



unesco



International Conference: A Decade of the Sendai Framework for Disaster Risk Reduction: Envisioning the Road Ahead

26 September 2024
Room II, UNESCO HQ
7 Place Fontenoy, Paris

**S U M M A R Y
R E P O R T**

O1

Opening

In her opening address at the international conference, “A Decade of the Sendai Framework for Disaster Risk Reduction – Envisioning the Road Ahead,” Ms. Lidia Brito reflected on the progress made in disaster risk reduction (DRR) over the past decade while encouraging participants to anticipate future challenges. She acknowledged the growing complexity of disaster risks and emphasized the need for collaboration and innovation. Her remarks outlined four key areas that are essential to shaping the road ahead:

- Science, Technology, and Innovation (STI) by utilizing cutting-edge technologies like Artificial Intelligence (AI) to enhance disaster preparedness and response.
- Resilient Built Environments to Focus on strengthening infrastructure in addition to early warning systems to reduce casu-

alties and economic losses.

- Culture, Indigenous Knowledge Systems and Nature-based Solutions by incorporating these vital elements into disaster resilience strategies.
- Economics of Disaster Risk Reduction by highlighting the critical importance of investing in prevention to mitigate the economic impact of disasters.

In addition, Ms. Brito emphasized the indispensable role of international collaboration in tackling global disaster challenges. Contributions from Japan, Brazil, Pakistan, Dominican Republic, Vietnam, Madagascar, and the European Union showcased a shared commitment to protecting cultural heritage, leveraging indigenous knowledge and incorporating innovative tools to foster resilience. As risks grow more complex, the conference served as a powerful call to action – urging participants to foster innovation and strong partnerships to build resilient communities worldwide, ensuring that no one is left behind.



Lidia Brito
Assistant Director General
for Natural Sciences
UNESCO

Plenary

(moderator: Soichiro Yasukawa)

Mr Takehiko Kano, Ambassador, Ambassador Permanent Delegate, Japan

In his address, Mr Takehiko Kano reaffirmed Japan's steadfast commitment to disaster risk reduction (DRR) and highlighted UNESCO's pivotal role in advancing this global agenda. Drawing from Japan's experiences with devastating disasters, such as the 2011 Great East Japan Earthquake, he shared valuable insights into the nation's improved preparedness. These include the integration of advanced early warning systems and comprehensive tsunami mitigation measures, including relocating residents to safer locations and constructing specialized evacuation structures.

Mr. Kano urged UNESCO to enhance its efforts in supporting early warning systems and safeguarding cultural heritage sites worldwide. He also highlighted Japan's financial contributions to UNESCO's disaster risk reduction projects across Asia-Pacific, the Caribbean, and Africa.

In conclusion, Mr Kano called on UNESCO to strengthen its cross-sectoral DRR efforts and invited countries to participate through funding and sharing expertise, emphasizing the importance of learning from past disasters to enhance future resilience.

Ms Michaela Andresova, Deputy Permanent to UNESCO, European Union

Ms Michaela Andresova reflected on the European Union's dedication to the goals of the Sendai Framework, adopted in 2015, which marked a shift from disaster management to risk reduction. She highlighted the compounded challenges posed by global crises, such as the COVID-19 pandemic, climate change, and conflicts, emphasizing how these crises exacerbate human suffering, disrupt supply chains, and threaten food and energy security. The European Union (EU) has actively contributed to the Sendai

Framework's goals, adopting initiatives such as the European Green Deal, which focuses on the transition to climate-neutral economies, and developing programmes aimed at enhancing resilience. The EU Civil Protection Mechanism has seen a dramatic increase in activations, highlighting the growing frequency and intensity of disasters. Additionally, the EU has adopted disaster resilience goals and supports initiatives such as Nature-based Solutions and Copernicus, an observation programme which plays a vital role in supporting disaster recovery efforts.

Ms. Andresova also highlighted the importance of protecting cultural heritage, vulnerable to both natural and human-induced disasters. EU programmes, including OPERANDUM, a project leveraging Nature-based Solutions to reduce hydro-meteorological risks in Europe, and coastal resilience projects, exemplify efforts in this area. However, challenges remain, such as gaps in financing, data availability, and equal implementation across countries. She concluded with an urge for continued collaboration and technological innovation, including the use of AI, big data, and satellite-based systems, to enhance global resilience as 2030 approaches.

Ms Samia Nascimento Sulaiman, General Coordinator of Articulation, Department of Risk Mitigation and Prevention, Brazil

Representing the Brazilian Ministry of Cities and the G20 Disaster Risk Reduction Working Group, Ms. Samia Sulaiman emphasized the importance of resilient recovery and prevention in disaster management. She highlighted the group's focus on universal early warning systems, disaster-resilient infrastructure, financial frameworks, and Nature-based Solutions. Under Brazil's presidency, a new priority has been added: addressing inequality to reduce vulnerability of at-risk communities, reinforcing the commitment to inclusive and equitable disaster risk reduction. Brazil's contributions include initiatives such as solidarity kitchens, which originated as grassroots social movements and have since evolved into national policies supporting vulnerable communities during emer-

gencies.

Brazil is also developing community risk plans, urbanization initiatives, and award programmes to empower vulnerable populations. The G20 Disaster Risk Reduction Working Group has prepared three landmark compendiums: one on community based approaches to disaster risk reduction and second on good practices in disaster resilient infrastructure. The third, developed in collaboration with UNESCO, showcased good practices on Nature-based Solutions. These compendiums were presented at the G20 ministerial meeting in November 2024, where the group adopted the first-ever G20 ministerial declaration on disaster risk reduction. This pivotal declaration aims to address inequality and champion inclusive, multi-stakeholder approaches to tackling disaster risks and strengthen global resilience, aligning with the objectives of the Sendai Framework.

strategies from 57 to 129 countries by 2023, challenges remain.

Mr Panda showcased successful examples, including Cambodia's adoption of wind-resistant houses and extensive tree planting initiatives, Fiji's commitment to "building back better" following Cyclone Winston, and Canada's innovative use of green infrastructure. Despite these achievements, financing remains a major obstacle, with less than 1% of national budgets allocated to risk prevention. This shortfall disproportionately impacts vulnerable populations, including women, indigenous communities, and persons with disabilities who are often left behind. Data collection and accessibility, particularly in least developed countries, is also a key issue. While mortality rates have decreased, disaster-affected population has increased by 80% since 2015.



Mr Abhilash Panda, Head, Financing Prevention, De-risking Investment and Infrastructure Resilience, United Nations Office for Disaster Risk Reduction

Mr Abhilash Panda highlighted the critical nature of the Sendai Framework for Disaster Risk Reduction, adopted as the successor to the Hyogo Framework, which has significantly shaped global efforts to reduce disaster risks over the past decade. While there have been successes, such as the doubling of national disaster risk

Looking ahead, the integration of disaster risk reduction with broader sustainable development goals is essential. As climate change accelerates, rapid urbanization and extreme weather events demand urgent action. Strengthening local capacities, securing sustainable financing, and ensuring early warning systems for all are crucial for achieving the Sendai Framework's targets by 2030.

Session 1

Science, Technology and Innovation

(moderator: Faduma Ali)

The session focused on addressing climate change and disaster risk management through STI. Key themes included proactive disaster management, early warning systems, and the integration of data-driven approaches. Speakers emphasized the importance of capacity-building, inclusivity, and international cooperation to develop effective solutions for vulnerable communities facing hazards such as floods, droughts, and landslides. They highlighted the role of global standards, interdisciplinary collaboration, and local engagement in disaster preparedness. The session concluded with a call for stronger connections between science, policy, and communities, ensuring that complex scientific data is communicated effectively and is accessible to all stakeholders.

Mr Abou Amani, Director, Division of Water Sciences, UNESCO

Mr. Abou Amani outlined four critical pillars for addressing climate-related water hazards:

1. Identifying vulnerable populations, infrastructure, and communities at risk.
2. Establishing early warning systems for hazard monitoring and timely evacuation.

3. Enhancing capacity-building through open-access training and collaboration among communities, policymakers, and experts.
4. Ensuring inclusivity by involving communities in co-developing sustainable and resilient solutions.

Concrete examples highlighted included flood mapping in Zimbabwe and Mozambique, drought vulnerability assessments in Chile and South Africa, and the implementation of early warning systems in the Niger and Volta River basins. The presentation concluded with a call to action for adopting innovative approaches to data collection, including but not limited to leveraging citizen science and related methodologies. These efforts aim to improve resilience through a preventive, protective, and predictive approach while actively and empowering vulnerable communities.

Lieutenant General Inam Haider Malik, Chairman, National Disaster Management Authority, Pakistan

Lieutenant General Inam Haider Malik discussed Pakistan's evolving approach to disaster risk management, emphasizing a shift from reactive to proactive measures in light of increasing global challenges. Emphasis was placed on the country's vulnerability to disasters such as floods and glacier melting. Lieutenant General Malik detailed Pakistan's integration of technology to improve early warning systems, anticipate disasters, and mitigate their impact.

By collaborating with global universities and employing AI, Pakistan is developing strategies to enhance food security, water management, and disaster mitigation. The country's National Emergency Operations Center (NEOC) can predict disasters up to six months in advance. The speaker highlighted the importance of global cooperation and technology-driven solutions to address climate change's escalating effects. He emphasized the need for a more regionally focused and equity-based global support system to effectively manage future disasters and build resilient communities.

Mr Toshio Koike, Executive Director, International Center for Water Hazard and Risk Management, Japan

Mr. Toshio Koike addressed the increasing frequency and intensity of water-related disasters due to climate change, emphasizing the need to downscale global data and correct biases to improve hydrological modelling. By integrating scientific, environmental, and socio-economic information, holistic impact assessments can be achieved. Collaboration between science, policy, and local communities was highlighted as crucial for mitigation and adaptation. Mr. Koike underlined the pivotal role of facilitators who bridge science and society, sharing knowledge and indigenous practices.

Examples from the Philippines and the Niger and Volta Basin illustrates the implementation of online systems for disaster risk reduction, including early warning systems and capacity-building training programmes. The speaker stressed the importance of standardizing these frameworks globally and aligning policies with scientific evidence. Japan's experience was cited as a case study, where climate projections informed infrastructure adaptation to mitigate risks effectively. The presentation concluded with a call for enhancing international collaboration to advance water-related climate action and harmonize policy standards globally to ensure a unified approach to address global challenges

Mr Tom De Groeve, Head of Disaster Risk Management Unit, Joint Research Centre, European Commission

Mr. Tom De Groeve presented an overview of his work in disaster risk management, emphasizing two main areas: data collection and early warning systems. The Joint Research Centre runs a team of 100 scientists focusing on data-driven risk assessment, including the evolution of risks over the past decade. Collaboration with European Member States is crucial in improving risk measurement and addressing both conflict and natural hazards. Mr De Groeve also discussed the Copernicus Emergency Man-

agement Service, which provides open data for floods, wildfires, and situational awareness. By advancing AI and satellite technologies, the service enhances long-term forecasting for disaster preparedness. He concluded by emphasizing the importance of capacity building, foresight, and AI in detecting early warning signs and advancing future research.

Mr David Oehmen, Programme Officer, United Framework Convention on Climate Change

Mr David Oehmen focused on the potential of AI to address critical gaps in disaster response, including efficiency, accuracy, and coverage. While AI offers promising solutions, challenges such as data bias—stemming from models trained predominantly on Global North datasets—were acknowledged. He emphasized the need for global standards to ensure AI systems are reliable, interoperable, and ethical, given their direct impact on human lives.

Mr Oehmen highlighted ongoing international efforts, including work by the UN focus group on AI for disaster risk management, and referenced key reports such as UNESCO's Ethics of Artificial Intelligence and the Final Report of the High-level Advisory Board on Artificial Intelligence. He concluded by encouraging collaboration in this rapidly evolving field and inviting stakeholders to join global initiatives.

Ms Amal Kasry, Chief of Section, Basic Sciences, Research, Innovation and Engineering, UNESCO

Ms Amal Kasry emphasized the importance of capacity-building in basic sciences and engineering to enhance disaster risk reduction (DRR). She highlighted UNESCO's focus on Science, Technology, Engineering, and Mathematics (STEM) as crucial for advancing technologies that predict and mitigate disasters, such as earthquake early warning systems and flood risk management.

By fostering skills in coding, data analysis, and scientific research, UNESCO equips scientists

and engineers to address global challenges. Ms Kasry provided examples of UNESCO's efforts, including remote access to scientific equipment and intensive boot camps for young researchers. These initiatives have trained hundreds of scientists and engineers in disaster-related fields and entrepreneurship, bringing innovative ideas from the lab to the market. She concluded by stressing the importance of STEM outreach to young people and promoting scientific literacy, linking these efforts to the United Nations's International Decade of Sciences for Sustainable Development (2024 – 2033).



Session 2

Resilient Built Environment

(moderator: América Bendito Torija)

Session 2 focused on policies, emphasizing the crucial role of advanced technologies, local knowledge, and international collaboration. Speakers highlighted the importance of resilient infrastructure, particularly in education and housing, and discussed innovative methods for retrofitting and reconstruction. Themes included the integration of AI and data-driven solutions, community engagement, and balancing modern and traditional construction practices. The discussion underscored the need for local capacity building, cultural sensitivity, and the careful application of global standards in disaster recovery. Challenges such as resource constraints, balancing resilience with cost, and the role of financial institutions in supporting recovery efforts were also addressed.

Ms Dina D'Ayala, Professor, University College London, United Kingdom

Ms Dina D'Ayala opened by emphasizing the importance of reducing disaster risks using advanced technologies, referencing the Sendai Framework with a particular focus on Targets D and E. These targets emphasize the need to reduce disaster damage to critical infrastructure and increase the number of countries implementing national and local DRR strategies.

She highlighted key partnerships, like those with UNESCO and the Dominican Republic, alongside local community engagements aimed at building capacity. The discussion focused on tools for improving school infrastructure resilience, including retrofitting and addressing social vulnerabilities. Advanced computational methods are used to model damage scenarios and recovery strategies, with a focus on optimizing school and road infrastructure resilience. The presentation concluded by stressing the responsible use of AI in DRR strategies, highlighting the role of local knowledge, and the need to consider the broader social context, such as ensuring the safety of homes to prevent schools from being repurposed as shelters.



Question and Answer Session, Session 2

Ms Ana Arredondo Eve, Risk Management Department, Dominican Republic

Ms Ana Arredondo Eve discussed the Dominican Republic's commitment to improving school safety, infrastructure, and education quality in collaboration with UNESCO. The speaker highlighted the government's significant investment in education, which allocated approximately 19.03% of its national budget in 2022. Despite progress, issues persist, such as the deficit in school infrastructure and seismic vulnerability. The BERLAC project by UNESCO, which the Dominican Republic co-implemented, aimed to improve school safety through risk-based policies, local construction sector capacity strengthening, and raising seismic risk awareness. The project uses AI and advanced methodologies to assess school facilities, offering data-driven solutions for reducing risks from natural hazards like earthquakes and hurricanes. The speaker emphasized the importance of following construction regulations to enhance school resilience. The speech concluded with a call to extend the project nationwide and thanked UNESCO for its continued support.

Ms Sabine Kast, Executive Director, Miyamoto International, United States of America

Ms Sabine Kast shared insights from the housing recovery efforts following the Afghanistan earthquake, which affected approximately 100,000 people. The speaker compared two approaches to reconstruction: the vernacular (locally sourced clay homes) and non-vernacular (concrete and steel homes). The vernacular

approach proved more effective due to its lower cost (\$1,500 per house compared to \$6,000 for non-vernacular), quicker construction time, and better alignment with local construction practices, which enhanced community engagement and home quality. Vernacular homes also performed better in terms of technical and social factors, despite assumptions that concrete homes would be safer. The failure of some non-vernacular homes was linked to rapid, poorly executed construction practices and disregard for local materials and techniques. This case study highlighted the risks of introducing unfamiliar technologies without understanding local vulnerabilities and stressed upon the importance of cultural and community involvement in disaster recovery.

Ms Maghfira Abida, U-INSPIRE, Indonesia

Ms Maghfira Abida presented about Indonesia's vulnerability to natural hazards, particularly tsunamis, due to its geographic location and socioeconomic challenges such as poverty and disability. She highlighted increasing frequency of disasters since the 2004 tsunami, prompting government efforts in infrastructure, education, urban planning, and finance. Despite efforts, economic losses have been significant. Ms Abida emphasized the importance of local wisdom, such as the indigenous Palu people's knowledge of disaster risk, which contrasts with government-led settlement programmes in vulnerable areas. The youth-led initiative, U-INSPIRE Indonesia, established in 2018 with UNESCO Jakarta's support, focuses on DRR, particularly coastal vulnerability. They utilize technology-driven solutions, including data collection through sensors and drones, and emphasize social resilience through community engagement. The group is committed to promoting inclusive, climate-resilient initiatives and developing AI-based disaster preparedness tools.

Mr Soichiro Yasukawa, Chief, Disaster Risk Reduction, UNESCO

Mr Soichiro Yasukawa reflected on discussions from the Sendai Conference in 2015 regarding building resilience, particularly focusing on

the development and enforcement of building codes. Over the past decade, there has been progress in raising awareness about the importance of such codes, but he emphasized the need for a broader approach. Mr Yasukawa mentioned innovations like AI that were not present in 2015 and now play a critical role in disaster preparation. Additionally, he highlighted the importance of involving various stakeholders, including governments, private sector, and financial institutions, to address challenges such as informal settlements and financing safer construction. UNESCO is working on building a network of experts focused on the built environment to tackle rapid-onset hazards, safer infrastructure, and enhance disaster resilience. The network aims to foster collaboration, knowledge creation, and stakeholder engagement, with discussions still in the preliminary stages.

Session 3

Culture, Nature-based solution, Indigenous Knowledge System for Resilience

(moderator: Irina Pavlova)

The session highlighted the integration of culture, nature, and indigenous knowledge into

DRR and climate resilience strategies. Panellists emphasized the need to merge traditional and scientific methods to protect cultural heritage and adapt to climate change, particularly in vulnerable regions like Small Island Developing States (SIDS). Cross-sectoral collaboration, interdisciplinary approaches, and community engagement were recurrent themes, stressing the value of local knowledge, such as indigenous practices, in shaping resilient strategies. Financial and technical challenges were discussed, especially for SIDS, with a call for improved access to resources and inclusion in policymaking. The session concluded with a focus on practical, Nature-based Solutions and knowledge-sharing, underscoring the importance of localized approaches and cooperation among international organizations, governments, and local communities.

Mr Rohit Jigyasu, Programme Manager, International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM)

Mr Rohit Jigyasu emphasized the need to move beyond the Sendai Framework by integrating culture and nature for resilience-building. Cultural heritage has traditionally been considered in isolation, but disasters impacting heritage sites, like floods, are often caused by unregulated urban development affecting surrounding landscapes. He then advocated for addressing risks at multiple levels through territorial planning, recognizing the interconnectedness of cultural and natural settings. The use of traditional knowledge alongside scientific methods to address disaster risk is an essential component. The speaker also underscored the importance of cross-sectoral collaboration, better communication, and standardized tools for disaster risk management. Lastly, the presentation emphasized integrating heritage conservation into climate change and disaster risk reduction policies, and vice versa, to create more resilient strategies for cultural and natural heritage protection.

Ms Michelle Mycoo, Professor, the University of the West Indies, Trinidad and Tobago

Ms. Michelle Mycoo highlighted the significance of integrating indigenous and local knowledge into policy and practice, especially in the context of SIDS. Indigenous knowledge, which has evolved over generations, offers valuable insights into planetary functions, such as climate and ecosystems. However, this knowledge often remains marginal in national adaptation plans, and there is a need for collaboration between indigenous communities and scientific institutions. The speaker advocates for integrating traditional solutions, like vernacular architecture and nature-based approaches such as mangrove planting, into disaster risk reduction strategies. The importance of mutual respect, trust, and continuous stakeholder engagement was stressed upon to address the impacts of climate change and extreme weather events. Moreover, the speaker highlighted financial challenges, particularly in accessing climate funds, and calls for the redesign of financing systems to better support SIDS alongside the need for robust data to improve policymaking and project implementation.

Mr Nguyen The Son, Deputy Director, Hue Royal Antiquities Museum, Vietnam

The restoration of the Hue Citadel's waterway network, part of the UNESCO World Heritage-listed Hue Monuments Complex, is a critical response to the impacts of climate change. Built in the early 19th century, the network served vital roles in transportation, flood regulation, and citadel protection but has suffered damage from natural hazards, human encroachment, and climate change. The restoration includes dredging waterways, repairing stone embankments, relocating encroaching households, and restoring ecosystems while raising community awareness on disaster risk reduction, especially among youth. To enhance disaster resilience, cultural heritage conservation must align with the Sendai Framework, adopting community-centred and nature-based approaches, prioritizing the safety of people and heritage, and fostering international collaboration to share research and innovative methods.

Restored heritage sites can simultaneously preserve cultural legacy, boost tourism, create livelihoods, and act as safe shelters during disasters, showcasing the integration of cultural preservation and disaster resilience.

Mr Serge Snrech, Head of Climate Division, Agence Française de Développement

Mr. Serge Snrech highlighted the importance of Nature-based Solutions (NbS) and locally led adaptation in building resilience. He detailed Agence Française de Développement's work in over 100 countries, including a €7.5 billion allocation to climate initiatives in the past year, with €3 billion focused on adaptation.

Projects in Mozambique were presented as examples, emphasizing the role of mangrove protection in disaster mitigation. Mr. Snrech also stressed the value of small, community-driven projects and regional cooperation for knowledge exchange. While highlighting the importance of local knowledge, particularly in urban areas, he also noted the need for formal science to help communities access emerging green and blue markets, such as carbon trading. He concluded by calling for technical assistance to formalize local knowledge and ensure its sustainability in global markets.



Question and Answer Session, Session 3

Mr. Antonio De Sousa Abreu, Director, Division of Ecological and Earth Sciences, UNESCO

Mr. Antonio De Sousa Abreu outlined UNESCO's collaborative efforts to promote sustainable development, combining traditional knowledge with scientific research. He emphasized the need for clear vision and practical implementation, working with member states, scientific communities, and local actors. Specific examples included Biosphere Reserves, where 300 million people live, demonstrating the integration of socio-economic development, education, cultural knowledge, and environmental conservation. Projects in the Amazon, Cambodia, and Spain showcase the use of traditional knowledge for species mapping, disaster risk prevention, and sustainable livelihoods. The presentation also highlighted citizen science, mangrove restoration, and knowledge-sharing as key tools for enhancing resilience and capacity building. UNESCO's programmes aim to promote peace with nature, with a focus on preserving biodiversity, fostering adaptation, and improving sustainability. Despite limited resources, the speaker stressed the importance of communication, cooperation, and investment to ensure long-term success in these initiatives.

Session 4 Economics of Disaster Risk Reduction

(moderator: Soichiro Yasukawa)

This session focused on the need for proactive measures to mitigate the impacts of disasters. Panellists emphasized the importance of land-

use planning, infrastructure resilience, and prioritizing investments in vulnerable areas. Systemic vulnerabilities in infrastructure networks were discussed, alongside the cascading effects of disasters on interconnected systems like energy and telecommunications. Presenters stressed that prevention and preparedness, such



Question and Answer Session, Session 4

as risk mapping and early warning systems, offer significant economic and social benefits. The session also underscored the critical role of local capacity-building, gender-responsive approaches, and incorporating indigenous knowledge. During the discussion, the link between poverty and disaster vulnerability was highlighted, as well as the need for better data on how reducing inequality can mitigate disaster risks. The private sector's role in DRR and the need for improved data reporting were also discussed, reinforcing the importance of multi-sectoral collaboration.

Mr Paolo Avner, Senior Economist, World Bank

Mr. Paolo Avner presented an overview of the economics of disaster risk management and DRR. It began by using satellite imagery to illustrate how urbanization in vulnerable areas, like riverbeds, increases exposure to flooding. Globally, rapid urbanization in risky areas, particularly in middle-income countries, outpaces safer growth. The speaker highlighted the importance of land-use planning to reduce such

risks. Besides, by focusing on economically significant areas and considering well-being losses alongside asset losses, his approach broadened the discussion of disaster impacts towards the socio-economic perspective. Using examples from the Philippines, Mr. Avner demonstrated how socio-economic resilience metrics can shift focus beyond infrastructure damage to the overall well-being of affected populations. He concluded by emphasizing that DRR is not just an expense but an investment that yields significant social and economic benefits.

Mr Raghav Pant, Senior Research Associate, University of Oxford, United Kingdom

Mr. Raghav Pant focused on the development of system-of-systems frameworks to assess disaster impacts on infrastructure networks. He emphasized the need to understand not only direct but also indirect damages, and the cascading effects on interconnected systems like energy, water, and telecommunications. Mr. Raghav's research models these systemic vulnerabilities to quantify risks, offering insights into how disruptions propagate through society. His team's work has been applied in countries like Vietnam and Argentina, where they assessed climate risks to infrastructure, prioritized adaptation interventions, and provided actionable insights to governments. These frameworks helped stakeholders make informed decisions on resilience investments, focusing on the most vulnerable areas. Additionally, the speaker highlighted efforts to create web-based tools for interactive risk assessments, particularly for Nature-based Solutions, co-developed with local institutions like Jamaica's Planning Institute. The research contributes to global frameworks such as the Sendai Framework and SDGs, enhancing infrastructure resilience to disasters.

Ms Pauline Georges, Project Officer, Hazard, Prevention, Reduction and Adaptation Unit, Expertise France

The presentation highlighted the importance of addressing disaster risk through prevention, preparedness, and adaptation, focusing on natural hazards exacerbated by climate change. Cli-

mate-related disasters, like floods and storms, have led to significant economic losses, with \$280 billion in losses in 2023 alone. The speaker emphasized that proactive measures, such as risk mapping, early warning systems, and emergency preparedness, can mitigate these impacts, potentially saving 7 to 9 dollars for every dollar invested in prevention. The role of local capacity-building and gender-responsive approaches was underscored. For example, a project in the Philippines, supported by a \$250 million loan, focused on strengthening local government capacities for risk analysis, training, and disaster planning. The presentation concluded by stressing the need for long-term planning and adaptation efforts. Increasing climate investment in developing countries is vital to cope with rising climate risk. Collaboration with local knowledge and indigenous practices is crucial for successful disaster risk reduction measures.

Mr Kit Miyamoto, Global CEO, Miyamoto International, United States of America

Mr. Kit Miyamoto explored the concept of resiliency through the example of Türkiye's 2023 earthquake and risk analysis in the Philippines. Resiliency is measured by how quickly areas recover after an event, aiming to reduce losses either through infrastructure improvements or efficient response efforts. The Türkiye earthquake affected 14 million people, destroyed 35,000 medium-rise buildings, and caused over 51,000 deaths. The lack of seismic resilience in older buildings and insufficient inspections were key factors in the devastation. Despite this, Türkiye response was remarkable, mobilizing emergency teams and contractors within days, reopening infrastructure quickly, and beginning reconstruction rapidly. The presenter contrasted this with Manila, where schools face a significant earthquake risk. A probabilistic risk assessment predicted that a 7.5 magnitude earthquake could kill 24,000 students due to unsafe buildings. A proposed solution is to reinforce the most vulnerable structures to reduce fatalities. Mr. Miyamoto emphasized the importance of strategic investment in resiliency for disaster mitigation.

Mr Mahefasoa Randrianalijaona, Professor, University of Antananarivo, Madagascar

The presentation emphasized the importance of international frameworks for DRR, particularly the Sendai Framework, Agenda 2030, and the Paris Agreement. The speaker highlighted a shift from traditional disaster response toward a proactive focus on disaster risk reduction, stressing investment in resilience and the "Build Back Better" approach. Three main priorities of the Sendai Framework were discussed: understanding disaster risk, improving governance, and investing in DRR. The speaker emphasized the importance of integrating NbS into these strategies, aligning environmental protection with community resilience. Additionally, the speaker advocated for multidisciplinary, multi-sectoral approaches to disaster management and highlighted the need to engage local communities through population-public-private partnerships. Finally, they called for risk-informed decision-making, considering both nature and socio-economic factors to maximize the impact of investments and reduce vulnerabilities effectively.

05 Conclusion

The conference concluded by reflecting on the importance of collaboration, innovation, and resilience in DRR. The discussions revisited the significance of the Sendai Framework, highlighting progress in areas such as science, technology, and policy. Sessions underscored the challenges of translating scientific knowledge into actionable policies and involving local communities. The need for effective communication that empowers communities was emphasized, alongside a shift from despair to proactive mitigation. The conference also explored the critical role of culture, NbS, and indigenous knowledge in building resilient communities. The economic imperatives of DRR were addressed, focusing on risk-informed investments and innovative partnerships, with special attention to the vulnerability of impoverished populations. International cooperation was deemed vital for promoting sustainable resilience. The conference concluded with optimism, hoping the momentum generated will guide future efforts toward inclusivity, sustainability, and peace in DRR.



Conference group photo

**FEEL FREE TO
CONTACT US**

UNESCO Disaster Risk Reduction

Email: drd@unesco.org

Website: www.unesco.org/en/disaster-risk-reduction

2024/SC/DRR/07