Union Civil Protection Knowledge Network

INTRODUCTION

Civil Defence Commander of Cyprus Maria Papa © EU 2025

Dear Reader,

As Cyprus assumes the Presidency of the Council of the European Union for the first semester of 2026, Cyprus Civil Defence is honoured to address the civil protection community through the Knowledge Network newsletter. Our Presidency arrives at a pivotal moment, as Europe continues to confront increasingly complex crises that demand stronger preparedness, deeper cooperation, and a more resilient Union Civil Protection Mechanism.

A central focus of our Presidency will be the ongoing discussion on the future role of the Union Civil Protection Mechanism within a broader crisis management framework. Cyprus is committed to facilitating constructive dialogue that strengthens our collective capacity while respecting national competencies.

Our Presidency will also play a key role in advancing the EU Preparedness Union Strategy, supporting work on population preparedness, public–private cooperation, civil military coordination, and the resilience of vital societal functions, including the EU Stockpiling Strategy. These efforts reflect our belief that preparedness must be comprehensive, inclusive and forward-looking.

Civil military cooperation will be a priority area. Effective crisis response often depends on seamless collaboration between civil authorities, military actors and EU institutions. Cyprus brings practical experience to this discussion, and we look forward to sharing lessons learnt and supporting the development of EU-level best practices, particularly in the field of mass evacuations.

Our Presidency will guide discussions on strengthening the resilience of critical entities under the new Critical Entities Resilience Directive. We see this as a crucial moment to support implementation efforts and ensure that essential services can withstand and recover from disruptions.

This newsletter showcases the wealth of hard work and collaboration taking place in our community in the areas of preparedness, civil protection and disaster risk management. The special focus on AI in civil protection is particularly inspiring and an area that holds much potential for our work.

Cyprus Civil Defence is committed to fostering a safer, more resilient Europe. We look forward to working closely with the Knowledge Network community throughout our Presidency.

Yours sincerely,

Maria Papa
Civil Defence Commander

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AI DOSSIER

Turning data into decisions: how AI is shaping disaster risk management – An interview with the Secretary-General of the World Meteorological Organisation, Celeste Saulo

By Jo-Anna Van Vlaenderen, Unit B3, DG ECHO

Celeste Saulo, Secretary-General of the World Meteorological Organization, speaking at the Global Initiative on Resilience to Natural Hazards through AI Solutions © EU 2025

Celeste Saulo is a meteorologist and has served as Secretary-General of the World Meteorological Organization (WMO) since 2024. The WMO, a UN specialised agency, supports nations – particularly the most vulnerable – in building resilience to weather and climate hazards. Prior to this, Professor Saulo was director of Argentina's National Meteorological Service, leading institutional reforms and strengthening science-based climate and weather services for disaster risk reduction. Saulo is also a full professor at the University of Buenos Aires and a research scientist at the National Council for Scientific and Technical Research.

How do you see the role of AI evolving in disaster preparedness, early warning systems and climate risk management?

At the WMO, our work spans the full value chain of atmospheric monitoring: observation, modelling, improving forecast quality, and disseminating information in ways that make it accessible and actionable. AI supports every step.

Firstly, in terms of observation, AI is extremely valuable for quality control, data management, and handling diverse data formats and sources.

Secondly, regarding detection, it is about rapidly recognising patterns that may indicate severe or damaging events. AI plays a crucial role in identifying signals that might not be immediately visible to the human eye.

> 'AI plays a crucial role in identifying signals that might not be immediately visible to the human eye.'

AI also has a major impact on visualisation. We deal with enormous volumes of data, and AI helps transform this data into formats that are truly actionable for decision-makers.

Finally, experts and decision-makers need to understand what forecasts mean in practice, for example, how heavy rainfall might affect schools, businesses or emergency management operations. AI can support this translation, turning meteorological information into actionable insights across sectors.

Which recent developments in AI for weather forecasting and early warning do you consider the most promising?

One particularly promising development is the ability to consolidate this complexity into manageable systems, such as the prototype Forecast in a Box. It shows enormous potential for resource-scarce regions, offering accessible, tailored forecasting capabilities that are neither prohibitively expensive nor overly complex. Bridging this gap is one of the most exciting opportunities AI offers.

From your perspective, what are the main limitations?

Data availability and reliability remain the primary challenge. AI is only as good as the data it is trained on, and many vulnerable regions still lack sufficient or reliable observational data. Global data networks are critical, and maintaining these networks is essential for effective AI-enabled early warning systems.

What are the next steps to ensure progress for national services and communities on the ground?

Developing and sharing best-practice models is essential, as is raising awareness of the distinct yet complementary roles played by different institutions. Global alliances clearly demonstrate the value of collaboration, and strengthening these partnerships should be a priority.

Equally important is accelerating the deployment of comprehensive early warning systems, encompassing forecasting, communication, preparedness, early action and risk understanding. With the growing frequency and intensity of extreme weather events, we are losing lives and livelihoods that could have been avoided. There is no time to lose.

AI in action: how the Joint Research Centre supports disaster risk management

Author: André Moreira Gonçalves, Unit E.1, DG JRC

The Joint Research Centre (JRC) is using artificial intelligence (AI) to analyse satellite data, detect early warning signals and provide information for faster, evidence-based disaster risk management decisions.

From data overload to earlier action

AI is no longer just a future promise for disaster risk management. It is already helping authorities anticipate hazards, prioritise actions and respond faster. The JRC has been testing and applying AI where it delivers clear operational value across prevention, preparedness and response, in line with the EU Preparedness Union Strategy.

Earth Observation systems – such as Copernicus – generate far more information than human analysts can process. As a result, analysts can review only a small fraction of available satellite data.

JRC-tested AI models dramatically expand this capacity by enabling analysts to scan hundreds of thousands of square kilometres per day instead of a few hundred. This improvement gives civil protection authorities earlier situational awareness, longer lead times and more time to prioritise mitigation and preparedness actions. The Copernicus Emergency Management Service (CEMS) already integrates AI-powered analysis to strengthen responses to floods, wildfires and other large-scale emergencies across Europe.

The European Crisis Management Laboratory at the Joint Research Centre, in Ispra, Italy © EU 2023

Mapping exposure and understanding vulnerability

Effective preparedness depends on understanding where and how people live. Through the Global Human Settlement Layer (GHSL), the JRC uses transparent, rule-based AI to analyse satellite imagery and map built-up areas, informal settlements, refugee camps or critical infrastructure. These products help assess exposure, estimate potential damage from natural hazards and plan targeted preparedness measures, particularly in rapidly evolving or vulnerable contexts.

Trust and accountability are essential when using AI. For this reason, the JRC develops explainable AI tools for drought and agricultural risk assessment that combine expert knowledge with large datasets. These models clearly show why they flag specific areas as at risk, allowing decision-makers to justify actions and communicate them with confidence.

Faster alerts and clearer situational awareness

Several JRC pilots focus on accelerating early warning and improving situational awareness. For example, AI processes meteorological bulletins to detect early signs of tropical cyclone formation within the Global Disaster Awareness and Coordination System (GDACS), extending the preparedness window before storms fully develop.

During emergencies, JRC-developed open-source tools can analyse social media in real time to identify damage and priority needs, as demonstrated during the Haiti earthquake and the Türkiye–Syria earthquakes.

Through operational tools, applied research and close collaboration with Member States, the JRC is showing how AI can strengthen disaster risk management while keeping people at the centre of every decision. The JRC keeps track of the fast progress in the field of AI for disaster risk reduction through its Disaster Risk Management Knowledge Centre (DRMKC).

A recent policy brief summarises the JRC's innovative approach to AI for disaster risk management, available in the JRC Publications Repository.

Do you know how AI can be used in crisis management?

SAM report on AI in emergency and crisis management

By Auriane Denis Loupot, Unit A2, DG ECHO
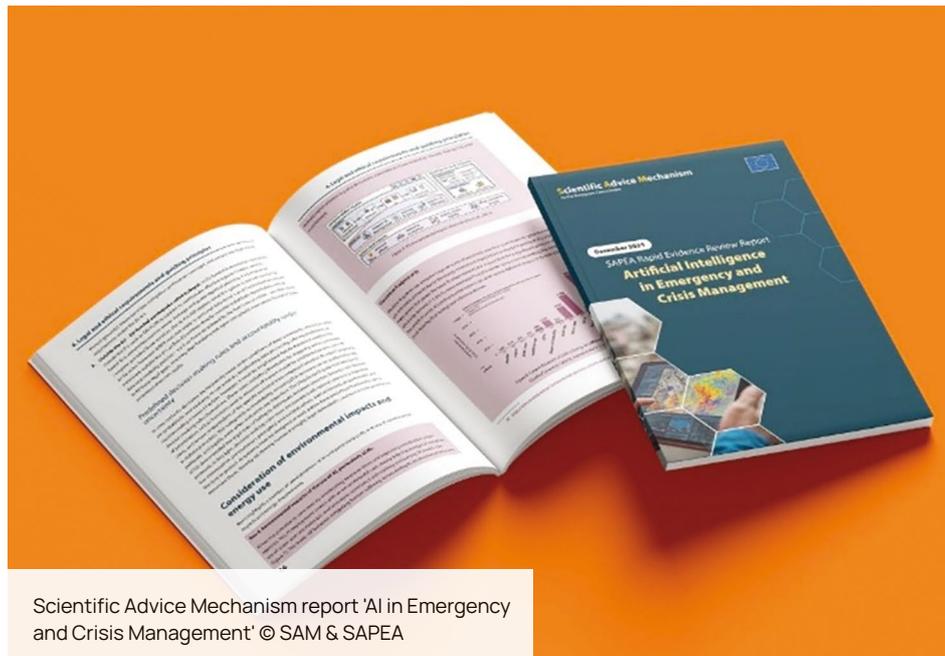
Scientific Advice Mechanism report 'AI in Emergency and Crisis Management' © SAM & SAPEA

That is the question the Directorate-General for European Civil Protection and Humanitarian Aid Operations (DG ECHO) asked the Scientific Advice Mechanism (SAM) – an EU initiative that provides independent scientific evidence and policy recommendations and brings together leading scientists and European academies.

Their answer was published last December in the AI in Emergency and Crisis Management Rapid Evidence Review. Rather than presenting a list of AI tools applicable to disaster and crisis management, the report sets out guiding principles for the selection and use of AI tools. This approach empowers users by providing evaluation criteria to assess whether a particular AI system is fit for purpose. It also highlights case studies on the use of AI for tasks related to disinformation detection, weather forecasting or disaster response. The report concludes with a set of policy options designed to stimulate a discussion on how to strengthen crisis management AI capabilities in Europe.

So, where does AI actually help? The evidence shows that AI performs best in tasks that are well-defined and data-intensive. AI systems can process large volumes of data from many different sources such as satellite imagery, sensor networks and social media, at a pace and scale unseen before. In emergencies, this can help improve early warnings or support rapid damage assessment. For instance, in weather prediction, AI has already outperformed traditional numerical models in some contexts.

However, AI systems still struggle when faced with new and rare situations, particularly where training data is limited. AI's performance also degrades when systems trained in one context – for example, a specific region – are applied elsewhere. This is especially relevant where hazards, such as wildfires, may occur further north than they did previously. Ultimately, AI is only as good as the data it learns from and operates on. The authors argue that better data preparedness and cooperation are essential for AI to deliver real value.

AI also lacks the ability to understand complex contexts in the way humans do. For this reason, the report emphasises that AI cannot replace human decision-making. The report addresses legal and ethical concerns when using AI in emergencies and stresses the importance of complying with the AI Act and the General Data Protection Regulation (GDPR).

Overall, the report provides a clearer understanding of where AI adds value and what to consider when integrating it into civil protection work.
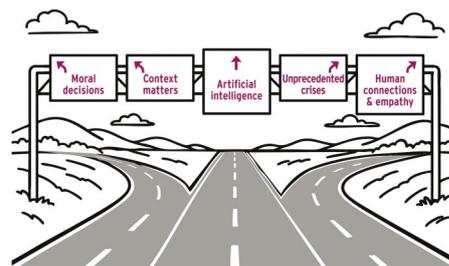
Balancing technology and humanity in crisis management: AI must be guided by ethics, context and human connection © SAM & SAPEA

From Notre Dame to Ukraine: how advanced robotics enhances firefighter safety – an interview with Bruno Cruchant

By Jo-Anna Van Vlaenderen, Unit B3, DG ECHO

Bruno Cruchant presenting the Colossus firefighting robot developed by Shark Robotics © EU 2025

Bruno Cruchant is chief public affairs officer at Shark Robotics, a French tech company specialising in the design and production of robots for firefighting, security, demining, and defence. Combining advanced robotics, software, AI and smart-battery technology, the company's mission is to save lives by providing reliable robots for the world's most critical operations. Shark Robotics recently took part in the Global Initiative on Resilience to Natural Hazards through AI Solutions in December, which was organised by the International Telecommunication Union and hosted by the European Commission's Directorate-General for European Civil Protection and Humanitarian Aid Operations (DG ECHO).

How did the Colossus come into being? What gaps or needs were you aiming to address?

The Colossus originated from founder Cyrille Kabbara's experience with robotic systems used by French special forces, particularly in demining operations. He wanted to adapt this technology to assist firefighters in Paris.

Although firefighting robotics already existed – dating back to the 1980s in Japan, with large, teleoperated vehicles – recent advancements in battery technology made it possible to develop smaller, more agile teleoperated robots.

After several months of collaboration and testing with the Paris Fire Brigade, the Colossus was created. It soon intervened at the Notre Dame fire, proving invaluable in extinguishing flames inside the cathedral, something too dangerous for firefighters due to molten lead and structural instability.

What makes the Colossus unique in terms of design and capabilities?

One of the key features of the Colossus is its modular architecture. Much like a Swiss Army knife, the robot is designed as a true multi-mission platform, with more than 12 interchangeable operational modules covering firefighting, logistics, reconnaissance and support functions.

All modules can be installed or removed on-site, without tools, while wearing operational gloves. This allows firefighters to adapt the robot in a matter of minutes.

A rail kit allows the robot to operate on train tracks within five minutes. This opens up new possibilities for tunnels, metro systems and technical centres.

Where is the Colossus currently operating?

The Colossus operates in nearly 20 countries. Some of our largest customers include Romania, Thailand, Singapore, France, of course, and Ukraine. In Ukraine, 40 robots are on operational duty and, if necessary, are involved in emergency response operations. They provide important protection against repeated attacks targeting firefighters. According to the head of the State Emergency Service of Ukraine, the Colossus has saved numerous lives.

What role does AI play in the Colossus?

While currently teleoperated, the Colossus is moving toward partial autonomy. Firefighters prefer support tools over fully autonomous robots. Upcoming AI modules will automate tasks such as climbing stairs or navigating doors, while C2 integration will provide commanders with structured, real-time information from the field.

How does Shark Robotics navigate the public and private landscape?

We share a culture of operational focus. We monitor funding opportunities, follow tender processes, and remain attentive to government priorities, budget constraints, and civil protection trends, including the growing emphasis on dual-use capabilities. Through our operational expertise and reliable support, we help public authorities achieve their objectives.

What are the next steps?

In mid-2026, we will commercialise the Gen 2.4, which we believe is the most advanced firefighting robot currently available, in terms of size, agility and communication capabilities. It can carry over 800 kilograms, features a suspended track system for enhanced mobility, reaches speeds of up to 12 kilometres per hour, and integrates AI modules to support firefighter decision-making in high-risk environments.

Transforming news into disaster management insights with language learning models

Author: Michele Ronco, Unit E.1, DG JRC

Artificial intelligence (AI) is redefining disaster risk management (DRM) through innovative, data-driven approaches. A collaborative effort by the European Commission's Joint Research Centre (JRC), in partnership with multiple units and a multidisciplinary team, shows the transformative potential of AI in this field. By harnessing large language models (LLMs) and retrieval-augmented generation (RAG), an innovative project automatically extracts and processes news from the European Media Monitor ([1]) into structured insights for DRM.

The first achievement of this initiative is the development of a comprehensive dataset comprising over 3 000 disaster events spanning from 2014 to 2024. This dataset is generated by meticulously extracting information from multilingual news articles and transforming it into structured storylines and knowledge graphs. These knowledge graphs illustrate the intricate relationships and interactions between various hazards and societal responses, offering a holistic understanding of complex disaster dynamics often missed in traditional records.

A prototype dashboard featuring thousands of real historical examples is publicly accessible at Hugging Face. In line with findable, accessible, interoperable, and reusable (FAIR) principles, all workflows are openly accessible via this interactive exploration dashboard, and the data generated are available through the JRC Data Catalogue.

This approach enriches traditional DRM resources by connecting multiple hazards, impacts and drivers. By moving beyond single-hazard perspectives, it supports a more comprehensive understanding of modern multi-risk crises and helps capture impacts and vulnerabilities linked to individual events. Validation of the extracted disaster knowledge graphs was conducted during the workshop AI for Preparedness: Building capacity for AI-powered DRM, organised by the Directorate-General for European Civil Protection and Humanitarian Aid Operations, in Brussels in June 2025. This exercise involved domain experts who confirmed the relevance and accuracy of the generated content, reinforcing the importance of integrating AI-driven data extraction with expert feedback.
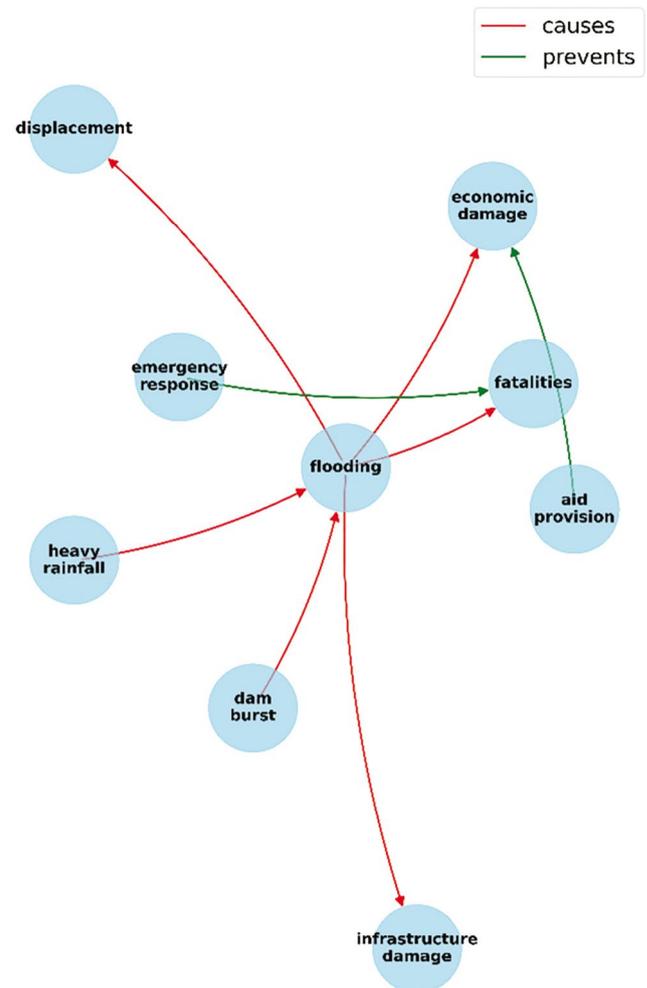
LLM-generated knowledge graph showing causes, impacts and response actions linked to the 27 August flash floods in Milhan District, Yemen © JRC 2026

This collaborative effort underscores the potential of AI in DRM. By converting global news into structured, interpretable formats, the initiative provides a scalable foundation for enhancing multi-hazard awareness and improving DRM strategies. As AI technology continues to evolve, such projects pave the way for more integrated and data-informed approaches to managing the growing risks posed by natural and socio-economic hazards.

([1]) The Europe Media Monitor (EMM) is a Commission media-monitoring service that analyses both traditional and social media. EMM gathers about 300 000 news articles per day in up to 70 languages.

Union **Civil Protection** Knowledge Network

How the digital twin Destination Earth transforms EU crisis response

Author: Damyan Barantiev, Marco Mastronunzio, Unit E.1, DG JRC

In a world facing escalating climate hazards, the line between scientific innovation and operational reality is becoming increasingly blurred, and speed and precision in decision-making are increasingly important in saving lives. In June 2025, the European Commission took a decisive step forward by incorporating data from its flagship Destination Earth (DestinE) initiative directly into the operational products of the Emergency Response Coordination Centre (ERCC) for the first time. This marks a turning point in how the EU anticipates and responds to disasters.
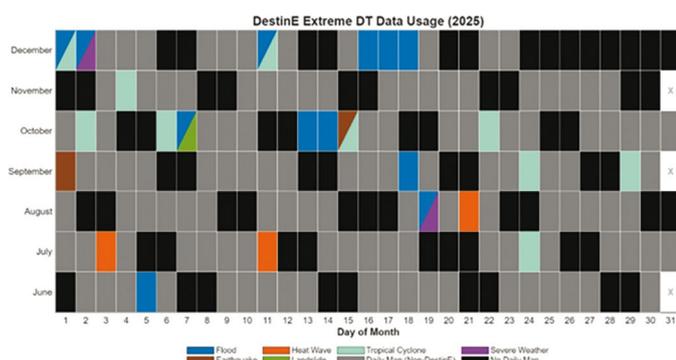
What is Destination Earth?

For those unfamiliar with the concept, DestinE is an ambitious EU initiative to develop highly accurate digital twins of the planet. DestinE is not just a model – it is a high-fidelity digital replica of the Earth, powered by petascale computing and AI-driven Earth system models.

Developed by the European Space Agency (ESA), the European Centre for Medium-Range Weather Forecasts (ECMWF) and the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT), DestinE aims to monitor and predict natural and human-induced phenomena with unprecedented precision. It provides interactive, scenario-based simulations for policymakers and crisis managers to support the Green Deal and the EU Digital Strategy.

First operational test: Nigeria flash floods 2025

The first real-world application of DestinE data for disaster risk management occurred during the flash floods in Nigeria, triggered by heavy rainfall on 29 to 30 May 2025. The floods devastated Mokwa, Niger State, claiming over 150 lives and displacing more than 3 000 people.

Use of Destination Earth Extremes Digital Twin data in ERCC daily maps during 2025 © JRC 2025

In response, the European Crisis Management Laboratory (ECML) of the Joint Research Centre (JRC) achieved a breakthrough by using high-resolution data from the Extremes Digital Twin (DT) for the first time. This pilot map was showcased during a DestinE workshop at the JRC in June 2025, demonstrating how DestinE's advanced capabilities could support the ERCC operations.

What began as an experiment quickly evolved into a sustainable practice. A review of the ECML team's analyses from the second half of 2025 shows that Extremes DT data was used to produce 24 specialised daily maps covering different types of disasters such as floods, tropical cyclones and heatwaves. This growing adoption proves that DestinE is no longer just a visionary project – it is increasingly becoming an operational tool that strengthens the EU's crisis response capacity.

This success is rooted in the close cooperation between the JRC, the Directorate-General for European Civil Protection and Humanitarian Aid Operations, the Directorate-General for Communications Networks, Content and Technology, and the teams of ESA, ECMWF and EUMETSAT, who jointly develop the components of Destination Earth. Their synergy enables analysts to work with interactive analysis combining real-time observations and cutting-edge Earth system modelling.

Looking ahead, discussions in 2025 focused on integrating the Global Disaster Awareness and Coordination System (GDACS) with DestinE data and automating tropical cyclone impact assessments. These advancements will allow the ERCC not only to visualise potential disaster zones at very high resolution during such an event but also to estimate needs in advance.

The floods in Nigeria were a tragic reminder of nature's force, but the EU's response showcased the power of innovation. Today, just six months later, Destination Earth is already shaping the future of civil protection.

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Art{@I×}ECML: using technology to reconcile art and science for crises

Author: Daniele Alberto Galliano, Ana-Maria Duță, Unit E.1, DG JRC

The intersection of art, technology and crisis management can lead to innovative and impactful solutions. A notable example of the innovative application of technology was the Art{@I×}ECML project, an exhibition organised at the Joint Research Centre (JRC) in 2025 using gigapixel imaging technology and AI-generated music to create an immersive experience for visitors.

At the heart of the exhibition was the collaboration with Haltadefinizione, a tech company of the Gruppo Panini Cultura specialised in high-resolution art digitisation. Using their Coosmo Digital Asset Management system, visitors explored world-famous art pieces on the touch-screen video wall of the European Crisis Management Laboratory (ECML). This interactive display allowed visitors to zoom in on fine details that are almost invisible to the naked eye, providing fresh perspectives on the iconic artworks displayed and offering an opportunity for personalised navigation.

'By blending the emotional depth of art with the innovative power of technology, crisis management can be made more human-centred, impactful and adaptable. Each field can enhance the other: art can humanise and deepen technological responses, while technology can amplify and expand the reach and impact of artistic efforts' [2].

'Primavera' by Sandro Botticelli, displayed as part of the Art{@I×}ECML exhibition using high-resolution digital imaging technology © Haltadefinizione Image Bank

By bringing this technology to the ECML, the exhibition bridged cultural storytelling and technological innovation. The experiment aimed to assess the potential application of this technology to the systems and data related to disasters and emergencies.

This pilot could pave the way for enhanced tools for analysing and sharing crisis-related imagery, as well as studying crisis perception through collaborations with behavioural experts, and preserving cultural heritage by documenting the impact of crises on art.

The Art{@I×}ECML exhibition also demonstrated how gigapixel technology can be applied in other domains, such as education, security, research and cultural heritage preservation. The use of AI-generated music, tailored to each artwork, highlighted the potential for AI to create personalised and adaptive experiences.

The Art{@I×}ECML exposition highlighted the benefits of collaborative approaches in tackling complex issues and the potential of technology to support decision-making and enhance situational understanding. Similar methods could be applied in civil protection, where technologies improve navigation, communication and perception of crisis data and scenarios, ultimately leading to more effective emergency management and response.

As a concrete application, this technology is currently being explored in collaboration with the Global Human Settlement Layer (GHSL) to enrich the navigation of a large dataset on human settlements at the global level, with the visualisation of charts and tables describing the data related to the displayed area.

The full report is now available here.

[2] Comments and suggestions received from the visitors to the exhibition. In: Santini, M., Astarita, S., Borelli, G., Bortolamei, F., De-girolamo, L. et al., Art{@œ×}ECML – Using technology to reconcile art and science for crises – *An exhibition at the European Crisis Management Laboratory (ECML)*, Publications Office of the European Union, 2025, https://data.europa.eu/doi/10.2760/3531938.

Turning AI innovation into disaster preparedness

By Stephanie Khalaf, Unit B3, DG ECHO

Participants and panellists gathered for the high-level discussion at the Global Initiative on Resilience to Natural Hazards through AI Solutions © EU 2025

On 11 and 12 December, the Global Initiative on Resilience to Natural Hazards through AI Solutions brought together policymakers, civil protection authorities, researchers and private-sector actors in Brussels to explore how artificial intelligence (AI) can strengthen disaster preparedness. Organised by the International Telecommunication Union (ITU) and hosted by the European Commission's Directorate-General for European Civil Protection and Humanitarian Aid Operations (DG ECHO), the event gathered around 250 participants on site and online.

From opportunity to responsibility (Day 1)

Day 1 focused on how AI can support early warning systems, situational awareness and hazard forecasting, while addressing the conditions needed for its responsible use. Opening the workshop, Hans Das, Deputy Director-General of DG ECHO, highlighted the growing strain on disaster risk management systems caused by climate change, geopolitical uncertainty and limited resources. He noted that emergency managers often make life-saving decisions with incomplete and rapidly changing information, and that AI can help process and prioritise data –if applied responsibly.

'EU civil protection stands at a pivotal moment; we have a real opportunity to take steps to integrate AI into our work.'

Hans Das, Deputy Director-General, DG ECHO

Speakers from ITU and the World Meteorological Organization (WMO) stressed that technology alone is not sufficient. Effective early warning systems rely on strong institutions, trusted communication channels and inclusive approaches that ensure warnings reach everyone, including communities facing data and connectivity gaps. Discussions also highlighted the importance of shared standards, high-quality data and skills development, as well as the risks of bias and inequality when AI systems rely on uneven datasets.

A high-level panel brought together perspectives from EU institutions, operational services, international organisations and the private sector, identifying early warning, real-time situational awareness and forecasting of floods and wildfires as key areas where AI can add value. Speakers agreed that long-term investment and closer collaboration between developers and practitioners are essential to move from innovation to routine operational use.

In the afternoon, hands-on sessions translated these discussions into practice. Participants explored the AI pipeline – from problem definition and data preparation to deployment in real operational contexts – and worked with concrete examples showing how AI tools can support decision-making when aligned with end-user needs.

From strategy to coordination (Day 2)

Day 2, the third meeting of the Global Initiative, focused on governance and next steps. Gaetano Vivo, Deputy Head of Unit at DG ECHO, presented the European Commission's contribution, outlining priorities for integrating AI into disaster management, alongside challenges related to data availability, validation, ethics under the AI Act and AI literacy. Working groups reported progress on data, modelling and educational resources, while concrete use cases illustrated the growing maturity of AI applications.

Across both days, a clear message emerged: AI holds strong potential for disaster preparedness, but impact depends on trust, standards, skills and sustained collaboration to ensure innovation delivers real benefits on the ground.

Grounding AI with a shared understanding of the crisis management domain

Author: Luigi Spagnolo, Unit E.1, DG JRC

Large language models (LLMs) represent a major technological advancement in the ability of machines to **process human language**. As discussed in this video AI in Science in 60' on disaster risk management (DRM), experts are increasingly using this type of artificial intelligence (AI) to speed up the process of selection, categorisation and analysis of trusted sources from international organisations, agencies and the media to monitor and assess the impact of disasters or to detect new signals of emerging issues. Within the framework of the activities of the European Crisis Management Laboratory (ECML), LLMs are used to automatically **extract key indicators** (fatalities, displaced people, etc.) and **facilitate the production of situational awareness reports**.

However, as LLMs may also produce **plausible but unverifiable or hallucinated output**, their application in high-stakes domains such as DRM **remains limited**. To reduce the risk of bias and errors, a **neuro-symbolic approach** is emerging, combining neural AI (the foundation of LLMs) with **symbolic reasoning**. This approach relies on logical rules and clearly defined human concepts – known as symbols – to derive conclusions in a transparent and explainable way. Such concepts, as well as the relationships among them (e.g. a 'hazardous event' as the manifestation of a 'hazard', which, in turn, may be triggered by a 'risk driver' or mitigated by a 'policy measure') are expressed as **formal representations of knowledge** called ontologies (structured conceptual frameworks) and eventually linked into **knowledge graphs**. Neuro-symbolic approaches use this curated information to guide LLMs to better

extract consistent facts and figures from text, as well as to ground their responses in verified, unambiguous and explainable facts.

In collaboration with stakeholders including the Health Emergency Preparedness and Response Authority (HERA) and the Directorate-General for Digital Services (DIGIT) of the European Commission, the Joint Research Centre (JRC) is currently developing **an ontology for cross-sectorial and public health crisis management** with experts from the Italian National Research Council, the University of Bologna and the University of Mannheim.

The benefits go beyond more reliable AI-powered reasoning for decision-making. Shared and interconnected knowledge improves interoperability between the European Crisis Management Platform (ECMP) and other early warning systems – a key objective of the Preparedness Union Strategy – while fostering a common understanding across communities of practice in the DRM domain.

The first output of the project is expected by Q1 2026 and will be further expanded to cover other policy sectors, including civil protection and security. Further research on neuro-symbolic approaches for crisis management is also envisaged through a JRC Collaborative Doctoral Partnership with the National Technical University of Athens.
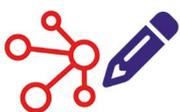
Knowledge representation

Ontology modelling and **mapping**

Knowledge extraction

AI to **extract information from text**
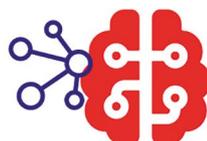
Knowledge reasoning

Leveraging **knowledge graphs** for **decision support**

Knowledge exploration

Innovative / AI-powered search and **business intelligence**

An overall vision for a neuro-symbolic artificial intelligence for crisis management © JRC 2026

FEATURED

A laboratory for resilience: what disasters reveal about vulnerability and risk

By Jo-Anna Van Vlaederen, Unit B3, DG ECHO

Professor Kanako Iuchi speaking during a panel discussion at the TAFF conference © Sophia Sternath

'One of the main challenges is that people most affected by disasters are effectively invisible in policy processes. Their experiences are not captured in data and their voices rarely shape decisions.'

You have been working at the intersection of research and practice for more than 25 years. From your perspective, what are the main challenges in connecting academic research with policymaking?

Academic research tends to focus on ideals, on what should be done. Policymaking, by contrast, must respond to real-world constraints and pressing needs. This can create a gap between research and practice.

One of the main challenges is that people most affected by disasters are effectively invisible in policy processes. Their experiences are not captured in data and their voices rarely shape decisions. For me, bridging the gap means starting in the field: identifying concrete problems and translating lived realities into policy-relevant insights.

My research often begins in the recovery phase, after disaster hits. Yet when you follow recovery processes over 10 years or more, it becomes clear that recovery is inseparable from mitigation. This led me to focus on how vulnerability can be recreated through policy. Even well-intentioned 'build-back-better' approaches can produce new vulnerabilities, especially when they are under intense time pressure and rely on one-size-fits-all solutions.

Professor Kanako Iuchi is an international development scholar and planner. She has worked at the intersection of research and practice for more than 25 years, specialising in disaster management planning, urban and regional planning, and community development. Her recent work focuses on post-disaster rebuilding in urban and coastal areas across Indonesia, Japan, the United States, the Philippines and Fiji. She recently showcased her case study of Kesennuma City at the TAFF conference on 2 October 2025, highlighting lessons on how communities can rebuild stronger and become more resilient.

You described the case of Kesennuma City at the TAFF conference last October as a 'laboratory for resilience' following the 2011 Tohoku earthquake and tsunami – one of the most severe natural disasters in Japan's history – which caused massive loss of life and widespread destruction along the north-east coast. What enabled its transformation?

Kesennuma's recovery was shaped by a very distinctive local context. One key factor was strong leadership. The mayor and local administration maintained close, ongoing communication with residents.

Another important factor was the city's business-oriented culture. Many residents were constantly asking how recovery efforts could be turned into sustainable economic activity. This mindset created openness across all stakeholders to experiment and think creatively about the city's future.

Kesennuma also benefited from substantial external support. What made the difference was how this support was used. Rather than passively accepting external advice, the city actively defined its own needs and asked how outside resources could be leveraged to serve local priorities.

Crucially, recovery in Kesennuma was not treated as a purely technical exercise focused only on physical safety. While risk reduction was important, decision-makers remained attentive to how recovery measures affected everyday life. Experiences elsewhere in Japan showed that an excessive focus on physical resilience, such as the construction of large coastal levees that blocked ocean views, could unintentionally reduce residents' quality of life.

Why are pre-disaster vulnerabilities so often overlooked in policy and how can this be addressed?

In general, we overlook vulnerable communities because we focus on immediate survival, on getting through the next

> 'Mainstreaming disaster risk does not mean focusing narrowly on hazards or infrastructure. It means embedding an awareness of vulnerability into everyday development decisions and ways of living.'

day. We hope disasters will not happen. In Japan, politicians long avoided discussing pre-disaster preparedness because acknowledging risk was seen as electorally dangerous. Yet vulnerable populations are always the most affected when disasters occur. Investing in prevention is far less costly: one dollar spent before a disaster can save thirteen dollars afterwards.

For me, mainstreaming disaster risk does not mean focusing narrowly on hazards or infrastructure. It means embedding an awareness of vulnerability into everyday development decisions and ways of living. Disaster risk should be considered in all aspects of normal life. And while experts play an essential role, they cannot carry the responsibility alone. Governments, planners and residents all need to integrate risk awareness into daily decision-making.

What lessons can European disaster risk managers take from your work?

It is essential to understand vulnerabilities before disasters occur. At the same time, we must be careful not to overburden vulnerable people with participation demands when they are struggling to survive day to day.

Local ownership is important, as residents are the ones who continue to live in affected areas. However, participation must be carefully designed, balanced with expert knowledge and supported by transparency and clear communication. Trust and relationships need to be built before disasters occur. Recovery processes are fast-paced, and without prior relationships, many people hesitate to speak up or engage. Local governments, community groups, schools and non-profits play a crucial role here. That is where real conversations happen and where resilience truly begins.

Port of Kesennuma seen from the observatory © Shutterstock, linegold

From rapid assessment to community care: PHF in Mayotte

By Stephanie Khalaf, Unit B3, DG ECHO

Residents at a PHF-supported medical outreach point in Mayotte, receiving consultations and basic care © PHF

When Cyclone Chido struck Mayotte on 14 December 2024, it triggered one of the most severe disasters the French department has faced in decades. With wind gusts exceeding 200 kilometres per hour, the cyclone severely damaged infrastructure, disrupted essential services and created widespread humanitarian needs. Official figures reported 39 fatalities, more than 4 200 injured and over 19 000 buildings damaged or destroyed.

The scale of destruction required an exceptional mobilisation of French civil protection resources. According to Lieutenant-Colonel Frédéric Harrault, on-site officer in charge of operations, the event led to one of the largest civil protection responses organised by France in modern history. Resources were pre-positioned before the cyclone made landfall, with military civil protection brigades and firefighters from Réunion deployed in advance. In the days that followed, France launched its largest airlift operation to support Mayotte, allowing the rapid arrival of responders, equipment and humanitarian aid. The activation of the EU Civil Protection Mechanism further strengthened the response, with material support from Belgium, Germany, Italy, Luxembourg and Sweden.

Within this large-scale response, firefighter NGOs provided flexible, community-based support alongside institutional emergency services. Pompiers Humanitaires Français (PHF), working with other firefighter NGOs coordinated by the Fédération Nationale des sapeurs-pompiers de France, deployed rapid-response missions to support the population during the local emergency.

PHF's engagement began with an early assessment mission deployed in the days following the cyclone, enabling rapid coordination with the Centre Opérationnel Départemental, the Mayotte Departmental Fire and Rescue Service and local authorities.

Medical care quickly became a central pillar of PHF's action. Teams deployed fixed and mobile dispensaries to reach communities cut off from healthcare. Patients presented with untreated wounds, infected injuries, dehydration – particularly among infants – and interruptions in chronic disease management. Outreach patrols (maraudes) in isolated Bangas ensured that people unable to reach formal health services were not excluded from the response.

Alongside healthcare delivery, volunteers carried out reconnaissance, route clearance and safety operations, restoring access to isolated areas and securing damaged buildings. Full logistical autonomy allowed teams to operate independently for up to 15 days despite degraded conditions.

'Our work is not only about technical care – it is also about presence, listening and human support.'

Houyame Nassih, volunteer firefighter nurse with PHF

As needs evolved, the response shifted from life-saving interventions towards preventive care and follow-up. Across successive missions, PHF and partner NGOs activated 12 dispensaries, delivered more than 600 medical consultations and supported thousands of people with food, water and essential care – demonstrating the value of coordinated, community-based response in complex emergencies.

Wildfire preparedness: practical takeaways from Limassol

By Joy Kacenelenbogen, Unit B1, DG ECHO

The recent Union Civil Protection Mechanism (UCPM) workshop 'Wildfire Preparedness – Empowering the Population, Improving Resilience and Funding Opportunities', held in Limassol under the Cyprus EU Presidency, confirmed a clear evolution in wildfire preparedness thinking. Today, effectiveness depends less on adding new tools and more on connecting people, systems and investments in a coherent and risk-informed way.

Limassol offered a compelling operational backdrop for these discussions. Palm-lined coastal areas, dense urban development and rapidly expanding settlements meet forested and rural landscapes inland, creating a complex wildland–urban interface. This setting reinforced the need for preparedness approaches that are grounded in real landscapes, exposure patterns and population dynamics.

As one workshop moderator aptly recalled: 'Disasters are foremost social events, with technical aspects.'

Empowering the population: simple, targeted and tangible

Discussions highlighted that population preparedness is most effective when it is simple, targeted and actionable. This includes identifying vulnerable groups and their specific needs, delivering harmonised preparedness and warning messages across communication channels, and making 72-hour emergency kits generic, rather than hazard specific.

Participants also stressed the importance of complementing digital tools with physical information points and investing in education and awareness through schools and voluntary initiatives. Clear and consistent messaging is particularly critical in densely populated and touristic areas, where seasonal populations may be unfamiliar with local risks and procedures. Preparedness discussions also underlined that resilience can be enhanced by design, for example by clearing vegetation around homes, using fire-resistant materials and integrating wildfire risk into planning.

Preparedness and response: systems, coordination and intelligence

The European Commission underlined the need for integrated systems and stronger coordination mechanisms,

Participants of the UCPM workshop on Wildfire Preparedness: Empowering the Population, Improving Resilience and Funding Opportunities gather in Limassol, Cyprus © EU 2026

both horizontally across services and vertically between local, regional and national levels. Local contingency plans remain the backbone of early decision-making, while early detection increasingly combines technologies such as drones and satellite imagery with traditional observation. Liaison officers continue to provide strong added value, and improved fire behaviour knowledge and fire intelligence are essential for both preparedness and response. Recurring bottlenecks were discussed openly, including interoperability challenges, legal constraints, uneven political commitment, capacity-building gaps and difficulties in the operational uptake of innovation.

Funding and innovation: aligning investment with risk

A strong takeaway concerned funding strategy. Participants noted that spending on wildfire management is often misaligned with actual risk and capability needs. Priorities include shifting towards capability-based planning, improving coordination of EU funding across the wildfire management cycle, aligning investments with risk assessments and accelerating innovation uptake by better connecting science, policy and operations.

Preparedness starts long before ignition

The workshop confirmed that wildfire preparedness is built long before ignition, through governance, training, coordination and informed communities. In environments like Limassol, where urban areas, infrastructure, tourism and vegetation closely coexist, preparedness is not an abstract policy concept but an everyday operational requirement.

Activation of UCPM enables rapid deployment of EU resources

By the editorial team, Unit B3, DG ECHO

In the early hours of 1 January 2026, new year celebrations in the Swiss ski resort of Crans-Montana turned into tragedy. An explosion in a bar rapidly escalated into a large-scale fire, claiming 41 lives and leaving 116 people seriously injured, most with severe burns. Swiss authorities launched a major rescue operation but the scale of the disaster placed exceptional pressure on specialised burn treatment capacity. Switzerland rapidly activated the Union Civil Protection Mechanism (UCPM).

The Emergency Response Coordination Centre (ERCC) rapidly matched Swiss needs with offers from Member States. A coordination framework was established between the Swiss National Emergency Operations Centre, hospitals and the ERCC, with twice-daily calls to align Medevac needs with available European transport and treatment capacity. The platform also enabled hospitals to request Burn Assessment Teams (BATs) and specialised medical devices.

Patients were transferred to burn centres in Belgium, Germany, France and Italy. Patient transport was carried out with support from Switzerland, France, Italy, Luxembourg and Romania. In addition, Austria and Germany provided in-kind medical assistance, while French and Italian (BATs) were deployed on the ground to support triage and clinical decision-making.

'The collaboration with the Swiss authorities was excellent from the very start', says ERCC liaison officer Isotta Benedetti, deployed on site. 'Thanks to this smooth cooperation, Switzerland activated the UCPM in a timely manner, which allowed the rapid deployment of resources.'

Built on hard lessons from Bucharest

The response builds on lessons from the Colectiv nightclub fire in Bucharest in 2015, which exposed critical gaps in Europe's capacity to manage mass burn casualties. 'At that time there was no European plan for mass burn casualties', explains Cristina Brailescu from the Directorate-General for European Civil Protection and Humanitarian Aid who was closely involved in the follow-up of the lessons learnt.

EU civil protection and national medical and civil protection teams getting organised next to an emergency medical helicopter during the Crans-Montana response © EU 2026

'The lack of standards and coordination made international transfers extremely difficult.'

A 2016 UCPM lessons-learnt workshop led to the European response plan for burn mass casualty incidents. 'In 2015 every country sent its own medical teams to assess patients, which was a waste of resources', Brailescu recalls. 'The creation of BATs changed that: one or two joint European teams now assess patients on behalf of all countries, greatly improving efficiency and coordination.'

For ERCC policy officer Eric Adrien, Crans-Montana marked the first full-scale application of the plan. 'Procedures refined after 2015, like early clinical assessment, centralised ERCC coordination, rapid mobilisation of expertise and international patient redistribution, were now applied coherently', he explains.

By 3 January, Switzerland indicated that no further assistance was required, after 39 patients had been evacuated to specialised centres across Europe.

Commissioner for Crisis Management Hadja Lahbib took part in the official national commemoration honouring the victims of the fire and expressed solidarity with the injured, their families and the communities affected.

Germany: the economic case for investing in disaster preparedness and resilience

By Laila Kühle, German Federal Office of Civil Protection and Disaster Assistance (BBK)

Germany's risk landscape is evolving rapidly as natural hazards intersect with technological, public health, economic and geopolitical risks – creating complex, compound and cascading crises. Wildfire risk is escalating, with safety implications for people, critical infrastructure and hazardous industrial facilities. Heat is becoming a growing threat to public health and productivity, while floods remain the country's costliest extreme weather

'Through this project we are able to articulate a stronger economic case for disaster preparedness measures and raise awareness of the critical role of civil protection capabilities in a context of intensifying and interdependent risks.'

Dr René Funk, Vice President,

Federal Office of Civil Protection and Disaster Assistance (BBK), Germany

event, requiring stronger risk management and civil protection capabilities. Overall, extreme climate events have already caused more than EUR 80 billion in damages from 2018 to 2022, and cumulative climate-related costs could reach EUR 280-900 billion by 2050.

Between 2024 and 2025, a Union Civil Protection Mechanism (UCPM) grant from the Technical Assistance Financing Facility for Disaster Prevention and Preparedness (TAFF) enabled a World Bank team to support the German Federal Office of Civil Protection and Disaster Assistance (BBK) in assessing the economic case for investing in disaster preparedness and resilience. The findings, summarised in a new World Bank and Global Facility for Disaster Reduction and Recovery report, underscore the urgency of strengthening civil protection and emergency preparedness through a multi-hazard approach. The report identifies high-return investments that could bolster readiness not only for floods, heatwaves, wildfires and other climate extremes, but also for broader systemic shocks –including cyber disruptions, supply chain interruptions and public health emergencies – by enhancing Germany's capacity to manage complex crises. The report shows that in Germany, each euro invested in preparedness and prevention yields a median return of EUR 2-6, with some measures delivering returns as high as EUR 500.

TAFF is a 100 % EU-financed initiative, implemented as a partnership between the European Commission through its Directorate-General for European Civil Protection and Humanitarian Aid Operations (DG ECHO), the World Bank and the GFDRR.

Contact: Laila Kühle, German Federal Office of Civil Protection and Disaster Assistance (BBK)

Flooded residential area illustrating large-scale flood impact on communities © Adobe stock

LEARNING

France prepares for DEMONAX earthquake exercise

By Lcl Frédéric Harrault, foreign policy officer

From 26 to 30 April this year, France will participate in the DEMONAX full-scale exercise, organised by the Cypriot Civil Protection Agency with co-funding from the European Commission. The DEMONAX project was selected for EU funding in 2024. The exercise scenario is based on an

Civil protection personnel preparing operational planning and coordination procedures © DGSCGC

earthquake with cascading effects including a tsunami. This full-scale exercise will enable a French Medium Urban Search and Rescue team to work alongside its European partners while testing interoperability in a realistic operational setting.

The benefits of this exercise do not stop there. DEMONAX is organised to generate a structured feedback and lessons-learnt process that benefits all exercise participants, as well as observers from several countries in Europe and the neighbourhood. This process is essential for France, which has been working for decades to improve its own response deployment capacity and, more recently, to strengthen its ability to host international assistance through Host Nation Support.

Since 2022, France has called on the Union Civil Protection Mechanism (UCPM) ground reinforcements at least once a year, requiring integration of the EU Guidelines on Host Nation Support (HNS) (revised in late 2024) into its national structure. Implementation of these guidelines is already underway, alongside the introduction of dedicated training for HNS officers, including coordinators, liaison officers and staff at the Reception and Departure Centre. Around 50 officers have been trained and are deployed across the country each summer to practise their skills as they are pre-positioned in key locations across France.

To complete their training, participants are required to take additional courses under the UCPM training programme such as the National Contact Point Course and the Operational Integration Course. In parallel, other personnel, with key roles in deploying or receiving capacities, without being directly in contact with them, have been following the new online module: Mechanism Introduction Course for National Civil Protection Authorities and Disaster Management Staff (NAT), which has been available in French for several weeks.

To develop, and continuously improve, field-based experience is essential and can only be gained through exercises of this scale in addition to real disasters. This is why France is involved in the DEMONAX exercise, not only during implementation but also throughout the planning phase, ensuring that the exercise is as comprehensive as possible and reflects the full spectrum of operational needs. Every stage is examined, from departure from France to return, including transit and operational deployment.

This partnership is a source of mutual enrichment for European civil protection organisations and provides France with a valuable input for preparing EU-ALPEX-27, planned to take place in the French Alps in spring 2027. EU ALPEX is also co-funded by the European Commission and was selected for funding in 2025.

For further information visit the DEMONAX exercise page and the NAT training module.

Gaining confidence under pressure: lessons from the UCPM Team Leadership Course

By Stefan Richter, Communications, UCPM Deployable Training Programme Consortium – TVC

Antonio Colombi is an expert with the Volcanic Risk Service of the Italian Civil Protection Department (ICPD) in Rome. Shortly after completing the Union Civil Protection Mechanism (UCPM) Team Leadership Course (TLC) in October 2023 in Ahrweiler, Germany, he led an advisory mission to Iceland under the UCPM. We asked him to explain the link between receiving UCPM training and going on a mission.

EU Civil Protection Team members during field activities in Iceland © EU 2025

Antonio, how did the TLC prepare you for your role during the Iceland advisory mission in late November 2023?

I believe my role as team leader in Iceland came about because the mission focused on a potential volcanic emergency there, where my field experience could have been vital. Attending the TLC a few weeks earlier was invaluable for both the team and me, mainly because of the new concepts I learnt. Completing not only the TLC but also other UCPM courses increased my confidence in team management, soft skills and negotiation, and in handling the media, which proved very helpful during the Icelandic mission.

In your deployment as a team leader, how did the course's exercises and scenario-based training influence your day-to-day decisions and the team dynamics?

During the mission, we met with the EU Delegation and the Prime Minister of Iceland, Katrín Jakobsdóttir. The approach of the officials, their questions, the time constraints and the formalities brought me back to those parts of the TLC, as well as other UCPM courses I have attended. This helped me to present our task, my team and myself appropriately and with confidence, which in turn contributed to a very positive spirit in our team.

What elements of the TLC did you find most applicable to field operations and why?

The media sessions simulated high-level meetings, and even the simple team-building games had a very positive impact. Fundamentally, team building, media relations, and meetings with stakeholders and political decision-makers are at the heart of a mission. A positive attitude and an understanding of one's own skills and limitations are key to a mission's success. I believe the TLC could place slightly more emphasis on the Host Nation Support aspect of missions, as it is so crucial for successful mission practices.

> 'The TLC gave me the confidence that, while I may never be a native English speaker, I can communicate well under stress, express my decisions and listen to others.'

Reflecting on leadership challenges such as intercultural coordination, rapid risk assessment and stakeholder communication, how has the TLC shaped your approach to crisis management and future deployments?

I am not a native English speaker, and I sometimes felt a bit self-conscious about this during the courses. The TLC gave me the confidence that, while I may never be a native English speaker, I can communicate well under stress, express my decisions and listen to others. The training introduced me to new people, their challenges and their experiences, which broadened my perspective and further strengthened my confidence. The rest came from applying this learning in practice, drawing on the knowledge acquired during the training sessions when needed.

FROM THE COMMUNITY

New master's programme: International Disaster Management and Civil Protection

By the University of Vienna (UNIVIE) team

'Collaboration is key – and the academic community has a crucial role to play. By educating students and practitioners in disaster risk management, universities help us raise awareness, build a shared understanding of the risks we face, and inspire the innovation and mindset needed to turn preparedness into a way of life.' Hadja Lahbib, European Commissioner for Equality; Preparedness and Crisis Management in the Foreword to the EUMA book series volumes.

Risks and disasters, and their resulting impacts, are becoming increasingly frequent and complex due to a range of developments such as climate change, geopolitical instability and ongoing urbanisation. As a result, there is a growing demand for well-trained professionals in disaster management and civil protection. This need is also reflected at policy level, for example, in the Preparedness Union Strategy, where Key Action 15 highlights the importance of integrating preparedness into education and training systems.

In response to this, the two-year (2024-2025) EUMA project (Creating a European Higher Education Network for Master's Programmes in Disaster Risk Management) – funded by the Union Civil Protection Mechanism (UCPM) under Knowledge for Action in Prevention & Preparedness

(KAPP) – has established a new postgraduate master's programme entitled International Disaster Management and Civil Protection. The programme is hosted by the Postgraduate Center of the University of Vienna, Austria, and is delivered in cooperation with several partner universities across Europe, such as the University of Bonn, the University of Twente, Dublin City University, the Scuola Superiore Sant'Anna in Pisa and the Estonian Academy for Security Sciences.

The programme provides a mix of blended learning, excursions, exercises and simulations, and peer learning to effectively bridge theory and practice. A strong emphasis is placed on the bilateral exchange of knowledge and experiences between participants and lecturers. While most teaching units take place online on extended weekends, the curriculum also includes four 1-week in-person modules held in Dublin, Pisa, Enschede and Vienna. These on-site blocks are designed to foster personal interaction and networking among participants. This structure allows the postgraduate master's programme to be completed alongside professional commitments.

In addition to the full master's degree, participants may also enrol in individual modules. This offers a flexible way to explore the programme through micro-credentials. These micro-credentials can later be credited towards the full degree. Furthermore, an academic expert is available, omitting the scientific thesis component.

Graduates of the postgraduate master's programme have a comprehensive and holistic understanding of the disaster management cycle and are capable of applying theory in real-world situations. They are well equipped to anticipate emerging crises and to respond effectively to disasters across borders and sectors.

Participants during group work at the Specialised Workshop held within the EUMA project in Dublin on 10-11 April 2025 © Sophia Sternath

Find more information about the master's programme on the web page of the Postgraduate Center.

Contact details: msc.euma@univie.ac.at

Clearer, faster emergency warnings: lessons from Estonia's PwinPLan project

By Jo-Anna Van Vlaenderen, Unit B3, DG ECHO

EE-ALARM emergency warning messages delivered in different languages © PwinPLan project

'During system testing, nearly 5 million messages were sent to around 1.5 million users, and 98 % of recipients received the alert in their preferred language. Without this solution, the same test would have required almost 25 million messages.'

Effective preparedness requires that authorities communicate emergency warnings clearly and in a language citizens understand.

In multilingual societies like Estonia, this posed a real challenge. The PwinPLan project enables EE-ALARM alerts to be delivered in each recipient's preferred language, using language data held by mobile operators.

We spoke with Hedi Arukase, head of the Civil Protection Department at Estonia's Ministry of the Interior, who shared her insights on the project's development and implementation.

What need did you identify among citizens and authorities that led to the PwinPLan project?

The project was driven by the need to ensure that emergency warnings are delivered quickly and clearly. Previously, area-based SMS alerts were often sent simultaneously in multiple languages, resulting in longer messages and slower delivery.

From the authorities' perspective, multilingual messages also created operational challenges: messages received in unfamiliar languages led to increased calls to national emergency numbers, placing additional strain on services during crises. The language-preference solution was developed to overcome these bottlenecks and to improve both public understanding and institutional efficiency.

Were there any particular challenges in developing and implementing the multilingual system?

Yes, technical complexity was a major challenge. Non-Latin characters significantly increase the size of SMS messages, slowing delivery and multiplying costs. Sending alerts in three languages at once could increase message volume up to eightfold.
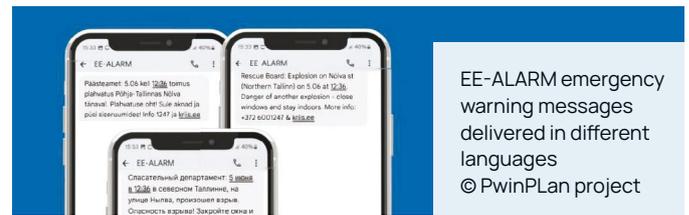
Another challenge was integrating language-preference data from mobile operators into the national alerting system while respecting data protection requirements. This involved close cooperation between the Ministry of the Interior, the State Infocommunication Foundation and mobile operators.

What do you consider the greatest success of the project?

Since 15 April 2025, people have been receiving critical emergency information faster and in a language they understand. This improves people's ability to react appropriately and enhances their safety.

Experience has shown that sending early warning messages in an unfamiliar language significantly increases the workload of the national emergency hotlines as people need additional explanations or translations. This can affect the work of emergency services and delay assistance. By delivering messages in the user's chosen language, these risks are substantially reduced.

What lessons could be useful for other Member States seeking to develop accessible and multilingual early warning systems for all citizens?

The most important lesson is to adopt a people-centred approach. Early warning systems must be designed around how people actually receive, understand and act on information under stress. Language choice is not a convenience – it directly affects comprehension, reaction speed, trust and safety.

Second, multilingual accessibility should be treated as a core performance factor from the outset. Technical limitations of SMS messages must be considered early in system design. Delivering alerts based on users' language preferences can dramatically improve speed, clarity and system efficiency. Strong partnerships with mobile network operators are essential.

Finally, large-scale testing and transparency with citizens builds confidence and trust and strengthens resilience before real emergencies occur.

Harnessing the silver shield: how Europe's 50+ generation can strengthen civil protection

By Ricardo Oliveira Neves, 70, consultant on longevity economy, and co-author of the book Unterwegs: living longer, thinking differently

Europe stands at a crossroads. As security threats evolve and social systems face unprecedented strain, a powerful yet underutilised resource is hiding in plain sight: the 50+ demographic – a cohort representing nearly one third of the EU's total population. This could be particularly relevant to the Preparedness Union Strategy, which includes the action point 'Attract talent to reinforce the EU's preparedness', and which many of us read with interest.

A wealth of wisdom, ready to deploy

The 50+ generation is not just a source of extra hands; it is a reservoir of specialised knowledge and resilience. Retirees and older professionals bring decades of technical skills – from logistics to crisis management – that are directly applicable to disaster response. Whether coordinating evacuations, managing supply chains or mentoring younger responders, their contributions can transform civil protection from the ground up.

Take Alan Braithwaite, now in his eighties, based in the UK but active internationally. After selling his business at 71 and recovering from major heart surgery, Alan refused to step back. Instead, he assembled a 'portfolio career' that leverages his management expertise to address pressing social and humanitarian challenges. His work spans from chairing local citizens advice organisations – providing critical support on debt relief, housing and legal issues – to serving on the board of a food bank and publishing the Social Impact Files, a platform highlighting innovation in the humanitarian sector. Last year, his academic paper on management practices in humanitarian aid was even submitted to the UK Parliamentary Select Committee on Aid and Development. As Alan puts it: 'There is so much that needs to be done and so little time.'

Alan's story reflects a broader reality across Europe: experience and energy are not bound by age. The key is matching their unique abilities with meaningful roles to maximise impact.

Rebuilding the intergenerational contract

This is not just about filling gaps – it is about fairness and shared responsibility. The post-war 'boomer' generation thrived during eras of peace and prosperity. Now, as Europe faces new challenges, their participation in civil protection

Ricardo Oliveira Neves speaking on the role of the 50+ generation in strengthening resilience and civil protection

can help restore balance. By sharing the burden of resilience, older adults reinforce the social compact, proving that solidarity is not bound by age.

Voluntary engagement: the win-win pathway

While compulsion raises concerns, voluntary engagement is a game changer. Many seniors crave opportunities to stay active and contribute. The EU Civil Protection Knowledge Network can support this by creating flexible pathways – from mentorship programmes to rapid-response teams – that align with their skills and passions. The result? A stronger, more intergenerational civil protection framework grounded in experience.

A call to action

As I often emphasise in my work with business leaders and policymakers, the healthy centenarian life will soon become the new normal. Society must prepare for this shift. Retirement should not mean retreat. By empowering the 50+ demographic, Europe can turn experience into action, forging a resilient future.

We must move beyond seeing seniors only as those to be protected and recognise them as a protective force. Alan Braithwaite's journey is a testament to the transformative power of experience, passion, and purpose. Europe's challenge – and opportunity – is to harness this potential at scale.

KNOWLEDGE LIBRARY PUBLICATION REVIEW

Embedding diversity and inclusion in UCPM deployable training

By Grazia Curalli, Deployment Training Course, project coordinator

In each edition of the newsletter, one of our stakeholders reviews a new publication from the Knowledge Library. In this edition, we hear from Grazia Curalli, project coordinator of the Union Civil Protection Mechanism (UCPM) Deployable Training Consortium – TVC, on the launch of the new *Diversity and Inclusion Handbook*.

The *Diversity and Inclusion Handbook* is the result of a collaborative effort to formally embed diversity and inclusion (D&I) within the UCPM Deployable Training. It provides both theoretical and practical guidance on training staff to ensure the consistent integration of D&I across all deployable courses.

The handbook establishes a conceptual and structural basis that connects policy commitments with training learning objectives, learning outcomes and participant assessment through the knowledge, skills, attitudes and behaviours (KSAB) model. This approach ensures that D&I is not treated as an isolated topic, but as a core component of professional competence.

The handbook presents D&I as an essential cross-cutting competence for creating effective and adaptive working environments within the UCPM. Diversity is understood as the range of backgrounds, experiences and characteristics individuals bring, enriching perspectives and problem-solving. Inclusion ensures that these differences are valued by fostering respectful, safe environments where all voices can contribute meaningfully. Importantly, the handbook adopts a holistic understanding of D&I that extends beyond culture or gender to encompass the full range of human experiences shaping participation and performance.

One of the handbook's greatest strengths lies in its clear positioning of D&I as an operational necessity rather than a theoretical ideal. By framing D&I as a lived experience that evolves through interaction, reflection and feedback, the handbook invites UCPM deployable training staff and participants to examine how their own assumptions, biases, behaviours and leadership styles influence team dynamics. This reflective approach is particularly relevant during deployments, where stress can amplify unconscious biases and communication barriers.

The integration of D&I within the knowledge, skills, attitudes and behaviours (KSAB) model reinforces the idea that effective performance goes beyond technical expertise. By giving equal weight to attitudes and behaviours, the handbook highlights the importance of how decisions are made, not only which decisions are taken. This perspective supports psychological safety, trust, and mutual respect – conditions that are critical for teams operating under pressure.

Another strong point of the handbook lies in its emphasis on consistency across the training programme. By embedding D&I from introductory through to specialised courses, it avoids the risk of treating inclusion as an isolated topic. Instead, it becomes a continuous thread that shapes learning environments and reflects the realities of deployment. The idea of developing inclusive 'muscle memory' is especially compelling, as it highlights how repeated practice during training can translate into instinctive, inclusive behaviour in the field.

At the same time, the handbook implicitly challenges institutions and individuals to accept responsibility for cultural change. Inclusion is not presented as a fixed achievement, but as an ongoing process requiring humility, openness and continuous learning. This makes the handbook not only a technical reference, but also an ethical guide aligned with the EU's core values of dignity, equality and human rights.

Participants exchanging perspectives during a collaborative learning session © EU 2025

'In moments of pressure, diversity and inclusion cease to be values and reveal themselves as a strategy – driving clarity, resilience and operational advantage. That is why guidance and toolboxes within the UCPM, such as this handbook, are essential to embrace and train D&I to those who will operate in such high-stakes environments.'

Hana Kolić, UCPM training coordinator, Directorate-General for European Civil Protection and Humanitarian Aid Operations

COMING SOON

Save the date – European Civil Protection Forum 2026

Preparations are already under way for the 9th edition of the Civil Protection Forum, which will take place from 09:00 on 3 November to 16:30 on 4 November, in Tour & Taxis, Brussels.

To find out more and be notified when registration opens, visit the Knowledge Network Platform.

See you there!

Online debate on preparedness now open

EU citizens are invited to take part in a new online debate on population preparedness aimed at making EU policies more inclusive, practical and aligned with people's needs.

A new **Citizens' Engagement Platform** has opened, allowing citizens across the EU to share their views on how Europe should prepare for future crises. Contributions will feed into the **European Citizens' Panel on Preparedness**, which will take place between March and May and bring together **150 randomly selected citizens from across Europe**.

The panel will examine how EU policies and actions on population preparedness can ensure that no one is left behind. Following the discussions, citizens will present recommendations to the European Commission. These will be followed up between May and December with feedback on outcomes and related policy actions expected in early 2027.

The debate responds to clear gaps in preparedness. According to a recent **Eurobarometer survey**, 49 % of EU citizens do not feel well informed about disaster risks, while 68 % say they do not feel prepared to face emergencies, with vulnerable groups disproportionately affected.

Population preparedness is a shared responsibility involving public authorities, civil society, education, businesses and citizens themselves. Any EU citizen can submit a contribution on the platform, in any EU language, until the **end of May**. Organisations working on preparedness are encouraged to share the platform widely within their networks.

EU Preparedness Conference – One year of the Preparedness Union Strategy

Egmont Palace, Brussels – 23-24 March 2026

On 23–24 March 2026, the EU Preparedness Conference will mark one year of the Preparedness Union Strategy, bringing together policymakers, practitioners, researchers and civil society. Discussions will focus on Europe's evolving risk landscape and on translating preparedness into action through civil–military cooperation, public–private partnerships, population preparedness and preparedness by design. The event will support the next steps of European preparedness policy.

To find out more , visit the Knowledge Network Platform.

IN CASE YOU MISSED IT

The fourth phase of the flagship regional civil protection programme in Eastern Partnership countries kicks off

By Paule Galiunaite, Unit B1, DG ECHO

Participants at the launch of the PPRD East 4 programme, Rome, 22 January 2026 © EU 2026

On 22 January 2026, the Commission-funded programme for Prevention, Preparedness and Response to Disasters in the Eastern Partnership countries (PPRD East 4) was officially launched in Rome, Italy. The meeting brought together representatives from the civil protection authorities of Armenia, Azerbaijan, Moldova and Ukraine, as well as the Directorate-General for European Civil Protection and Humanitarian Aid Operations, the Directorate-General for Enlargement and the Eastern Neighbourhood, the Italian Civil Protection Department, the Italian Agency for Development Cooperation and programme partners.

The PPRD East programme, initiated in 2010, aims to strengthen disaster resilience and foster regional cooperation among partner countries, while bringing them closer to the EU Civil Protection Mechanism. Building on the achievements of previous phases, PPRD East 4 shifts its focus from capacity building to institutionalisation. This will ensure that methodologies and capacities are transferred directly to national authorities, thus securing sustainability and national ownership.

With a substantial EU contribution of EUR 5 million, the programme will run for four years until 2029. PPRD East 4 is led by the CIMA Research Foundation of Italy, together with the Fire and Rescue Corps of the Ministry of the Interior of the Slovak Republic and the Italian Relief Corps of the Order of Malta.

First rescEU helicopter delivered

The permanent rescEU aerial-firefighting fleet is taking shape. The first rescEU helicopter was delivered to Romania in December. The aircraft is not yet operational, but it is expected to enter service next summer, strengthening European support during the wildfire season and other emergencies. A full update will follow in the next newsletter.

The first rescEU helicopter, delivered to Romania in December © EU 2026

New calls launched in the field of disaster risk management

Four new calls were recently published under the Union Civil Protection Mechanism (UCPM) financing instruments. The objective of the calls is to enhance civil protection preparedness and disaster risk management.

A new call for proposals under **Technical Assistance for Disaster Risk Management** 'Track 1' has been published on the EU Funding & Tenders Portal, with a deadline of 21 April 2026. The 'Track 1' call provides national disaster risk management authorities in eligible countries with financial support for the development of strategic disaster risk management actions.

In addition, the **Technical Assistance Financing Facility** is calling for expressions of interest. The call will remain open until 27 March 2026. Information about this call is available on the UCP Knowledge Network website.

The **Knowledge for Action in Prevention & Preparedness** (KAPP) calls for proposals are published on the EU Funding & Tenders Portal with a deadline of 19 May 2026 for the submission of applications.

The **KAPP Prevention and Preparedness** call for proposals aims to support projects that strengthen efforts to prevent natural and human-induced disasters while improving the overall preparedness of the UCPM, its stakeholders and the wider population.

The **KAPP** call for proposals: **UCPM full-scale exercises** aims to improve civil protection preparedness and response to all kinds of disasters inside the EU Member States and UCPM participating states by providing a testing environment and a learning opportunity for all actors involved in civil protection interventions.

Given the strong competition, applicants need to be critical in the design and drafting of their proposals, making sure the proposals meet very high standards of relevance, quality and impact. Interest and competition for these calls have significantly increased over the past three years. While proposals and requested budgets have risen sharply, the available budget has not increased proportionally, making selection tougher. Applicants should prioritise proposals based on their needs.

EU Science for Preparedness Conference

The EU Science for Preparedness Conference in Turin brought together researchers, policymakers and civil protection professionals to share and learn how science can better support preparedness in an increasingly complex world that is impacted by multi-hazard risks. Organised by the Joint Research Centre's Copernicus Emergency Management Service (CEMS) and the Disaster Risk Management Knowledge Centre (DRMKC), this conference provided opportunities for exchanging knowledge, testing new tools, and connecting with others committed to advancing science-based crisis preparedness and response.

The sessions explored available tools for early warning and disaster risk management – such as Copernicus and the Global Disaster Alert and Coordination System (GDACS) – ways to strengthen cooperation between science and operations, explainable AI and pathways for turning innovations into operational systems.

Learn more about the results of the conference, the debate on what science can do and scientific inputs for future developments in support of the Preparedness Union Strategy.

Participants during the closing session of the EU Science for Preparedness Conference © EU 2025

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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

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