of-government, and whole-of-society approaches to enhance preparedness.

Registration details and updated information will be available here.

Behind the scenes at an EU MODEX

The European Union's MODEX programme provides critical training environments for emergency response teams preparing for large-scale disasters. Stakeholder Communications Coordinator, Stacey Vickers, went behind the scenes at the recent EU MODEX in Lisbon and offers exclusive insights from the simulation, documenting how these comprehensive field operations enable civil protection authorities to refine their protocols under realistic conditions.

European Union

Union Civil Protection Knowledge Network

@EU MODEX

Want to keep up to date about events in civil protection and disaster risk management?

Then check out the events section on the Knowledge Network online platform.

European Civil Protection and Humanitarian Aid Operations – Union Civil Protection Knowledge Network

Email: ECHO-CP-Knowledge-Network@ec.europa.eu
Website: https://civil-protection-knowledge-network.europa.eu

KR-AF-25-001-EN-N (PDF) / KR-AF-25-001-EN-C (PRINT)

#CivProKnowNet