



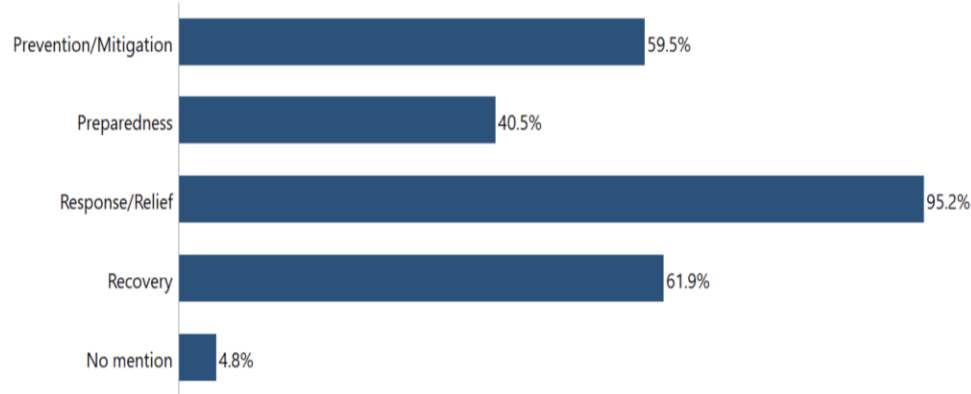
AI for Disaster Management

Building a Resilient Future through AI and Standards

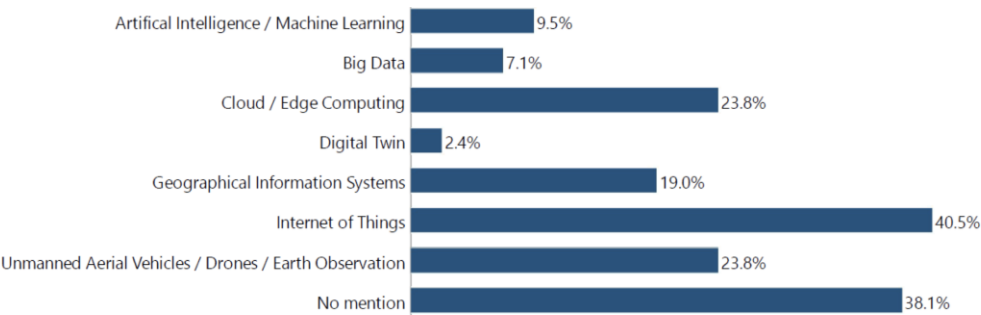
Focus Group on AI for Natural Disaster Management

Gaps in Standards on Disaster Management

Management
phase



Technologies



- 1 Collaboration between ITU, WMO, UNEP, to accelerate AI development for enhancing resilience to natural hazards
- 2 Developed guidelines and best practices for AI for disaster prediction and monitoring
- 3 Between December 2020-March 2024, brought together over **500 experts** from across the globe, active various fields for a comprehensive approach to disaster management challenges



Mitigation

Risk assessment and infrastructure planning



Preparedness

Forecasting and monitoring systems and resource allocation



Response

Situational awareness and emergency coordination

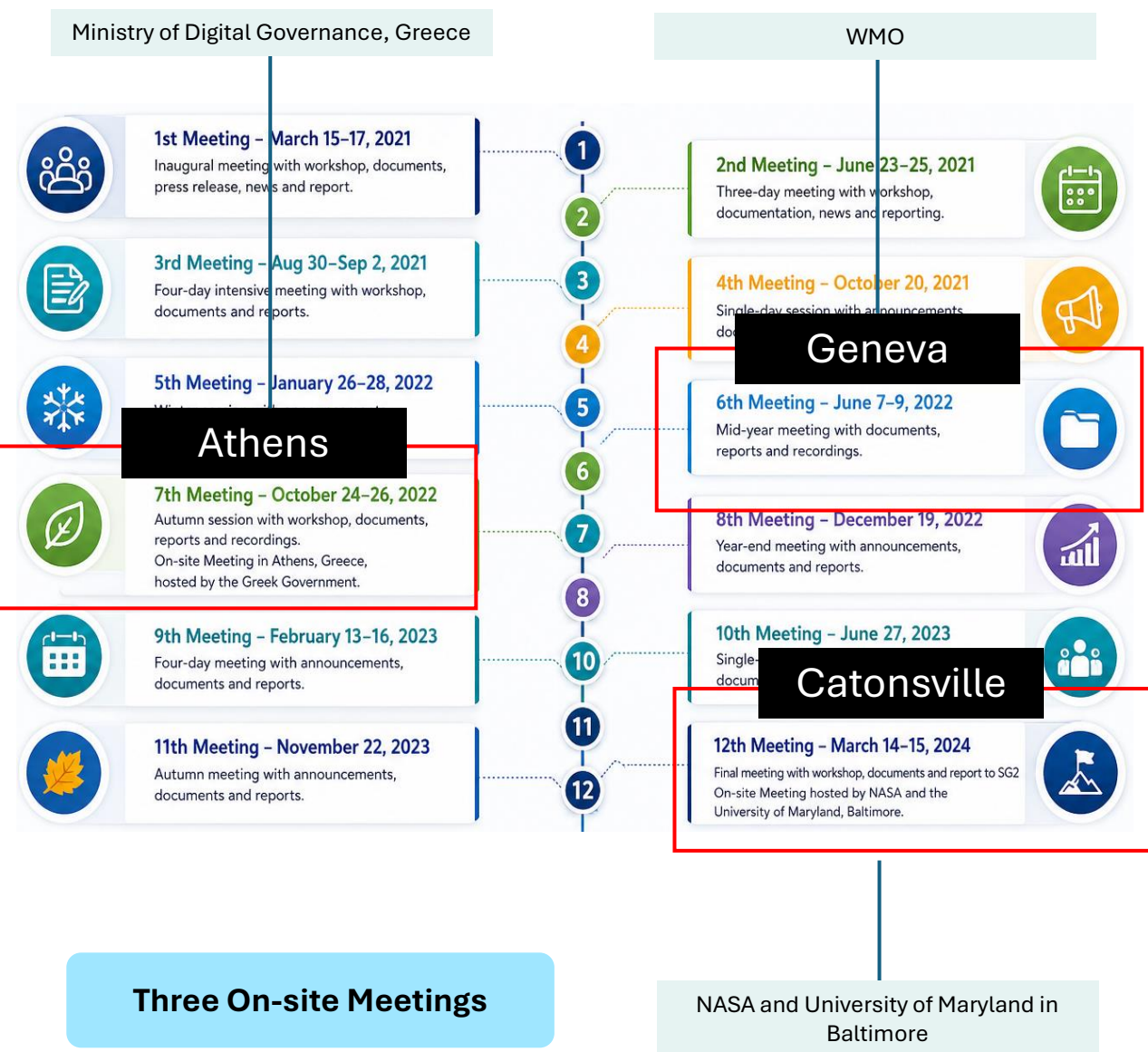


Recovery

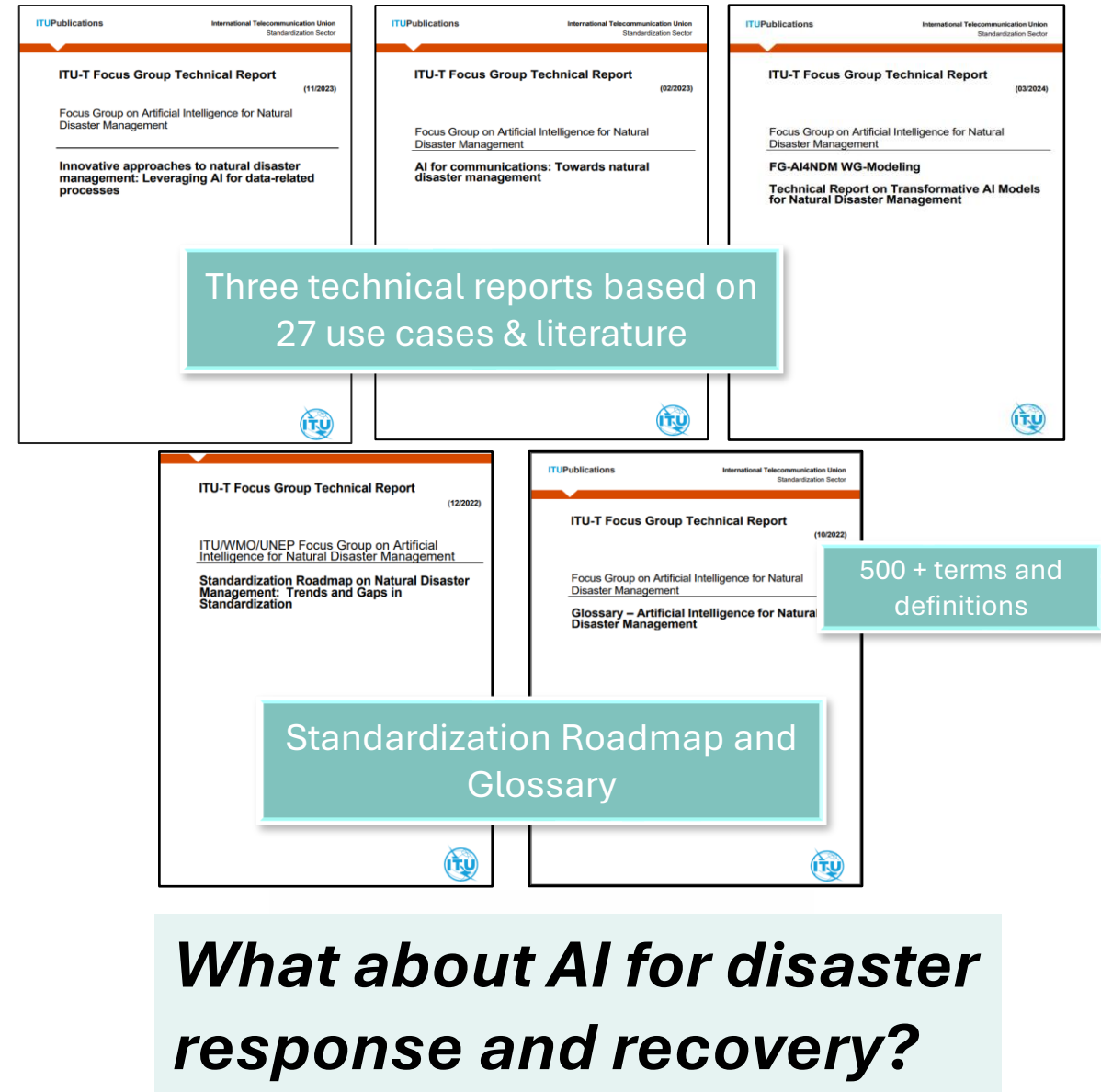
Damage assessment and resilience building

Timeline

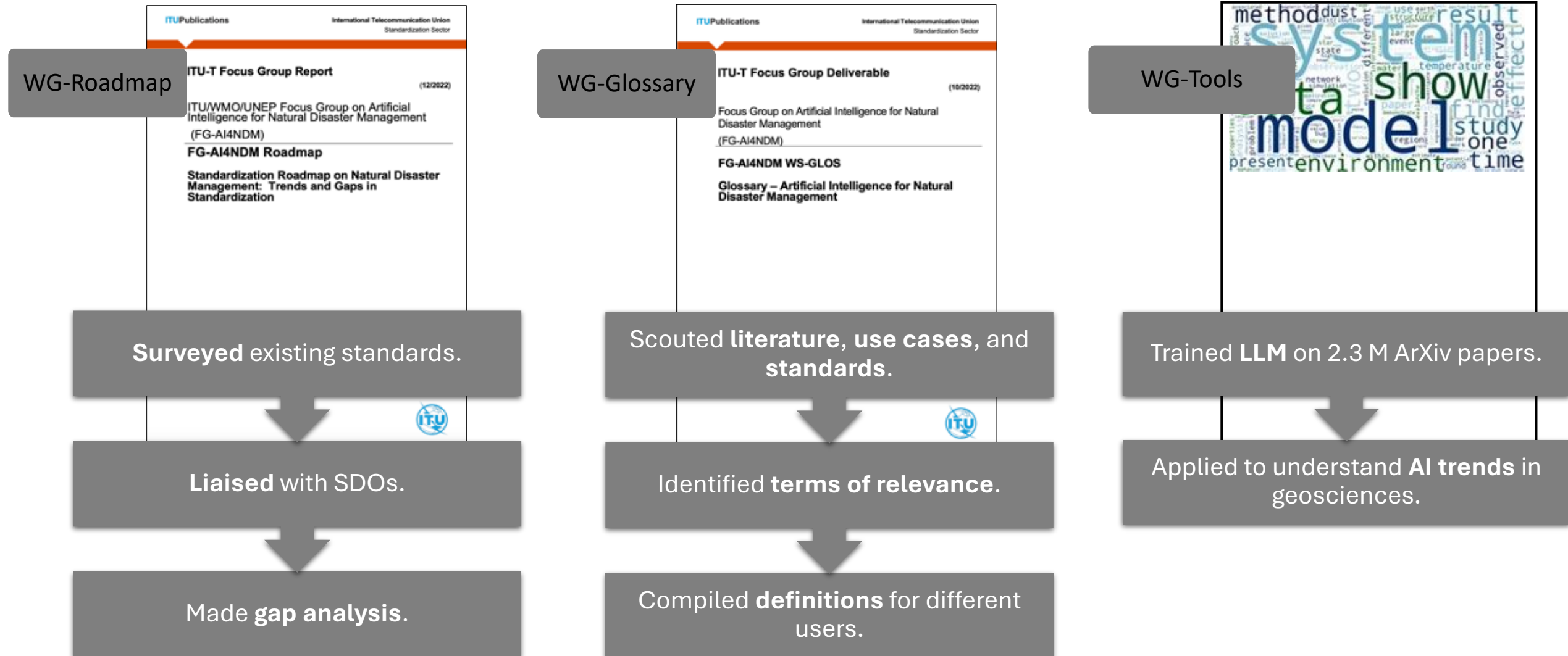
2021-2024



Outputs



FG-AI4NDM Outcomes



The Global Initiative - Vision and Strategy



Harnessing AI for Global Disaster Resilience

Vision



Launched in May 2024, the Global Initiative on Resilience to Natural Hazards through AI Solutions builds on **growing momentum** across the UN system to advance the **standardization** and deployment of AI and emerging technologies throughout the **disaster management lifecycle** from **prevention and preparedness to response and recovery**..



UNIVERSAL
POSTAL
UNION



UNITED NATIONS
Office for Outer Space Affairs



International Cooperation

Promoting collaboration among governments, international organizations, academia, and the private sector to share knowledge, standards and best practices



Data Sharing Ecosystems

Developing secure data sharing frameworks crucial for training robust AI models and enabling effective disaster prediction, mitigation and recovery



Knowledge-sharing

Resources to empower developing countries to adopt AI solutions for disaster resilience



Proof of Concept

Identifying, validating and scaling effective AI-driven tools for disaster resilience

Global Initiative on AI for Resilience

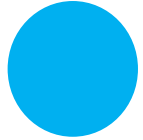


UNOOSA

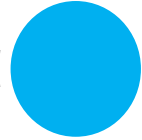


Meetings

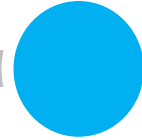
6 November 2024



8-9 May 2025



11-12 December 2025



1st Meeting
Barcelona [Barcelona
Supercomputing Centre]

2nd Meeting + Workshop
Frascati [European Space Agency]

3rd Meeting + Workshop
Brussels [European Commission]



171 Participants



150 Participants



70 Participants



Launch of AI for Landslide
challenge



Launch of AI in
Emergency and Crisis
Management Report



Establishment of Working
Groups



Seven new use-cases
onboarded



Ten new use-cases
onboarded and hands-on
exercises



Travel support for six
experts



Travel support for 15
experts

Working Groups



Working Group on Data



Working Group on Modeling



Working Group on
Communications



Working Group on Roadmap



Working Group on
Educational Materials



Working Group on Climate



Working Group on Glossary



Working Group on Tools

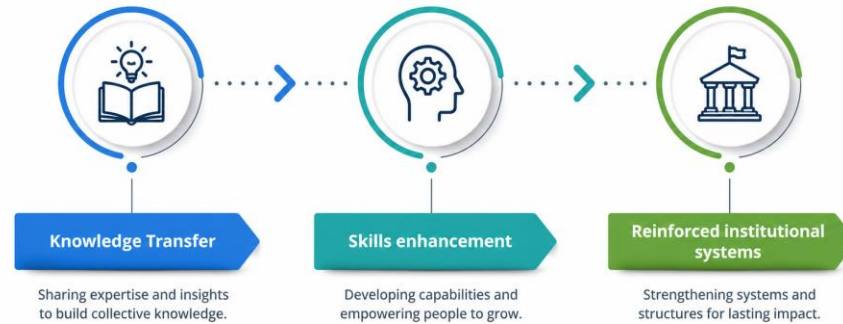


Working Group on
Proof of Concept

Educational Materials

Online Challenges and
Hackathons

Hands-on Sessions



Over **200 experts**
trained



1002 Participants



8000+ iterations
Solutions submitted



Outcomes published in
Nature



LEGO® serious play
building exercise



Showcase how all parts
of an AI system need to
work together



Building AI Pipeline



Preparing data to
deploying a tool in
real conditions

Disaster Management @AI for Good



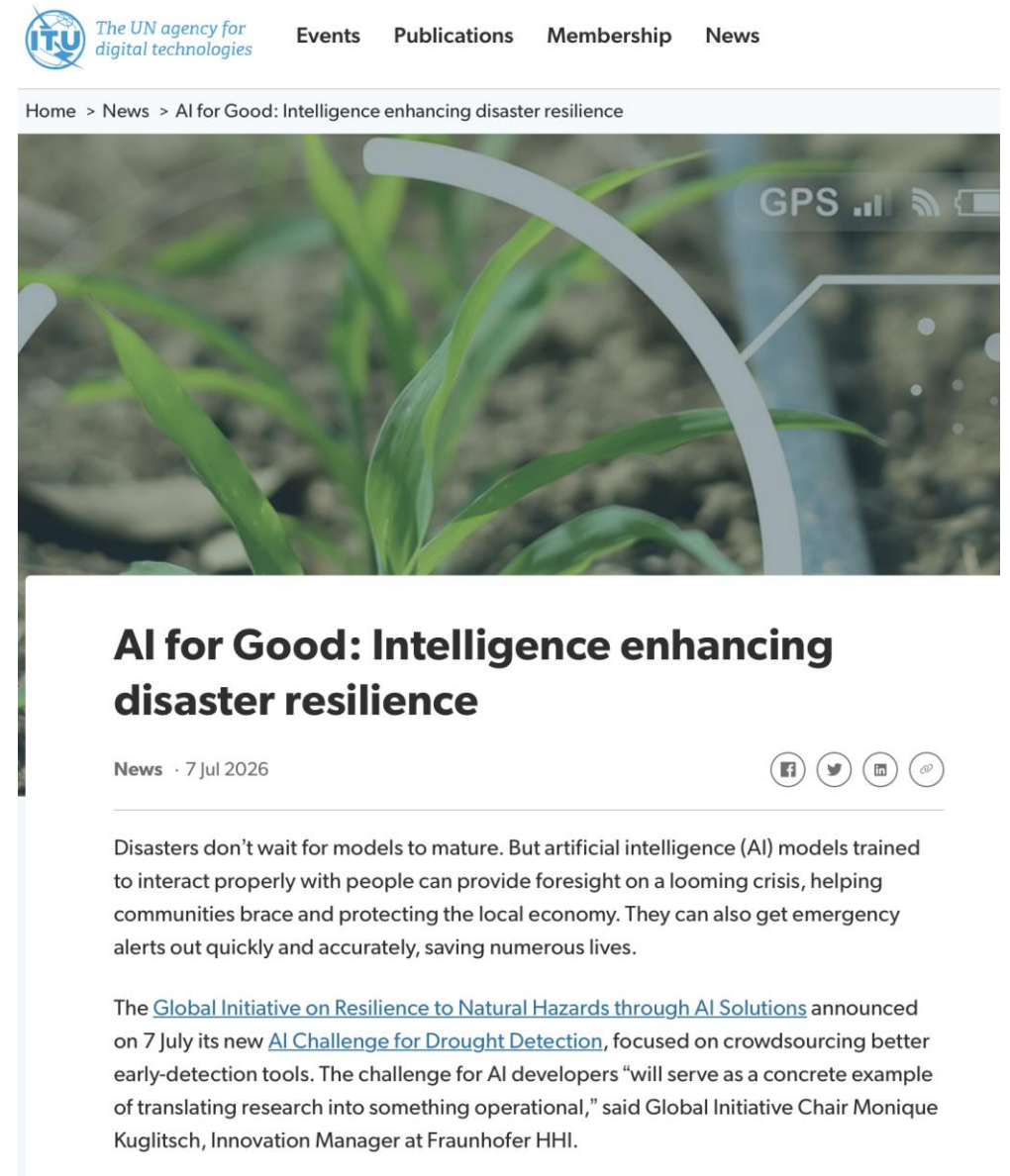
Ministerial Address delivered by the Minister of Environment from Luxembourg



Opening Remarks delivered by WMO SG, UN-HABITAT ED and Closing Remarks by Head of UNDRR



Launch of the Challenge on AI for Drought Forecasting



Challenge on AI for Drought Forecasting



Partners include ITU, WMO, European Space Agency, UNCCD, European Commission JRC, King's College London and Fraunhofer HHI

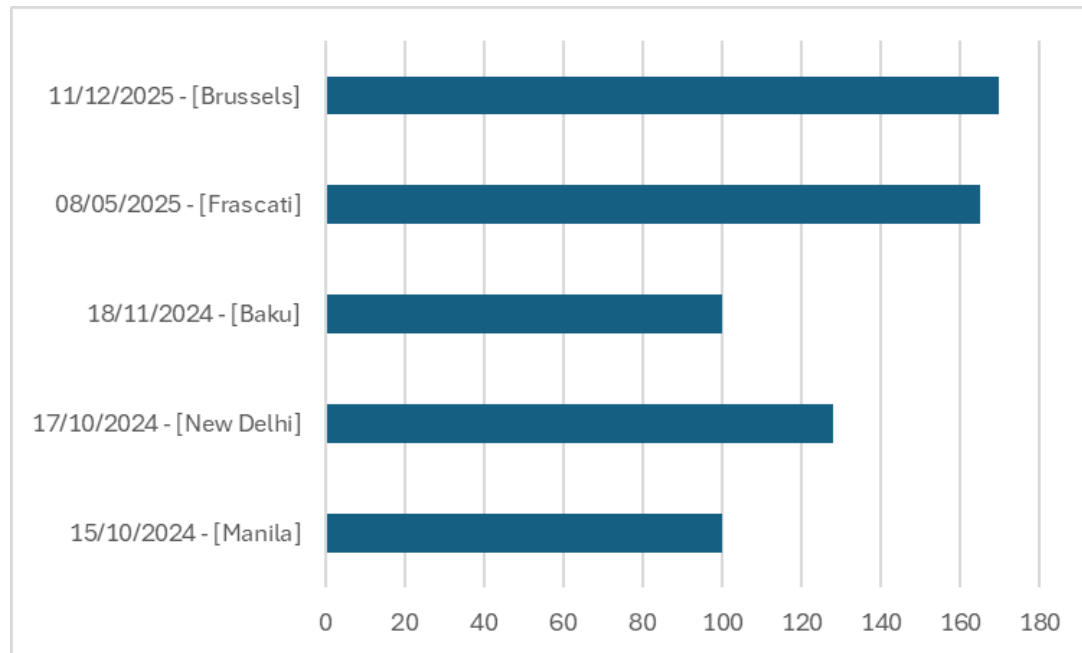


1300+ Participants



Prize sponsored by International Water Management Institute (IWMI) and European Centre for Medium-Range Weather Forecasts (ECMWF)

Workshops



ITUEvents
ITU-T Workshop on Resilience to Natural Hazards through AI Solutions
+
3rd Meeting of the Global Initiative on Resilience to Natural Hazards through AI Solutions

11-12 December 2025
Brussels, Belgium



Hosted by:



Organized by:



20 **EVENTS ON AI FOR DISASTER MANAGEMENT**
— SINCE 2020 —



2000+
PARTICIPANTS WORLDWIDE

Proof-of-Concept

The work of the Focus Group and Global Initiative have led to the development of EC-funded projects involving Initiative experts. To validate the best practices developed by the GI, three pilot projects, with a budget of **USD 10 million** are implementing them and providing structured feedback on their relevance and effectiveness.

Eight Open-Source models

Standards Adoption

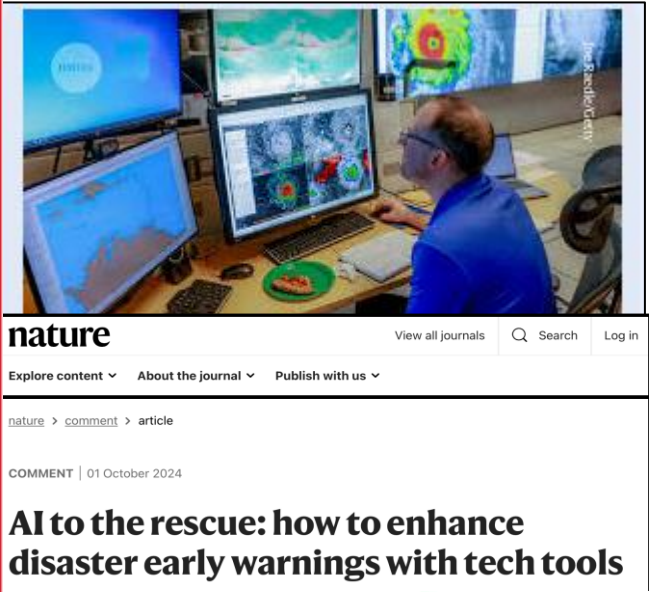
Validation of solutions
across disaster types



CLINT
CLIMATE INTELLIGENCE



News and Publications



npj | natural hazards

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Introducing AI practices and standards through

[Lorenzo Nava](#) [✉](#), [Monique M. Kuglitsch](#)

[Megan Yates](#), [Ahmed Tambal](#), [Ahmed](#)

[Weitz](#), [Arif Albayrak](#), [Chester Karwat](#)

[Uhlenbrook](#), [Pierre-Philippe Mathieu](#)

Comment

Explainability can foster trust in artificial intelligence in geoscience

Jesper Sören Dramsch, Monique M. Kuglitsch, Miguel-Ángel Fernández-Torres, Andrea Toret, Rustem Arif Albayrak, Lorenzo Nava, Saman Ghaffarian, Ximeng Cheng, Jackie Ma, Wojciech Samek, Rudy Venguswamy, Anirudh Koul, Raghavan Muthuregunathan & Arthur Hrst Essenfelder

Uptake of explainable artificial intelligence (XAI) methods in geoscience is currently limited. We argue that such methods that reveal the decision processes of AI models can foster trust in their results and facilitate the broader adoption of AI.

determine the importance of climatic variables such as precipitation for meteorological drought prediction¹⁴. In the latter example, the results aligned with physical model interpretations, emphasizing the need to include specific climatic variables as predictors in the model. Figure 1 demonstrates the possible benefits of XAI across different dimensions, using natural hazards as an example domain.

Uptake of XAI in geoscience

Check these benefits, we use explainable to see how the explainability

<https://doi.org/10.1038/s41561-025-01639-x>

[Check for updates](#)



RESEARCH & ACADEMIC RECOGNITION

Featured **four times** in *Nature* and leading peer-reviewed journals since launch



GLOBAL MEDIA VISIBILITY

Highlighted **twice** in *TIME* Magazine across articles and issues

Leading Experts Engagement

Co-authored with Special Representative of the United Nations
Secretary-General (SRSG) for Disaster Risk Reduction

How AI can help fund resilience, not disasters

News · 13 Oct 2025



By co-authors from the Global Initiative on Resilience to Natural Hazards through AI Solutions and the Working Group on AI for Climate Applications

In 2024, the World Meteorological Organization (WMO) recorded 617 [extreme weather events](#) based on reports from countries worldwide. Of those, 152 were classified as unprecedented and 297 as unusual.

According to WMO's [State of the Global Climate](#) report, these disasters displaced more than 824,000 people, injured 1.1 million, and caused 1,700 fatalities.

Although the numbers are troubling, they do not capture the full spectrum of impacts and consequences as global climate change takes hold. Intensifying disasters also, for example, entail a financial burden.

Interview with WMO SG

AI helps turn meteorological data into early action

News · 23 Mar 2026



As the impacts of extreme weather intensify, data needs to be translated into decisions – and fast. This is a challenge made for artificial intelligence (AI).

***Celeste Saulo**, Secretary-General of the World Meteorological Organization (WMO), and **Monique Kuglitsch**, Chair of the Global Initiative on Resilience to Natural Hazards through AI Solutions led by the International Telecommunication Union (ITU), reflect on how AI is reshaping disaster management, where progress is being made, and the challenges that remain.*

How do you see the role of AI evolving in disaster preparedness over the next decade?

