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Item 10 of the provisional agenda*
Geospatial information for climate, environment and resilience

Geospatial information for climate, environment and resilience

Note by the Secretariat

Summary

The present paper contains the report of the Working Group on Geospatial Information for Disaster Risk Management for consideration by the Committee of Experts on Global Geospatial Information Management.

At its fourteenth session, held in New York from 7 to 9 August 2024, the Committee of Experts adopted decision 14/108, in which the Committee welcomed the reports of the task team on geospatial information for climate resilience and the working group on geospatial information and services for disasters, and the efforts made by the task team to further position the Committee to address climate resilience with integrated geospatial information, and by the working group to revitalize its working modalities with renewed membership, revised terms of reference and an updated workplan for the period 2024–2025.

The Committee also recalled earlier consideration on the importance of a "joined-up" approach to addressing climate resilience and disaster risk management, requested the task team and the working group to continue with their current working modalities, planned work and activities for the forthcoming intersessional period and to continue to report under the current agenda item, and decided to rename the working group as the working group on geospatial information for disaster risk management, with a renewed focus on access and utilization of integrated geospatial information that supports all aspects of disaster risk management.

Also at its fourteenth session, the Committee requested the Bureau, with the support of the Secretariat, to holistically consider climate resilience and disaster risk management as part of the development of the strategic framework of the Committee of Experts for the period 2025–2030, considering all current working modalities, planned activities and deliverables of the task team and the working group.

In its report, the working group on geospatial information for disaster risk management outlines the progress it made and intersessional activities it carried out, including collaboration on and contributions to the development of a common statistical framework on disaster-related statistics and the joint hosting of a webinar on disaster risk reduction highlighting the importance of collaboration and partnerships supporting the use of geospatial information during all disaster phases by Member States, citing Hurricane Beryl as a relevant case study. Also noted in the report are working group's efforts to cultivate partnerships that advance robust

* E/C.20/2025/1.

discussion and facilitate greater understanding and the identification of synergies between disaster risk management and climate resilience. In the report, the working group encourages collaboration and partnership among national disaster agencies and national geospatial information agencies with a view to increasing awareness and implementation of the Strategic Framework on Geospatial Information and Services for Disasters; addresses the development and distribution of structured forms to collect information on national challenges relating to the use of geospatial information for disasters risk management; and presents its revised workplan for the period 2024 - 2026.

In its report, the task team on geospatial information for climate resilience provides details on progress made to deliver its stated outcomes during the intersessional period. This includes the focus to develop and launch a paper entitled “Applying geospatial information to climate challenges”, as well as support for the convening of the seventh High-level Forum on United Nations Global Geospatial Information Management, held in Mexico City in October 2024. Noted in the paper, which is provided as a background document, is the importance of having political leaders involved in advocating for and investing in geospatial infrastructure to increase resilience. The vital role of the Committee of Experts and its frameworks, such as the United Nations Integrated Geospatial Information Framework, in supporting Member States in developing the capacity to withstand increasing risk and to recover from disasters, in a manner that is transformative and that can become the basis for long-term resilience, is highlighted in the paper through national case studies. The task team also notes in its report that, as the tasks set for it by the Committee of Experts have been delivered, it will conclude its activities at the fifteenth session of the Committee.

Both reports contain information on the meetings and discussions held between the two groups in the later part of the intersessional period with a view to forging coordination and coherence on strategic orientations and synergies with regard to activities related to geospatial information for climate, environment and resilience. The reports also include points for discussion for the Committee of Experts related to providing inputs and guidance on the substantive content associated with the agenda item; encouraging Member States and relevant interested experts to contribute to forthcoming consolidated activities under the agenda item; and expressing its views on the preparation of a single holistic report, including a workplan, in which climate, environment and resilience are considered, to be presented to the Committee at its sixteenth session.

I. Introduction

Reiterating the importance of and value of Disaster Risk Management

1. Disaster Risk Management (DRM) is crucial for several reasons, with significant benefits impacting lives, livelihoods, and long-term development. The following points reiterate the value and importance of DRM:

i. Lives and livelihoods are saved: DRM focuses on protecting those most vulnerable to disasters, ultimately reducing fatalities and minimizing the negative impacts on individuals and communities.

ii. The cycle of disaster and dependency is broken: By investing in prevention and preparedness, DRM helps communities avoid the cycle of disaster, response, and dependence on external aid, freeing up resources for development.

iii. Economic benefits are accruable: DRM has proven to be a cost-effective investment. Studies show that every dollar invested in disaster mitigation can save significantly in recovery costs. For example, fortifying infrastructure can save substantial amounts in reconstruction, and preparedness efforts can preserve jobs and economic activity.

iv. Resilience is built: DRM aims to strengthen communities and their capacity to anticipate, survive, and recover from disasters. This includes measures like improving infrastructure, implementing early warning systems, and training communities, countries can face future challenges with greater confidence.

v. National development is facilitated: Unplanned development increases disaster risk and hinders progress towards sustainable development goals. Integrating disaster resilience into development planning is essential to safeguard investments and unlock development potential.

2. The Working Group on Geospatial Information for Disaster Risk Management (GI4DRM) is guided by the vision of quality geospatial information and services being made available and accessible in a timely and coordinated way to support decision-making and operations within and across all sectors and phases of disaster risk management, as outlined in the Working Group's terms of reference. Geospatial Information Management (GIM) is therefore immensely important for DRM across all phases: mitigation, preparedness, response, and recovery. The Working Group encourages improved access to solutions through geospatial services in addressing cascading and systemic risk and encourages Member States to implement the Strategic Framework on Geospatial Information and Services for Disasters (2016 – 2030) (Strategic Framework), which supports the implementation of the Sendai Framework on Disaster Risk Reduction (2015-2030). The Strategic Framework, (shown in Figure 1 below) is fundamental to the achievement of the 2030 Agenda for Sustainable Development.

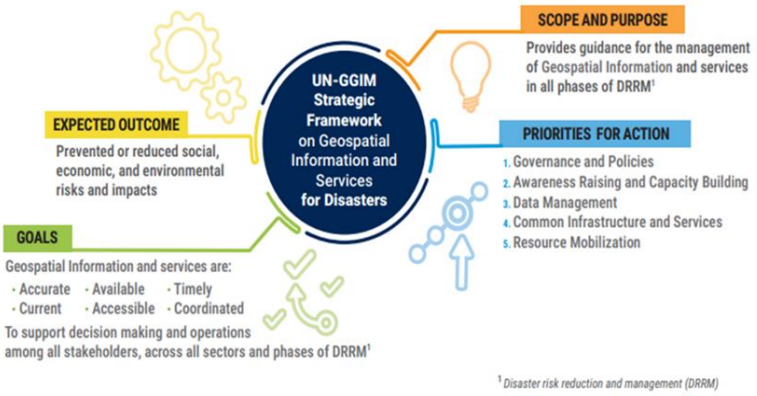

Figure 1 - The UN-GGIM Strategic Framework on Geospatial Information and Services for Disasters

3. GIM tools, data and services enable informed decision-making, improved communication and coordination, and the development of effective strategies to mitigate the impact of disasters and build more resilient communities. GIM plays a crucial role across all phases of DRM[1].

i. Preparedness and Risk Assessment:

- Identifying and mapping hazards: GIS software pinpoints regions vulnerable to specific hazards like floods, wildfires, or hurricanes by integrating various data layers, including hazard zones, population density, infrastructure, and historical event patterns.
- Vulnerability analysis: By analyzing demographic, economic, and climate data with geospatial tools, cities can assess vulnerable populations, identify critical infrastructure at risk, and understand the potential impact of disasters.
- Developing strategies and plans: Geospatial analysis helps simulate scenarios, model risks, and inform the development of risk reduction strategies and evacuation plans.
- Early Warning Systems: GIS integrates data from sensors and monitoring systems (such as satellite imagery, weather data) to provide real-time information on potential hazards, enabling timely alerts for communities at risk.
- Training and Capacity Building: GIM integrates geospatial technology into training programs for emergency responders and local authorities, enabling them to effectively utilize geospatial tools for disaster management.

ii. Response and Real-Time Situational Awareness:

- Real-time disaster tracking: GIS tools monitor the progression of disasters, such as wildfire spread or hurricane movement, to provide real-time information for informed decision-making.
- Enhanced Situational Awareness: GIS provides a common operational picture for multiple agencies and stakeholders by

[1] United Nations Office for Disaster Risk Reduction (2025), Special report on the use of Technology for Disaster Risk Reduction - https://www.undrr.org/media/107230/download?startDownload=20250616

integrating various data sources, allowing for better coordination and communication during a disaster.

- Optimized Resource Allocation: GIS helps pinpoint the nearest response teams, medical facilities, and evacuation routes, ensuring faster and more effective allocation of resources.
- Locating Survivors: Geospatial technology can aid search and rescue operations by identifying areas where survivors may be trapped.

iii. Post-Disaster Recovery and Mitigation:

- Damage Assessment: Comparing pre- and post-disaster geospatial data allows for rapid assessment of damage to buildings, infrastructure, and the environment.
- Guiding Recovery Efforts: GIS helps prioritize recovery efforts, allocate resources efficiently, and monitor the progress of reconstruction and rehabilitation activities.
- Building Resilience: Geospatial analysis informs policies and strategies to build more resilient communities, including enhancing infrastructure and addressing long-term vulnerabilities.

4. At its fourteenth session, held in New York from 7 to 9 August 2024, the Committee of Experts adopted decision 14/108, in which the Committee welcomed the report of the then named working group on geospatial information and services for disasters, and the efforts made by the working group to revitalize its working modalities with renewed membership, new name, revised terms of reference and an updated workplan for the period 2024–2025.

5. In this present report, the Working Group on Geospatial Information for Disaster Risk Management outlines the progress it has made and intersessional activities it carried out, including collaboration on and contributions to the development of a common statistical framework on disaster-related statistics and the joint hosting of a webinar on disaster risk reduction highlighting the importance of collaboration and partnerships supporting the use of geospatial information during all disaster phases by Member States, citing Hurricane Beryl as a relevant case study. Also noted in the report are the working group's efforts to cultivate partnerships that advance robust discussion and facilitate greater understanding and the identification of synergies between disaster risk management and climate resilience. In the report, the working group encourages collaboration and partnership among national disaster agencies and national geospatial information agencies/national mapping agencies with a view to increasing awareness and implementation of the Strategic Framework on Geospatial Information and Services for Disasters; addresses the distribution of structured forms to collect information on national challenges relating to the use of geospatial information for disaster risk management; and presents its revised workplan for the period 2025–2026.

6. The Committee of Experts is invited to take note of the present report which includes the Working Group's progress and intersessional activities. The Committee of Experts is also invited to express its views and provide guidance on the proposals presented. The points for discussion and decision are in paragraph 65.

II. Strengthening the functioning of the working group

UN General Assembly Resolution 79/205 on Disaster Risk Reduction

7. The UN General Assembly Resolution 79/205 on Disaster Risk Reduction, adopted in December 2024, underscores the importance of the Sendai Framework

for Disaster Risk Reduction 2015-2030, welcomes the progress under the *UN-GGIM Strategic Framework on Geospatial Information and Services for Disasters* and calls for their effective implementation. Some key points emphasized in the resolution include encouraging Member States to strengthen national and local disaster risk governance, adopting a multi-hazard and multi-sectoral approach that involves various stakeholders and highlighting the interconnectedness of disaster risk and climate change, emphasizing the need to address both together.

8. Importantly, clause 35 of the resolution recognizes and supports the Working Group's implementation of its strategic framework.

> *35. Also welcomes progress under the Strategic Framework on Geospatial Information and Services for Disasters for the period 2020–2023, which is a guide for Member States to ensure the availability and accessibility of quality geospatial information and services across all phases of disaster risk reduction and management, and encourages enhanced support to developing countries for the implementation of the Framework as a means to provide quality geospatial information and services to support decision-making and disaster risk management efforts, the Sendai Framework for Disaster Risk Reduction 2015–2030 and achieving the 2030 Agenda for Sustainable Development;*

9. Other clauses in the resolution are germane to informing the working groups work, which recognizes the importance of collecting, recording and sharing disaster losses and relevant disaggregated data and statistics to strengthen disaster risk modelling, assessment, mapping, monitoring and multi-hazard early warning systems, to enhance and institutionalize its use in decision-making processes and investments across sectors and all relevant ministries and institutions.

Bureau, Membership and Task Teams

10. The Leadership of the Working Group strengthened its operational modalities through broadening the composition of its bureau, with the inclusion of Task Group Chairs and Co-Chairs. The Working Group congratulated Japan on its leadership as Co-Chair, given the retirement of the Co-Chair from Japan. China agreed to serve as the interim Co-Chair. During the intersessional period, the Working Group was Co-Chaired by Jamaica and China.

11. The Working Group's membership list was reviewed and updated post the fourteenth session of the Committee of Experts. Membership remained consistent from the previous reporting year, with representation from 26 Member States, six observer organizations (from academia, the private sector and non-government organizations) and one UN entity. Geographical representation is largely from the Asia Pacific region, with 65% of the Group's member countries located below the tropic of cancer and 46% are island states and archipelagos. This geographical distribution of the Working Group's membership is highly representative of countries that are most vulnerable and impacted by disaster events. Therefore, the need for continued implementation of the Strategic Framework and Sendai Framework, inclusive of greater collaboration and representation from national disaster management organizations, is recognized as being key.

12. An initial four task teams were created based on the priority areas of work identified in 2024. For the reporting period, all task teams had active representation. The Task Groups, as listed below, were entrusted to update and implement their workplans.

Task Group A	Geospatial data in support of DRR
Task Group B	Capacity development and awareness raising

Task Group C	Implementation of the Strategic Framework and alignment with the Sendai Framework
Task Group D	Collaborate with existing international projects

Working Group Meetings

13. Over the intersessional period the Bureau of the Working Group planned and convened four working group meetings in September 2024 and February, March and May 2025 which largely addressed the group's programme of work for 2024-2026 and organizational issues. A minimum of twelve Bureau meetings were held which addressed preparations for the general Working Group meetings and discussed and decided on strategic and operational matters.

14. At the September 2024 meeting the decisions and actions emanating from the fourteenth session of the Committee of Experts were reviewed and a special presentation was done on the GAR Special 2024 report, entitled 'Forensic Insights for Future Resilience: Learning from Past Disasters'. In addition, the members from the United Nations Economic Commission for Africa (UNECA) gave an update on the preparations for the 'Fourth Global Expert Forum for Producers and Users of Disaster Related Statistics. The Working Group as a standing member of the Inter-Agency and Expert Group on Disaster-related Statistics (IAEG-DRS), decided to participate in the Forum. Also addressed at the meeting was the finalization of the Working Group's workplan. Work items generated from the meeting included developing and distributing structured forms to collect national disaster risk management challenges, to organize thematic webinars and to participate in the UN-GGIM Knowledge and Innovation Center's Knowledge and Innovation Week in October 2024.

15. The Working Group at its February 2025 meeting discussed possibilities of an in-person meeting and workshop including potential hosts and a draft agenda outline. Preparations for the Committee of Experts' fifteenth session were discussed, updates were provided on fact finding discussions with United Nations Disaster Risk Reduction (UNDRR), and arrangements shared on the Working Group's participation in the UNDRR Global Platform and the Fourth Global Expert Forum for Producers and Users of Disaster Related Statistics'. Additional information on this forum is provided in sections 21 to 25 of this report. Also discussed were collaborative preparations for the UN-GGIM: Americas Caribbean Geospatial Development Initiative (CARIGEO) webinar on 'Preparation, Response and Recovery: Lessons Learnt from Hurricane Beryl. In addition, the structured form to identify challenges in geospatial information for disaster risk management was reviewed. During the meeting, the Co-Chair from China gave an update on the disaster management theme of the Knowledge and Innovation Week. Details of this meeting are provided in sections 26 to 27 of the report.

16. At its March 2025 meeting, the Working Group reviewed, refined and completed its 2025-2026 workplan, which is submitted as a background document to this report. It featured the activities of the four task groups on geospatial data in support of DRR, capacity development and awareness raising, the implementation of the UN-GGIM disaster strategic framework and its alignment with the Sendai Framework and collaboration with existing international projects. The agenda for the joint CARIGEO webinar was discussed and circulated to members for their review and comments. Other logistical arrangements were made. The second proposed webinar entitled 'Strategizing on synergizing between climate resilience and disaster risk management', was also discussed, and proposals were made for it to be convened with a tentative date for May 2025, in collaboration with UNDRR New York and Bonn, and the Task Team on GI for Climate Resilience. Also discussed at this meeting was the

preparation of the structured form to collect national challenges. The meeting also discussed the timeline and hosting options for a future in-person meeting.

17. At its May 2025 meeting, the Co-Chairs updated the Working Group on matters arising from its March meeting, which included preparations for the webinars, the planning for the proposed face-to-face meeting, contribution to the Common Statistical Framework on Disaster Related Statistics, and other housekeeping matters such as preparations for the fifteenth session of the Committee of Experts. An agreement was reached on the Working Group's new logo, given the Group's new name. The new logo is shown below.

Figure 2 The Working Group's New Logo

18. Importantly, the Working Group was updated on the meeting held with the Task Team on Climate Resilience on 2 April 2025. The objective of the meeting was to facilitate an exploratory discussion on forging a pathway forward to address disaster risk management and climate resilience agendas within the UN Committee of Experts and to plan coordination for the upcoming fifteenth session in August 2025. Both groups shared their ongoing work and discussed future activities. The Task Team indicated that they would close their activities at the fifteenth session and that they were open to discussing how to integrate climate resilience in the Committee of Experts' work programme moving forward. There was recognition of the interconnection between disaster risk management and climate resilience and that both groups should consider presenting a common language for the recommendations on the future of the subject areas in their reports to the fifteenth session of the Committee of Experts.

Consultation with UNDP and UNDRR

19. Subsequent to the fourteenth Session, the Working Group facilitated multiple consultation discussions with representatives of the United Nations' Disaster Risk Reduction and Recovery for Building Resilience Team (DRT) of the United Nations Development Programme. Discussions were also held with representatives of the UNDRR New York and Bonn Offices. The objectives were to: a) understand the dynamics behind global trends in disaster risk reduction and management and climate resilience, b) gain insights on how the international community was addressing the subjects of climate resilience and disaster risk management, which requires leveraging capacities from several disciplines and c) learn of the work being executed by these UN bodies and the synergies that exist or can be facilitated between both thematic areas. It was noted that these disciplines often conduct their work within separate communities of practice, use different methodologies, access different funding mechanisms, and are coordinated by different ministries and communities of practice. A climate and disaster risk-informed **UN Sustainable Development Cooperation Framework** is being encouraged by UNDRR, which promotes integrated risk management practices, supports a whole-of-society approach, and helps prevent crises. An important requirement will be the need to proactively bring together expertise,

stakeholders, and evidence across disciplines and sectors to identify the most effective interventions within a country[2].

Capacity Development and Awareness Raising

20. Risks and impacts of disasters will be properly managed if Member States and other stakeholders are fully aware of their respective geospatial data and information holdings. This requires all entities to bring the necessary changes towards making available and accessible quality geospatial information and services across all phases of disaster risk management. This matter is addressed in Priority [2]: awareness-raising and capacity-building of the UN-GGIM Strategic Framework on Disasters. This topic is therefore also a main priority of the Working Group and related activities are executed by Task Group B. The following sub-sections detail capacity development and awareness activities conducted during the reporting period.

Participation in the Fourth Global Expert Forum for Producers and Users of Disaster-related Statistics

21. The Fourth Global Expert Forum was held from 28 October to 1 November 2024 in Addis Ababa, Ethiopia. The Forum aimed to advance the production and use of disaster-related statistics for risk-informed development, in fulfilment of the objectives of the Inter-Agency and Expert Group on Disaster-related Statistics (IAEG-DRS) of the United Nations Statistical Commission. The Forum encouraged collaboration and knowledge sharing amongst users and producers of disaster-related statistics.

22. The Expert Forum was organized in a hybrid format, with participation from over 299 experts from National Statistical Offices, National Disaster Management Agencies, National Geospatial Authorities, UN Agencies, academia, non-governmental organizations and representatives of intergovernmental organizations, and international bodies.

23. During the Forum, in session four on “Strengthening Capacity and Resources” the GI4DRM, represented by its UNECA member, delivered a presentation on the “Strategic Framework Supporting Disaster-related Statistics”. The presentation focused on one of the global geospatial frameworks, the ‘Strategic Framework on Geospatial Information and Services for Disasters’. The presentation informed that the Strategic Framework aims to guide Member States and other stakeholders in making available and accessible all quality geospatial information and services before, during and after disaster events. The Strategic Framework supports the importance of data management mechanisms to support DRS being managed effectively and being accessible to producers and users of the data. It highlighted the importance of accurate and reliable data being provided to decision-makers and other data users in a timely manner.

24. It also informed that the UN-GGIM working group on disaster had established a global data repository: UN-GGIM DRR Global Inventory Hub. This is a central platform that provides information on national, regional, and international DRR organizations and lists their respective DRR platforms that provide geospatial information and services. The WG continues to encourage contributions and welcomes information from disaster-related statistics producers and organizations to complete the online forms that facilitate the updating of the hub. The Inventory hub and global surveys are available on UN-GGIM WG Disasters webpage: https://ggim.un.org/UNGGIM-wg5/.

25. Relevant resolutions of the forum encouraged members of ECA to collaborate with and participate in the work of other relevant organizations,

[2] Integrating Disaster Risk Reduction and Climate Change Adaptation in the UN Sustainable Development Cooperation Framework, United Nations Office for Disaster Risk Reduction, July 2020. https://www.undrr.org/media/47534/download?startDownload=20250710

including the UN-GGIM WG GI4DRM, the Expert Group on the Integration of Statistical and Geospatial Information and the working group on geospatial information of the Inter-Agency and Expert Group on Disaster-related Statistics. For additional information, including presentations please access the Forum's website: https://www.uneca.org/eca-events/fourth-global-expert-forum-producers-and-users-disaster-related-statistics

Contribution to the United Nations Global Geospatial Knowledge and Innovation Centre (UNGGKIC) Geospatial Week

26. To accelerate the implementation of the United Nations Sustainable Development Goals, the first United Nations Geospatial Week (UN GeoNow) was held in Deqing, Zhejiang, China from 21 to 24 October 2024. The event, themed *Geospatial Intelligence for a Better World,* focused on innovative applications of geospatial information. It centred on leveraging the United Nations Integrated Geospatial Information Framework (UN-IGIF) and featured six specialized forums. These included digital twin and smart cities, smart agriculture and food security, natural resource surveys and territorial governance, clean energy and green development, climate change response, disaster prevention and mitigation, in addition to geospatial modelling and geospatial intelligence. Approximately 1000 participants from over 50 countries including representatives from relevant UN agencies and ministries from China attended the event.

27. The Special Forum on Climate Change Response and Disaster Prevention and Mitigation, was organized by the National Institute of Natural Hazards, Ministry of Emergency Management of China and supported by UN-GGIM WG GI4DRM. The forum featured presentations by ten experts and scholars from both domestic and international institutions. The event focused on the current status, policies, and technological applications in climate change response, disaster prevention and mitigation. Exchanged were experiences on key issues such as cross-regional disaster management mechanisms, monitoring and early warning systems, emergency response strategies, resource allocation, and the development of emergency spatio-temporal think tanks. During the roundtable discussion, experts discussed the opportunities and challenges of leveraging spatio-temporal information technology for climate change response, disaster prevention and mitigation. It also explored the ideas and measures for building an emergency spatio-temporal knowledge ecosystem and a United Nations emergency spatio-temporal think tank. The forum concluded with calls to strengthen geospatial information, data management and related infrastructure and enhance cross-border cooperation, both of which are essential for building resilience in the midst of intensified climate-related risks globally.[3]

Collaboration to convene Webinar with UN-GGIM Americas – Caribbean Geospatial Development Initiative

28. The Working Group sought opportunities to foster greater collaboration and partnership with regional committees and DRR related bodies during the intersessional period. One such partnership and collaboration was with the UN-GGIM: Americas' CARIGEO Initiative. The initiative is led by a Steering Committee comprised of Caribbean Member States, with technical membership support from the United Nations Economic Commission for Latin America and the Caribbean (UNECLAC), the UN-GGIM Private Sector and Academic Networks, the HLG-IGIF, the National Institute of Statistics and Geography of Mexico and the UN-GGIM Secretariat.

29. The UN-GGIM: Americas' CARIGEO Steering Committee seeks to geo-empower Caribbean Member States by promoting the strengthened implementation and utilization of geospatial technologies and information in advancing the achievement of Sustainable Development Goals, while also

[3] https://ggim.un.org/meetings/2024/Deqing_China/documents/GeoNow2024_Summary_Notes_03Dec.pdf

addressing concerns that affect Caribbean Member States by bolstering their ability to make better informed decisions in achieving national priorities. The fostering of greater awareness, the building of capacity and the forging of partnerships and collaborations within the region, in addition to harnessing the technical support of stakeholders outside the Caribbean sub-region are key focus areas of CARIGEO.

30. The Caribbean subregion and wider Americas region are significantly impacted by tropical systems during the annual North Atlantic Hurricane Season. Hurricane Beryl devastated the Americas region in July 2024 as a Category 5 Hurricane. Areas such as Carriacou and Petit Martinique (Grenada), Union Island and Canouan (St. Vincent and the Grenadines), Jamaica, in addition to sections of the Yucatan Peninsula and the Gulf Coast of the United States of America experienced extensive damage.

31. Given the level of devastation, the impacted countries significantly relied on existing partnerships and collaborations to assist with assessment, monitoring and response initiatives. The impact of Hurricane Beryl also led to the forging of new partnerships and collaborations that enabled the harnessing of geospatial human resources, technologies and information to support the monitoring, response, restoration and provision of relief supplies.

32. Given this background, CARIGEO sought to host a webinar focused on reinforcing known principles of Disaster Risk Reduction and Management (DRRM) and sharing lessons learnt by Member States, regional and international agencies who provided support during the preparation, response and recovery phases of Hurricane Beryl. On May 20, 2025, a webinar entitled “Preparation, Response and Recovery: Lessons Learnt from Hurricane Beryl” was hosted in collaboration with UN-GGIM WG GI4DRM, UNECLAC and the UN-GGIM: Americas Working Group on Geospatial Information for Disasters. The Working Group partnered with CARIGEO towards highlighting the experiences of Member States and the benefits that can be had when partnerships are forged between National Disaster Agencies and National Geospatial Agencies / National Mapping Agencies, as this enables available and accessible, accurate, timely and reliable geospatial information and services to aid national disaster management mechanisms. The Working Group recognizes that partnerships such as these will ensure greater success in the implementation of the Strategic Framework on Geospatial Information and Services for Disasters within Member States.

33. The webinar benefitted from rich speeches and presentations delivered by the UN-GGIM: Americas Board of Directors, UN-GGIM: Americas Working Group on GI for Disasters, the Caribbean Disaster Emergency Management Agency (CDEMA): Unmanned Aerial Systems for Comprehensive Disaster Management Programme, Office of Disaster Preparedness and Emergency Management of Jamaica (ODPEM), Jamaica’s National Emergency Response GIS Team (NERGIST), National Emergency Management Organization of St. Vincent and the Grenadines (NEMO), the United Nations Coordinating Office of Jamaica, International Charter on Space and Major Disasters and Map Action.

34. Stakeholders from the Caribbean subregion and wider Americas region, thus engaged in rich discussions on disaster risk, reduction and management, exchanged knowledge and experiences, shared best practices and innovations (including the use of geospatial technologies, geospatial information and earth observation data in support of preparations for the 2025 North Atlantic Hurricane Season and beyond. A wide cross section of 120 participants from 33 countries from across the five UN-GGIM regions contributed to and benefitted from the rich exchange. This webinar satisfied the Working Group’s implementation of priority 2 (Awareness Raising and Capacity Development) and priority 5 (Resource Mobilization) of the Strategic Framework within Member States. Additional information on the webinar is available on CARIGEO & UN-GGIM

WG GI4DRM Webinar website. A background paper entitled *Geospatial Support through partnership and collaboration for Hurricane Beryl 2024: Jamaica Case Study version 2.0* is provided for additional information.

Participation in the UN 2.0 Week Webinar on 'Data for Resilience: a Disaster Tracking System to inform action on losses and damages'

35. This webinar was organized by the UNDRR Bonn office along with key partners, the World Meteorological Organization (WMO) and the United Nations Development Programme (UNDP) in the context of the UN 2.0 week, held on 11 June 2025. The virtual webinar featured a demonstration on the Disaster Tracking System, and how the toolkit, open-source software, data standards and methodological guidance can be used to address DRM challenges and increase the quality, access, relevance and usability of data. This was followed by a panel discussion comprising a small selection of speakers from governments and UN partner organizations, who reflected on the challenges and good practices on collecting, analyzing and using losses and damages data. The webinar was designed to help Member States to accelerate their journeys towards achieving the critical SDGs.

36. The Co-Chair from Jamaica spoke on challenges, needs and innovation for official disaster and climate change loss and damage data collection and use. Her presentation answered the questions on: What challenges do Small Island Developing States face in tracking the impact of climate change and disasters? and What innovations (technologies, institutional arrangements, capacity development) have been used to address some of the challenges being experienced? The responses highlighted the importance of damage and loss especially in terms of taking stock of the cost of the impact of disaster events, the need to adequately plan for such events, and build resilience to reduce physical and economic vulnerability to disasters. Qualifying costs associated with each event have proven to be valuable as it has allowed countries to review and assess their impact on specific sectors and the economy.

37. Also highlighted were challenges of data inconsistency, data collection and quantifying impact data for specific types of disasters, incomplete datasets and baseline data for critical sectors, the over-estimation of impacts and the willingness of sharing data among entities coupled with limited resources. The presentation also featured areas where innovation has taken place. These included:

- Improving the post disaster assessments with technology to improve data quality
- Use of remote sensed data, satellite imagery and unmanned aerial vehicles
- Development of databases and platforms
- New research methods and data products
- The use of AI to support data collection – with data validation
- Impact based forecasting

38. The Working Group's contribution to this webinar is directly aligned with the implementation of the UN-GGIM's Strategic Framework on GI and Services for Disasters, in particular, priority 3- Data Management and the activities of Task Group A - Geospatial data in support of DRR.

Contribution to the Common Statistical Framework for Disaster Related Statistics

39. The Working Group was invited by the IAEG-DRS and the Common Statistical Framework for Disaster Related Statistics of the United Nations Statistical Commission to contribute a chapter on the Strategic Framework on

Geospatial Information and Services for Disasters to the Common Statistical Framework being developed.

40. A draft of the chapter on the Strategic Framework on Geospatial Information and Services (SF-GISD) has been prepared. It highlights the integration of geospatial information into Disaster related statistics against the five priority areas of the SF-GISD, namely Governance and Policies, Awareness Raising and Capacity building, Data Management, Common infrastructure and Services and Resource Mobilization, with the critical areas of the Common Statistical Framework. The chapter underscores the role of the SF-GISD by promoting interoperability between geospatial platforms and statistical systems that enhance the ability, quality, interoperability, accuracy and timeliness of geospatial data to support the areas of disaster risk management and disaster related statistics. It also highlights how geospatial data supports the classification of records, the analysis of disaster events and their resultant impacts. The use of hazard, exposure and vulnerability maps, in addition to damage assessments, and damage and loss data, all contribute to accurate risk assessments and evidence-based data. These are necessary for effective decision making by emergency responders, disaster risk management practitioners and policy makers to build resilience.

41. Also included in the chapter is the fact that the SF-GISD also contributes to the alignment and standardization of geospatial and statistical data, thus promoting interoperability between geospatial platforms and statistical systems. It explores mechanisms for integrating geospatial services into national statistical systems and emergency operations through interoperable metadata, shared vocabularies, and standardized data protocols. This aligns with the Common Statistical Framework's emphasis on comparability and data coherence across time and jurisdictions. By illustrating case studies and practical applications, the chapter provides insights into how countries can operate both frameworks to enhance coordination among geospatial, statistical, and disaster management institutions - ultimately supporting the Sendai Framework and the SDGs through more robust data ecosystems.

III. The Disaster Risk Management and the Climate Resilience landscape

42. This section of the report briefly looks at the thematic areas of disaster risk management and climate resilience, given the need for the Committee of Experts to identify a pathway forward to comprehensively address these thematic areas given their interconnectedness and opportunities for collaboration and synergies. The Working Group recognizes that different types of expertise are needed to manage the interactions between climate change, natural hazards, biological hazards and technological hazards, and their impacts on people, communities, and ecosystems. This therefore requires greater understanding of the subject areas, their challenges and geospatial data, tools and analysis requirements in support of reducing and managing risk and losses. The section features global interventions such as the 2025 Platform for Disaster Risk Reduction, the Global Assessment Report (GAR) 2025 and the OGC Climate and Disaster Resilience Pilot, which provides information that should guide the next steps for the Committee of Experts in the application of its frameworks, and the creation and management of geospatial data and tools. The section concludes with a look at the challenges and benefits of integrating the two thematic areas.

The 2025 Platform for Disaster Risk Reduction

43. The 2025 Global Platform for Disaster Risk Reduction (GP2025) served as a critical forum for assessing progress and accelerating the implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030. Held in Geneva,

Switzerland, from June 2nd to 6th, 2025, under the theme "Every Day Counts, Act for Resilience Today," the platform gathered governments, the UN system, and other stakeholders and took stock of accomplishments, exchanged knowledge, and discussed new developments in reducing disaster risk.

44. The outcome document of the 2025 Global Platform for Disaster Risk Reduction (GP2025), titled the "Geneva Call for Disaster Risk Reduction," (Co-Chairs' summary of the Global Platform) is a guiding document and a call to action for governments and stakeholders to accelerate the implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030 by the 2030 target.

45. Key takeaways and calls to action summarized in the Geneva Call for Disaster Risk Reduction include:

(a) Prioritizing inclusive disaster risk reduction: The document highlights the need to address the impact of disasters on vulnerable groups, such as women, persons with disabilities, and older persons, by empowering them in planning and implementation.

(b) Strengthening risk governance and cooperation: The Geneva Call encourages integrating plans across various areas like climate change adaptation and social protection and enhancing international and regional cooperation to address transboundary and emerging risks.

(c) Investing in prevention and risk-informed development: The document emphasizes that increased funding for disaster risk reduction is crucial for achieving benefits across development, humanitarian, and climate agendas, and encourages mobilizing resources from various sources.

(d) Democratizing risk understanding and data: The Geneva Call stresses the importance of accessible and usable risk information for all stakeholders, utilizing both local knowledge and technology.

(e) Scaling up early warning systems and anticipatory action: The outcome document highlights the need to expand Multi-Hazard Early Warning Systems (MHEWS) and calls for international support to achieve "Early Warnings for All".

(f) Promoting risk communication: The Geneva Call emphasizes the role of clear and actionable risk information to empower individuals and communities.

(g) Preparing to "Build Back Better": The document encourages better planning for post-disaster recovery, focusing on inclusive efforts.

46. For the geospatial community, the call was made for the collection, analysis and application of risk information. Countries need to collect and share historical data, track disaster impacts, broken down by sex, age, disability and income, and conduct predictive analyses. The Geneva Call for Disaster Risk Reduction serves as a renewed commitment to accelerate the implementation of the Sendai Framework, emphasizing inclusive strategies, investment in prevention, enhanced risk understanding, and stronger international cooperation to build resilience against escalating disaster risks and climate change impacts.

The Global Assessment Report (GAR) 2025

47. The Global Assessment Report on Disaster Risk Reduction 2025 (GAR 2025), themed "Resilience Pays: Financing and Investing for Our Future," is a crucial report published by the United Nations Office for Disaster Risk Reduction (UNDRR) that highlights the escalating global costs of disasters and advocates for a significant shift towards proactive investment in disaster risk reduction (DRR) to build resilience and secure a sustainable future. The GAR 2025 emphasizes the critical role of data collection and management in effectively managing disaster risk and building resilience.

48. The report stresses that high-quality, accessible, and timely risk information is fundamental for directing investment effectively to prevent, reduce, and manage risk. This underscores the need to make risk data widely available and usable by various stakeholders. The following is a summary and extraction of important recommendations related to data.

- Standardized and Accessible Risk Information: The report advocates for risk information to be standardized, accessible, and open source.
- Connect Hazard Data with Exposure and Vulnerability: Governments should improve the linkage between hazard data and information on exposure and vulnerability.
- Provide Robust Risk Information to Stakeholders: Both public and private sectors need reliable risk information for decision-making.
- Tailor Metrics to Local Realities: Risk metrics should be customized to local contexts and stakeholders' needs. More details can be found on UNDRR website
- Complement Risk Metrics with Resilience Indicators: The benefits of investing in resilience need clearer demonstration and integration into decision processes.
- Harness Technology for Analysis and Learning: Leveraging local knowledge and technology like machine learning and AI can accelerate risk analysis. More details can be found on UNDRR website
- Invest in Improving Risk Data and Analytics: Countries should invest in enhancing risk data, analytics, modelling, and foresight.
- Improve Access to Quality Risk Data: Governments should set guidelines, share knowledge, and improve access to quality risk data.
- Require Insurance Companies to Publish Data: Requiring insurance companies to publish coverage and non-renewal data can signal costs related to risky infrastructure and areas. More details can be found on UNDRR website.

49. In summary, GAR 2025 emphasizes a collaborative and comprehensive approach to data for disaster risk reduction, highlighting accessibility, standardization, and the use of technology for improved analysis and decision-making.

The OGC Climate and Disaster Resilience Pilot

50. The Open Geospatial Consortium (OGC) Climate and Disaster Resilience Pilot (CDRP) is a multi-phase project focused on enhancing our collective readiness for climate change and related disasters by improving the processes and systems used to transform data into usable information for decision-makers.

51. The CDRP brings together various stakeholders, including government organizations, the private sector, and research institutions, to address challenges in areas like data integration, analysis, and communication within the context of climate resilience and disaster management. The OGC Climate and Disaster Resilience Pilot yielded several significant outcomes and findings, including:

- Improved Workflows and Models: Prototyped workflows and components were developed for tracking extreme weather events, integrating real-time data, and incorporating predictive analytics.
- Enhanced Landslide Prediction and Mapping: The pilot improved the accuracy of landslide prediction and mapping through the use of scientific algorithms and deep-learning models.
- Refined Flood Risk Assessment: Workflows were developed for flood risk assessment, leading to improved resolution and accuracy in flood simulations.
- Modelling Extreme Heat Impacts: The pilot successfully modelled extreme heat events and their effects on human health in urban areas.

- Real-time Urban Digital Twin Workflows: Workflows were created to integrate weather sensor data for urban digital twins, supporting real-time risk assessments and scenario analysis.
- Advanced Metadata Retrieval Methods: Methods were explored for transitioning to Geospatial Knowledge Infrastructures (GKIs) using AI, enhancing data discovery and integration.
- Stakeholder Engagement and Visualization Tools: The pilot focused on engaging stakeholders and supporting the adoption of developed tools through visualization and interactive platforms.
- Emphasis on Analysis-Ready Data (ARD) and Decision-Ready Indicators (DRI): The importance of having ARD and DRI readily available for better analysis and communication of risks was demonstrated.
- Integration of AI: The pilot explored integrating AI, including generative AI, into geospatial tools for tasks like wildfire management.
- Strengthened Foundation for FAIR Data Services: The pilot aimed to enhance climate and disaster services by moving technical systems towards FAIR (Findable, Accessible, Interoperable, and Reusable) principles, promoting collaboration and equity in data access.

52. Overall, the OGC Climate and Disaster Resilience Pilot demonstrated that open standards and innovative geospatial technologies, including AI, can significantly improve the workflows and tools used to address climate change impacts and disaster risks, ultimately enhancing climate resilience and informing effective decision-making.

Forging coherence and coordination between Climate Resilience and Disaster Risk Management

53. The landscape of disaster risk management (DRM) and climate resilience is characterized by both progress and significant challenges. While efforts to reduce disaster risks have intensified, particularly under the umbrella of the Sendai Framework for Disaster Risk Reduction 2015-2030, the scale and scope of challenges are growing due to factors like climate change and complex socio-economic issues. To manage risks in this uncertain context, effective climate and disaster risk management must integrate different types of expertise to manage the interactions between climate change, natural hazards, biological hazards and technological hazards, and their impacts on people, communities, and ecosystems. This involves leveraging capacities from several disciplines.

54. **Climate Resilience:** This is the ability of communities, ecosystems, and systems to anticipate, prepare for, cope with, and recover from the impacts of climate change. It is about minimizing vulnerability and maximizing the capacity to adapt to both short-term climate hazards (like floods and storms) and long-term changes (like sea-level rise and shifts in temperature). Essentially, it is the capacity to thrive despite the challenges posed by a changing climate.[4] **Climate Change Adaptation**: Is the process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects. **Disaster Risk Reduction (DRR):** DRR is aimed at preventing new and reducing existing disaster risk and managing residual risk, all of which contribute to strengthening resilience and therefore to the achievement of sustainable development. DRR is the policy objective of disaster risk management. **Disaster Risk Management (DRM):** Disaster risk management is the application of disaster risk reduction policies and strategies to prevent new disaster risk, reduce existing disaster risk

[4] Centre for Climate and Energy Solutions, Climate Resilience Portal https://www.c2es.org/content/climate-resilience-overview/#:~:text=Climate%20resilience%20is%20the%20ability,better%20cope%20with%20these%20risks.

and manage residual risk, contributing to the strengthening of resilience and reduction of disaster losses.[5]

55. These disciplines often conduct their work within separate communities of practice, use different methodologies, access different funding mechanisms, and are coordinated by different ministries and communities of practice. This often leads to siloed approaches to managing risk. There is a growing recognition of the interconnectedness of disaster risk and climate change, leading to efforts to integrate these approaches. Both disciplines aim to reduce vulnerability and exposure to hazards, while simultaneously increasing resilience. Climate change impacts, such as changes in the frequency and intensity of extreme weather events, directly increase disaster risk. More sophisticated risk assessments are being conducted, although challenges remain in fully capturing all aspects of risk and translating them into actionable information. Integrating disaster risk management and climate change adaptation can lead to greater policy impact, more efficient use of resources, and more effective action in protecting lives, livelihoods, and assets.

56. Efforts to integrate disaster risk reduction and climate change adaptation are increasingly recognized as essential for building resilience against climate and disaster risks. The Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report emphasizes the need to integrate both thematic areas for meeting Sustainable Development Goals and building a climate-resilient future. A climate and disaster risk-informed UN Sustainable Development Cooperation Framework promotes integrated risk management practices, supports a whole-of-society approach, and helps prevent crises.

57. The Committee of Experts is however invited to note that practitioners' perception is that the integration of climate change adaptation into their practice is at an early stage, and that they need to improve their understanding of climate change adaptation. The study '*Integrating climate change adaptation into disaster risk reduction in urban contexts: perceptions and practice'*, referenced identified factors that may impact integration, which may be deemed applicable: (a) a recognized lack of understanding of climate change adaptation, (b) insufficient guidance on how both disciplines may be integrated, (c) the robust structure of the disaster risk reduction frameworks which provides suitable channels for facilitating integration, and (d) the fact that climate change adaptation receives more attention and financial and technical support from the international community[6].

IV. Proposal to the Committee of Experts

58. As the Committee of the Experts seeks to position geospatial information to address local, regional and global challenges, it is essential that we ensure geospatial leadership, resources and capabilities are coordinated, integrated, sustainable, accessible, and useable by Member states, towards ideally addressing their current and future challenges and needs.

59. During the intersessional period the Working Group has facilitated multiple discussions with the United Nation's Disaster Risk Reduction and Recovery for Building Resilience Team (DRT) of the United Nations Development Programme (UNDP), the United Nations Office for Disaster Risk Reduction (UNDRR), the UN-GGIM Task Team on Climate Resilience, and the UN-GGIM Secretariat towards understanding the landscape of disaster risk management (DRM) and

[5] Integrating Disaster Risk Reduction and Climate Change Adaptation in the UN Sustainable Development Cooperation Framework, United Nations Office for Disaster Risk Reduction, July 2020. https://www.undrr.org/media/47534/download?startDownload=20250710

[6] Rivera C. Integrating climate change adaptation into disaster risk reduction in urban contexts: perceptions and practice. 2014 Jan 15 ;https://pmc.ncbi.nlm.nih.gov/articles/PMC3893352/#ref2)

climate resilience. Both thematic areas are characterized by progress and significant challenges for stakeholders and Member States.

60. Member States are significantly impacted by disasters and climate change, which impact their environment on varying scales, including significant devastation and crippling economies, particularly within the global context of small island developing states (SIDS). The broad consensus of the Member States is therefore needed on how geospatial information and services further need to be integrated in streamlining the operations, procedures and decision-making process pre, during, and post varying disaster events.

61. The Working Group recognizes the efforts to integrate climate, environment and resilience, through the proposal to establish a working group focused on these areas. However, an emphasis on disasters and their short to long-term impacts on Member States, in addition to the need for geospatial information and services that strengthen their capacity to plan, coordinate, respond and recover should remain at the forefront. This is especially as many countries have small economies and limited resources, resulting in the increasing need to consider systemic risks.

62. The Working Group supports the need for the Committee to foster greater awareness of the importance and use of geospatial information as a cross-cutting theme. Further, the need for holistic integration, cohesiveness and collaboration of geospatial information throughout all arms of the UN System will enable the most strategic use of finite resources for the maximum benefit of UN organizations and Member States.

63. The Working Group seeks the support and guidance of the Bureau and the Secretariat to facilitate robust discussions with Member States on how best to integrate disaster, climate, environment and resilience within and across the work of the Committee of Experts.

64. The Working Group, in collaboration with other stakeholders, seeks to organize a webinar focused on integrating climate, environment and resilience to determine strategic synergies between Disaster Risk Management and Climate Resilience. The overarching aim and expected outcome of this webinar will be to explore paradigms in disaster and climate resilience, examine relevant policies, agreements, and frameworks and address challenges faced by Member States. This webinar is intended to provide an initial frame for areas of synergies that may be achieved by examining these thematic areas.

V. Points for Discussion

65. The Committee of Experts is invited to:

(a) Take note of the present report, its background documents, and the work undertaken by the Working Group during the intersessional period, and express its views on the continued efforts to implement the Geospatial Information and Services for Disasters at the country level and by regional committees;

(b) Recognize the need for National Mapping/Geospatial Agencies to engage National Disaster Management Agencies and their experts, to encourage collaborative working relationships towards implementing the Strategic Framework and thus realize the benefits of comprehensive disaster risk management;

(c) Express its views and provide guidance on the activities of the Working Group including efforts to collaborate across the international community of disaster risk management experts, to raise awareness and encourage the implementation of the Strategic

Framework, and strengthen connections for emergency responses at the country-level;

(d) Take note of the Working Group's intention to contribute to an in-person meeting and workshop during the next intersessional period;

(e) Provide guidance on the substantive content associated to the agenda item, on climate, environment and resilience;

(f) Encourage Member States and relevant interested experts to contribute to forthcoming consolidated activities under the agenda item and express interest in participating in these consolidated activities; and,

(g) Express its views on the preparation of a single holistic report, including a workplan, in which climate, environment and resilience are considered, to be presented to the Committee at its sixteenth session.