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Global Geospatial Information Management
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Item 10 of the provisional agenda*
Geospatial information for climate and resilience

Geospatial information for climate and resilience

Note by the Secretariat

Summary

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

At its thirteenth session, held in New York from 2 to 4 August 2023, the Committee of Experts adopted decision 13/110, in which it appreciated the commitments by Member States to contribute to the delivery of the workplan of the working group and to promote and implement the Strategic Framework on Geospatial Information and Services for Disasters as a means to provide quality geospatial information and services to support decision-making and disaster risk management efforts in support of the Sendai Framework for Disaster Risk Reduction 2015–2030 and achieving the 2030 Agenda for Sustainable Development. The Committee welcomed the proposal to examine and review the relevance and utility of the Strategic Framework every three to five years and for the Working Group to work towards integrating geospatial information with other relevant information for disaster risk reduction and resilience.

The Committee of Experts noted the call to assess the working modalities of the working group to identify strategies to strengthen its operations, including its membership, reviewing its terms of reference and to institute processes and structures to continuously manage the global disaster risk reduction inventory hub. Also noted were the efforts of the working group to engage a wider community of practice, to cultivate partnerships and to learn and develop various scenario options from experts within the different regions and to consider guidance on how geospatial and statistical information could be applied in the development of indicators that measure preparation, mitigation and adaptation, in order to monitor the long-term vulnerabilities of communities and infrastructure to disasters and climate change.

At the thirteenth session, the Committee also adopted decision 13/107, in which it commended the United Kingdom of Great Britain and Northern Ireland for authoring the discussion paper entitled "Geospatial Information for Climate Resilience – What Does UN-GGIM Do?", which articulates the intersectional nature of geospatial information with the valuable role of the frameworks and policies of the Committee of Experts in combating the climate challenge, draws attention to the potential role that national geospatial and mapping agencies could play in delivering data and technologies that assist countries in mitigating and adapting to climate change. The Committee supported elements of all three options as presented in the discussion paper, namely: (a) establish a task team under the purview of the Committee of Experts to strengthen interlinkages between geospatial, statistical, climate and other relevant communities and organizations of the United Nations system; (b) convene an appropriate and relevant international forum or event on geospatial information for climate resilience that brings relevant stakeholders together to establish an effective programme of work; and

* E/C.20/2024/1

(c) develop a more detailed concept paper that expands on the relevant initiatives, activities and frameworks under the purview of the Committee of Experts.

In this present report, the working group on geospatial information and services for disasters provides information on its progress and intersessional activities, including the revision and approval of its terms of reference, the strengthening of its membership, the review and reformulation of its task groups and the preparation of its 2024–2025 workplan, including its efforts to strengthen relations and or make connections between national mapping agencies/national geospatial information agencies and national disaster agencies, in addition to mapping the contribution of geospatial tools and services including policy as defined by the United Nations Integrated Geospatial Information Framework nine strategic pathways towards progress on the Sendai Framework. Also in the report is a proposal and justification on changing the working group's name to "working group on geospatial information for disaster risk management" and for the Committee of Experts to have a dedicated agenda item on geospatial information for disaster risk management, from its fifteenth session. In its report, the working group discusses strategies adopted and actions pursued to create synergies between climate resilience and disaster risk management and the activities pursued to raise awareness on the role and work of the working group and the relevance and benefits of implementing the Strategic Framework on Geospatial Information and Services for Disasters.

I. Introduction

1. Disaster, according to the United Nations Office for Disaster Risk Reduction (UNDRR) is defined as a serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability, and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts. The number of disaster events and more so climate related disasters are rapidly increasing in comparison to previous decades. It is critical to pay keen attention to this emerging development and the expanding systemic and interconnected nature of risk which impacts end to end systems and governance mechanisms. All measures to address these threats and challenges need to be at the front of the discussions and interventions of the Committee of Experts as it moves forward.

2. The Working Group on Geospatial Information and Services for Disasters 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 Working Group's terms of reference. Additionally, the working group provides a forum for dialogue and coordination among Member States, their relevant government bodies, the United Nations system, international disaster risk, and emergency response organizations, non-government organizations (NGOs), private sector bodies, academia, other international organizations and experts, and donors with responsibility for disaster risk reduction and management.

3. The Working Group encourages improved access to solutions through geospatial services in addressing cascading and systemic risk. There has been a call to action for 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 is also fundamental to the achievement of the 2030 Agenda for Sustainable Development.

4. At its thirteenth session, held in New York from 2 to 4 August 2023, the Committee of Experts adopted decision 13/110 which welcomed the report of the Working Group and acknowledged the progress on its workplan for the period 2020 to 2023, and options and recommendations for the future of the Working Group.

5. In this present report, the Working Group provides information on its intersessional activities and progress under the leadership of its co-chairs, Jamaica and Japan, and its three Task Group Leads (Jamaica, Japan and China). The report features the work done to complete the revision of its terms of reference, highlights the status of its 2023 to 2025 workplan activities and progress, including, efforts to connect and or strengthen relations between National Geospatial Information Management/National Mapping Agencies and National Disaster Agencies. Accompanying this report is a background document that identifies all potential and actual areas where the United Nations Integrated Geospatial Information Framework (UN-IGIF) implementation and geospatial good practice can facilitate the delivery of the Sendai Framework on how to engage more fully with the disaster management sector and advocate for greater geospatial adoption and integration using value statements highlighting the cost benefit and return on investment arguments.

6. Since the thirteenth session, the Working Group convened four virtual meetings and several meetings of its bureau, that comprised the co-Chairs, task group leads and the Secretariat, at which progress on the development of the workplan and forward planning were discussed and decided.

7. The Committee of Experts is invited to take note of the present report and its background document, which includes the Working Group's progress and intersessional activities, including the strengthening of its membership, the review and reformulation of its task groups and the preparation of its 2024–2025 workplan. The Committee of Experts is also invited to express its views and provide guidance on the

proposal to change the Working Group's name to the "Working Group on Geospatial Information for Disaster Risk Management" and to have a dedicated agenda item on geospatial information for disaster risk management. The points for discussion and decision are in paragraph 44.

II. Strengthening the functioning of the working group

Revision and approval of the terms of reference

8. The Working Group, arising from decision 13/110 of the Committee, sought to assess its working modalities and identify strategies to strengthen its functions. A thorough review of its 2020 terms of reference was conducted that re-examined the group's purpose, structure and functions. Two rounds of consultations were conducted amongst members of the Working Group, the terms of reference were revised based on the feedback received and thereafter accepted at the virtual meeting of the Working Group on 23 April 2024.

9. Within the revised terms of reference, the Working Group objectives were expanded to include: "*Encourage greater coordination and collaboration with Earth observation bodies such as the Committee on Earth Observation Satellites (CEOS) working group on disasters, the Group on Earth Observation (GEO) disaster risk reduction working group and other bodies on the increased and strategic utilization of Earth observation technologies and data across all phases of disasters*". This objective highlights the importance of Earth observation and technologies in disaster risk management through assessing the extent of damage occurrence, identifying affected incident areas, and coordinating search, rescue and relief efforts.

10. The Working Group has over four years successfully maintained a mutually beneficial partnership with CEOS working group and the GEO working group, and recognizes the need to further strengthen coordination and collaboration efforts with these groups and other Earth observation-based disaster entities. Such partnerships are a high priority of the Working Group to support decision makers at the local, national and regional levels to be better informed and prepared in the face of disasters given the real-time, wide scale monitoring and assessment that can be facilitated using Earth observation-derived information.

11. The previous seven functions of the Working Group were refined into four core functions. This included the expansion of the functions of the Working Group beyond implementing, monitoring and raising awareness, to conducting a thorough review of the relevance and utility of the Strategic Framework. This amendment was done to ensure that the Strategic Framework's relevance is assessed in relation to the implementation of the Sendai Framework of which it was developed to support, in addition to its relevance for the implementation of the UN-IGIF. The Working Group also seeks to foster mechanisms that promote the generation, availability, accessibility and utilization of geospatial information and services to support all phases of disasters. This will enable Member States to improve their preparations and respond to disasters, with access to available and reliable geospatial information and services that support informed decision making when it matters most.

Change of the working group's name

12. At the meeting of its bureau in August 2023, discussions focused on revitalizing the Working Group, which included exploring whether the group should be recomposed to become an expert group or a subcommittee given the importance and relevance of the subject. Emanating from the discussion was the need to request that the agenda of the future sessions of the Committee to include considerations for disaster risk management. The reasons supporting the need for a separate agenda item centred around what is climate resilience viz a viz disaster risk reduction. Risk is a function of vulnerability and exposure to shocks. Climate resilience is a part of the equation and is an amplifier of existing risk. Concerns raised were that climate resilience is a subset of disasters risk management (DRM). Climate change and disaster risk reduction are closely linked. Climate change is the change that can be attributed "directly or indirectly to human activity that alters the

composition of the global atmosphere, and which is in addition to natural climate variability observed over comparable time periods. DRM aims to reduce the vulnerability of people, communities, and systems to disasters, including non-climate-related events like earthquakes and climate-related events like floods and droughts.

13. As the disaster risk landscape becomes more complex the Working Group saw it fit to revise and rebrand itself. The reason for the name change is in keeping with the revitalization and renewal approach of the Working Group in relation to the scope of hazards that exist. Disasters include climate change and according to the taxonomy of hazards developed by UNDRR, climate change only addresses hydrometeorological hazards. Managing disaster risk using geospatial information focuses on data collection and integration using remote sensing and geographic information system. The proposed name ***Working Group on Geospatial Information for Disaster Risk Management*** is more fitting for the work and focus of the Working Group given the value and relevance of geospatial information for efficient and impactful comprehensive risk management. The new name is a part of the Working Group's revitalization and renewed modalities.

14. One of the outcomes of the thirteenth session, was the decision of the Committee of Experts for an agenda item "Geospatial information for climate and resilience", which now incorporates the reports of both the Working Group on Geospatial Information and Services for Disasters and the Task Team on Climate Resilience. After two Working Group meetings, discussions, and deliberations, the Working Group agreed to request the Committee of Experts to revise the agenda item to "Integrated geospatial information for disasters and climate resilience" with two subheadings: i) Geospatial information for disaster risk management; and ii) Geospatial information for climate resilience. This proposed agenda item reflects both disasters and climate resilience, maintains the separate identity and work streams, and the need for the integrated use of geospatial information in both areas.

Strengthening of the working group's membership

15. The Working Group in the past two years has had challenges in its membership, and made requests to strengthen its membership in past sessions of the Committee. After the thirteenth session, the Secretariat conducted a series of tasks that renewed and increased the Working Group's membership. An online survey was conducted in September 2023, which invited representatives from the Committee to confirm their membership in the Working Group and to update their contact details. The invitation was extended to existing members of the Working Group and Member States that expressed an interest to support the Group's work at the thirteenth session. The survey also asked respondents to identify their areas of interest in disaster risk reduction, as this would assist the Working Group in defining its workplan. The areas of focus were: i) geospatial data in support of Sendai requirements; ii) implementation of the Strategic Framework; iii) statistical framework for disaster related statistics; iv) communication and awareness raising; v) Supporting the disaster risk reduction geospatial information and services platform inventories; and vi) data collection to support preparedness such as risk mapping.

16. Forty-two respondents confirmed their interest in becoming members of the Working Group. Presently, the Working Groups has 41 members comprising of representatives from 21 Member States, eight others from the UN system and stakeholders. In terms of the gender of the members, there are 12 females and 29 males. The renewed membership saw a significant increase in participation from Member States. The current list of members is available on the Working Group's webpage on the Committee's website.

Review and reformulation of the task groups

17. The Working Group reviewed past activities of its task groups and noted difficulties in making progress in the implementation of scenario-based exercises because there is no single scenario or model for various hazard types. To support the revitalization and reformulation of its workplan, information gathered from its survey was used to inform priority areas of work to be pursued by the Working Group. The past activities and progress of task groups and the findings from the survey were discussed to determine the priority

areas for future activities of the Working Group. The following is the list of areas of focus from the survey identified by the Working Group in order of priority -

i. Implementation of the Strategic Framework

ii. Geospatial data in support of Sendai requirements

iii. Data collection to support preparedness-risk mapping etc.

iv. Communication and awareness raising

v. Supporting the DRR Geospatial Information and Services Platform

vi. Statistical framework for disaster related statistics

18. Recognizing the necessity of accelerating its activities, four new Task Groups were established, based on the priority areas identified. The new task groups are -

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

19. Working Group members were invited to participate in these task groups and indicate their interest to lead or co-lead. China volunteered to lead Task Group A, Jamaica volunteered to lead Task Groups B and C. While there were five volunteers for Task Group D, no one offered to lead the group. Two options for Task Group D were considered. The first option will be to contact disaster related international bodies such as (GEO, CEOS, etc.) and invite them to serve as Task Group D lead. If this approach is not successful, then, the other three task groups would be asked to include in their workplans the engagement/collaboration with relevant international bodies. The respective leads of each task group were asked to prepare their workplans in consultation with their members.

Preparation of the 2024-2025 workplan

20. Given the new 2023 terms of reference and the subsequent formulation of new task groups, the Working Group developed a new Workplan for 2024-2025. Each of the four task groups determined their objectives cognizant of the Working Group's overall objectives and functions. Additionally, the workplan outlined the membership, tasks to be completed, deliverables, responsible parties, and time frame for completion by each task group. The workplan is outlined in the Appendix.

21. The new 2024-2024 workplan identifies tasks to be pursued that should promote and increase communication and awareness raising, including fostering the relevance and importance of the Strategic Framework on Geospatial Information and Services for Disasters. The fostering of partnerships and collaborations that support the execution of the Working Group's objectives and functions are another priority. As such, significant effort will be made to create and maintain such partnerships with DRR and other related organizations, in addition to Member States.

III. Strengthening connections between national mapping / geospatial information agencies and national disaster agencies

22. To effectively promote the implementation of the Strategic Framework, the Working Group proposes to foster connecting national mapping / national geospatial information agencies (NM/NGIA) and national disaster agencies (NDA) within Member States. The Working Group will suggest, including through an exchange of letters, encouraging collaboration between NM/NGIAs and NDAs within Member States represented in the Working Group. Additionally, the Working Group has encouraged the NM/NGIA members of the Working Group to reach out and invite their NDA colleagues

to join them in the Working Group, so that they can work together within the Working Group towards implementing the Strategic Framework and realizing the benefits of networking, partnerships, and collaboration.

23. The Working Group also proposes to host virtual sessions that engage the NM/NGIAs and NDAs to discuss and identify geospatial data requirements, access and use needs, in addition to capacity development needs that can be addressed. This will foster partnership and collaboration with these bodies within their countries and within the Working Group. The Working Group also proposes to develop an informal survey that will target the NM/NGIAs and NDAs towards understanding their needs, how they can support each other, and how the Working Group can support their efforts. A position paper will be prepared by the Working Group based on the results of the survey and will outline geospatial data requirements, training needs, and challenges to improve the DRR efforts of Member States.

24. The Working Group called for strengthening connections between national mapping/geospatial information agencies and national disaster agencies. Each country has its own approach or mechanism for strengthening these connections and the application scenarios for utilizing geospatial information for disaster risk management.

A case study from China

25. Mapping agencies from national to local have established a connection and coordinated response mechanism with corresponding emergency management departments. In case of a disaster, the mapping agency will promptly activate its emergency response in concert with the emergency management department. The response from the mapping agency includes providing geospatial data and technology for aspects of data acquisition, map making, and intelligent information analysis, based on the agreed surveying and mapping emergency plan for the type of emergency response. Taking the 6.8 magnitude earthquake that occurred in Luding County, Sichuan Province in 2022 as an example, a series of pre-disaster image maps were provided within three hours after the earthquake, and 14 satellites were urgently mobilized for updating data. The unmanned aerial vehicle (UAV) team was quickly dispatched to the disaster area to obtain radar and optical images. A GIS service team was also mobilized and arrived at the provincial earthquake relief command center, and conducted analysis of the topography, features, and geological hazards through the 3D Geospatial Emergency Service Platform, offering timely and precise geospatial information and services for emergency command and rescue.

A case study from Jamaica

26. The case study from Jamaica discusses the benefits that can be realized for national disaster and emergency response through the forging of partnership and collaborations for providing geospatial support. The strategic partnership and collaboration forged between the Land Information Council of Jamaica (LICJ) through Jamaica's National Spatial Data Management Branch (NSDMB) in collaboration with Jamaica's Office of Disaster Preparedness and Emergency Management (ODPEM) over the past 20 years, has been key in providing geospatial support in response to various disasters such as tropical storms, hurricanes, droughts, bushfires, floods, landslides, chikungunya virus outbreak and the coronavirus pandemic.

27. Hurricane Ivan was the ninth tropical cyclone of the 2004 North Atlantic Hurricane Season, passed offshore along the south coast of Jamaica (between 10 and 11 September), as a category five system resulting in significant storm surges, coastal flooding, torrential rainfall, and extensive wind damage. The impact resulted in 17 deaths, over 18, 000 left homeless, and a total direct and indirect damage of J$35.9 billion (US$ 595,000). Of that total, direct damage was calculated at J$22.23 billion and indirect at J$13.7 billion[1]. Given the level of devastation experienced, LICJ established a partnership with the ODPEM to provide geospatial mapping support to the National Emergency Operations Centre, through a team of GIS volunteers from across the Government of Jamaica. The NSDMB as

[1] https://reliefweb.int/report/jamaica/jamaicas-experience-hurricane-ivan-case-mitigation-and-preparedness-programmes

Secretariat for the LICJ has been coordinating the deployment of Jamaica's National Emergency Response GIS Team (NERGIST) over the past 20 years, in collaboration with the ODPEM. The team of volunteers comprised of GIS professionals primarily from the public sector, with support from the private sector and academia.

28. Jamaica was impacted by Hurricane Beryl just recently, which passed offshore along the south coast of Jamaica (4 July 2024) as a category four system. Hurricane Beryl followed a similar path to Hurricane Ivan, and became the earliest category four/five system on record, developed during the first month of the North Atlantic Hurricane Season. It made history by developing from a tropical storm into a major hurricane in just over 12 hours[2]. Hurricane Beryl caused torrential rainfall, extensive wind damage, coastal flooding, inland flooding, landslides, and rockfall throughout the island, with significant concentrations occurring along the southern and western parishes. At least two deaths have been confirmed, in addition to thousands of downed trees, utility poles, and lines, extensive damage to roads and bridges, loss of electricity, potable water supply, and telecommunications. Thousands were left homeless and remain in emergency shelters, with damages, initially, estimated at J$20 billion to increase significantly after detailed post disaster assessments.

29. Jamaica was declared a National Disaster Area on 2 July 2024, and the National Emergency Operations Centre (NEOC) was activated at level three at the ODPEM. Thereafter, NERGIST was activated to provide geospatial support to the NEOC. This support included in-house mapping of the status of emergency shelters and incidents mapping. At least 12 NERGIST teams from eight government organizations were dispatched to affected parishes to conduct initial damage assessments (IDA) using computer tablets or smartphones fitted with a mobile GIS survey tool and Global Navigation Satellite System (GNSS) hand-held units. These teams conducted IDAs over two weeks with the support of 26 additional representatives from the St. Patrick's Rangers (disaster youth volunteers NGO), and unmanned aerial vehicle teams from the Jamaica Fire Brigade and Jamaica Defence Force. Incidents maps were prepared for each affected parish and included in the daily situation reports produced by the NEOC to guide response and restoration efforts.

30. NERGIST provided survey testing and field deployment support to over 10 visiting NGOs and international humanitarian bodies, including seven UN-related organizations. These organizations conducted post disaster assessments in affected communities to produce status reports and coordinate efforts for needed relief and/or restoration support. The United Nations Institute for Training and Research (UNITAR) on behalf of the United Nations Environment Programme (UNEP)/United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA) Joint Environment Unit, Emergency Response Section activated the International Charter Space and Major Disasters for Jamaica in response to Hurricane Beryl on 2 July 2024. Preliminary satellite-derived damage assessment and satellite detected water extent were conducted for affected parishes, with reports provided by UNITAR/United Nations Satellite Centre (UNOSAT). The satellite products and reports provided helped inform the operations of Jamaica's NEOC and NERGIST team.

31. MapAction team members visited Jamaica and provided geospatial mapping support to the United Nations Disaster Assessment and Coordination (UNDAC) and Jamaica's NEOC. They facilitated additional mapping support using the geospatial data collected by NERGIST in the field or mapped in-house at the NEOC. Maps displaying wind direction and areas impacted by Hurricane Beryl, amongst others were produced. MapAction facilitated collaboration discussions with the NERGIST team and supported the NERGIST Post Hurricane Beryl Debriefing Session by sharing their own experience with providing geospatial support for other similar disasters. Geospatial mapping and analysis related lessons learnt were shared amongst the NERGIST and MapAction team members. Although MapAction has left Jamaica, they will continue to provide remote support in response to Hurricane Beryl via the dedicated beryl2024@mapaction.org email address established. Knowledge transfer was also facilitated amongst the UNOCHA, UNDAC, and the International Organization for Migration (IOM), with NERGIST for the collaborative

[2] Hurricane Beryl photos show Jamaica impact, damage, aftermath (palmbeachpost.com)

field activities for damage assessment and reports. This case study from Jamaica with details of the partnerships, collaborations, and geospatial support provided in response to Hurricane Beryl are provided in the paper "*Geospatial Support through partnership and collaboration for Hurricane Beryl 2024 - Jamaica Case Study"*.

32. Existing arrangements and partnerships are critical for a timely geospatial response when an emergency is declared. The case study from China and Jamaica demonstrating the geospatial support provided through partnerships and collaborations between the NM/GIAs, NDAs, and other stakeholders align with the Working Group's recommendations for such collaborations within Member States. The unfortunate impact of disasters such as the Luding County earthquake and the most recent Hurricane Beryl[3] provided a unique opportunity for sharing information, practices, and lessons learned that may be of benefit to Member States.

IV. Collaboration with regional committees

Eleventh plenary meeting of UN-GGIM: Arab States

33. On 4 February 2024, at the workshop "Asian experience in using geospatial data in disaster management" held in conjunction with the eleventh plenary meeting of UN-GGIM: Arab States, the co-chair from Japan presented its case study on DRR utilizing geospatial information, and shared that, in addition to general activities on disaster response, the focus was also on the response to the major earthquake that hit the Noto Peninsula in Japan on 1 January 2024. Since understanding the full extent of damage immediately is extremely important after a major earthquake, the presentation demonstrated the effectiveness of using satellite SAR data, in addition to aerial photography, to assess damage and crustal deformation. In addition, the experience was shared on the latest emergency responses using geospatial information, such as 3D models of the affected area generated from aerial photographs and continuous displacement monitoring using GNSS, to promote understanding among Member States.

Twelfth plenary meeting of UN-GGIM-AP

34. At the Asia Pacific Geospatial Forum (APGF) held in conjunction with the twelfth plenary meeting of UN-GGIM-AP on 6 November 2023, the co-chair from Japan provided a keynote presentation "Geospatial technologies for disaster management in Japan", shared the preparation of geospatial information in normal times and emergency responses to natural disasters from the viewpoints of the geospatial information authority of Japan. Also in this forum, the damage caused by climate change to society, especially to island states, was brought up, and the recognition that the utilization of geospatial information is crucial for solving these issues.

Future collaboration

35. The Working Group contributed to past plenary meetings of regional committees towards fostering greater awareness of the Working Group and the Strategic Framework, thus promoting the implementation of the Framework within their Member States. These efforts also focused on increasing the Working Group's membership and the contribution or involvement of Member States in its activities. The Working Group looks forward to engaging the regional committees through their annual plenary meetings to collaboratively promote better awareness and implementation of the Strategic Framework and bolster geospatial support for their DRR operations through the application of geospatial information and services. The Working Group wishes to engage regional committees in its review of the relevance and utility of the Strategic Framework every three to five years,

[3] Hurricane Beryl, marking a significant event in the 2024 Atlantic hurricane season, has impacted a range of countries across different regions. The storm's path brought considerable challenges to Texas, leaving millions without power and causing extensive damage. In the Caribbean, nations such as Barbados, the Cayman Islands, the Dominican Republic, Grenada, Haiti, Jamaica, Mexico, Saint Vincent and the Grenadines, and Trinidad and Tobago faced the hurricane's direct effects. The widespread impact of Hurricane Beryl underscores the increasing severity of storms and the importance of robust emergency response and preparedness plans.

thus enabling the Working Group to work towards integrating geospatial information with other relevant information for disaster risk reduction and resilience.

V. Strategizing on synergizing between climate resilience and disaster risk management

36. A webinar is being planned to highlight the key concepts and principles of disaster risk management and climate resilience as separate disciplines, while examining the synergies that do or can exist. Additionally, to build awareness of how geospatial information can aid research, mitigation, monitoring, reporting, and informed decision making in both disciplines. The target audience will be policymakers, researchers, technologists, geospatial experts, disaster management and climate resilience practitioners, and stakeholders involved in policy formulation and implementation within global regions. It is hoped that this webinar will be convened in the third quarter of 2024.

VI. Implementation of the Strategic Framework on Geospatial Information and Services for Disasters and its alignment with the Sendai Framework

37. The Working Group has based its work programme on actions formulated in its Strategic Framework published in 2017. This document was a reflection of the Sendai Framework for Disaster Risk Reduction (2015-2030), signed by 187 Member States, which lays out guiding principles and priority national/local and regional/global disaster management actions. An intersessional task has been to review the complete original text of the Sendai Framework and identify specifically where greater application of geospatial information and services can support and complement Sendai Framework actions, particularly as both the disaster management and geospatial sectors have evolved since 2017. This review is provided as a background document to this report.

38. The review has recognized where core principles are shared with the UN-IGIF (e.g., in governance, law, capacity development, and communication) and actions proposed within the Strategic Framework. Since only a few lines of the Sendai Framework text make explicit reference to geospatial or even information of any kind, identification of all potential and actual areas where the implementation of the UN-IGIF and geospatial good practices can facilitate delivery of the Sendai Framework provides guidance to the geospatial community on how to engage more fully with the disaster management sector (government, international organizations, civil society, academia and private sector alike) and advocate for greater adoption and integration of geospatial information and services using value statements highlighting cost benefit and return on investment.

39. Where DRR action and in particular sensitivities towards humanitarian action are pertinent to improving individual, community, and national resilience, the report highlights issues (e.g., around vulnerability and human dignity) on which the Working Group needs to reflect, act, and consider how the implementation of UN-IGIF can be sensitized in this aspect. Recommendations from the Strategic Framework already actioned by the Working Group are many, this report sets these firmly against the text of the global policy document for disaster risk reduction and proposes to the Committee of Experts further consideration and action to support local, national, regional and global risk reduction, not only against climate enhanced hydrometeorological disasters but geological and other forms of disaster risk to populations.

VII. Considerations going forward

40. The Working Group intends to proceed with the implementation of its **new 2024-2025 workplan**, with the support of the three task groups and relevant international disaster agencies, as needed. The strengthening its functions and activities, the Working Group intends to convene an in-person meeting, noting that the last in-person meeting was over

five years ago, together with a workshop in the last quarter of 2024 at a location to be decided.

41. **Expanding partnerships** to strengthen geospatial information and services, DRR, and climate change adaptation (CCA), noting the nexus between DRR and CCA continues to evolve towards greater convergence. It is therefore important for the Working Group to expand its partnership to enhance geospatial enablement and synergies to collectively foster geo-enabled climate actions and integration of geospatial information and services use and application of data tools, standards, and practices.

42. The Working Group encourages Member States, disaster risk reduction and management organizations, and relevant academia, private sector, and United Nations system organizations to continue collaborating by contributing to the **maintenance of the global DRR inventory hub** via the active DRR surveys, whenever new information becomes available. The Working Group will seek to promote new value-added features to be included in the Hub and to encourage its use by various stakeholders in the DRR community.

43. The Working Group looks forward to forging **potential collaborations** between the HLG-IGIF towards supporting the mutual implementation of both the Strategic Framework and the UN-IGIF, the Working Group on Policy and Legal Frameworks for Geospatial Information Management and the United Nations Geospatial Network, given existing and potential areas of work that are of mutual benefit to strengthening the use of geospatial data across Member States.

VIII. Points for discussion

44. The Committee of Experts is invited to:

(a) Take note of the present report and its background documents, and express its views on the progress and efforts to revitalize the Working Group's functions which included a renewed membership, revised terms of reference, updated workplan for 2024-2025 with three task groups;

(b) Express its views and provide guidance on the activities of the Working Group including efforts to engage regional committees, raise awareness and encourage the implementation of the Strategic Framework, strengthening connections for emergency responses at the country-level with partnerships and collaboration, and support for the activities of the Working Group;

(c) Express its views and provide guidance on the request: i) to rename to 'Working Group on Geospatial Information for Disaster Risk Management', ii) for agenda item 10 to be renamed 'Integrated geospatial information for disaster and climate resilience'; and iii) the inclusion of 'geospatial information for disaster risk management' under the renamed agenda; and

(d) Take note of the Working Group's intention to convene an in-person meeting and workshop in the last quarter of 2024.

Appendix

Task Group A: Geospatial data in support of DRR

Geo Data for DRR	Country
1. Michelle Edwards	Jamaica
2. Samdrup Dorji	Bhutan
3. Quanhong Zheng	China
4. Saiful Wazlan	Malaysia
5. Abdoreza Saadat	Iran
6. Sérgio Niquisse	Mozambique
7. Allison Craddock	United States
8. Maroale Chauke	South Africa
9. Nabila Licer	Morocco
10. Pablo Morales Hermosilla	Chile
Task Group Lead	
Quanhong Zheng	
Task Group co-Lead	
Abdoreza Saadat	

Task Group Objectives

1. Provide a platform for communication and exchange on quality geospatial data acquisition, processing and exploitation services and the reduction of problems related to data security.

2. Promote the capabilities of geospatial data in decision making support across all phases of disaster risk management including disaster monitoring and warning, disaster analysis, emergency response, loss assessment and post disaster recovery planning etc.

3. Encourage collaboration in technology research and training for emergency data acquisition, rapid map creation and intelligent geoinformation services etc.

Geospatial data for DRR			
Tasks	**Deliverables**	**Responsibility**	**Time Frame**
1. Convey a webinar on Sharing and disseminating best practices of utilizing geo data for DRR, with a focus on successful case studies and implementation lessons learned.	Webinar	Task Group Members	December 2024
2. Conduct humanitarian profiling and event or incident scenario-building across all phases of disaster risk management;	Video and documents	Task Group Members	June 2025
3. Mechanism and procedure on providing geospatial data support for DRR in case of a disaster.	Document	Task Group Members	December 2025

Task Group B: Capacity development and awareness raising

Capacity Development and Awareness Raising	Country
1. Michelle Edwards	Jamaica
2. Samdrup Dorji	Bhutan
3. Aster Denekew Yilma	UNECA
4. Simone Lloyd	Jamaica
5. Odete Semião	Mozambique
6. Nabila Licer	Morocco
Task Group Lead	
Simone Lloyd	
Task Group co-Lead	
Aster Denekew Yilma	

Task Group Objectives

1. Facilitate and promote capacity development initiatives that build the capacity of member states to improve the availability, accessibility, and timeliness of good quality geospatial information for disaster risk management.

2. Initiate and support activities that foster greater communication and awareness of the work executed by the UN-GGIM Working Group on Geospatial Information and Services for Disasters.

3. Initiate and support activities that foster greater awareness of DRR related organizations, geospatial information and services platforms.

Capacity Development and Awareness Raising			
Tasks	**Deliverables**	**Responsibility**	**Time Frame**
1. a) Design and implement a communication campaign/plan that describes the objectives, goals, work and benefits of the WG.	Communication campaign designed.	CD & AR TG	February 2025
b) Prepare material, including briefing package on the WG.	Briefing material and package prepared.	CD & AR TG	March -April 2025
c) Circulate briefing materials to relevant organizations and groups.	Briefing material and package circulated.	CD & AR TG	Quarterly basis. (2024-2025)
d) Design and circulate social media posts.	Social media posts are designed and circulated.	CD & AR TG	Quarterly basis. (2024-2025)
2. WG webpage maintained with updates on activities planned and pursued.	Webpage maintained	CD & AR TG	Quarterly basis. (2024-2025)
3. Maintain developed online survey instruments to facilitate continued data collection on existing DRR organizations, geospatial information and services platforms.	Online DRR survey instruments maintained.	CD & AR TG	Quarterly basis. (2024-2025)
4. Support continued maintenance of the Global inventory platform on DRR organizations, geospatial information and services platforms	Global DRR platform maintained.	CD & AR TG	Quarterly basis. (2024-2025)
5. Conduct Webinar on Disaster Risk Management and Climate Resilience versus	Webinar concept note drafted. Webinar agenda prepared. Webinar hosted.	CD & AR TG	June 2024 August 2024 September 2024
6. Prepare position paper on Disaster Risk Management and Climate Resilience to	Position paper prepared.	CD & AR TG	September 2024-June 2025

Capacity Development and Awareness Raising			
Tasks	**Deliverables**	**Responsibility**	**Time Frame**
be presented at an appropriate DRR event.	Position paper presented at an appropriate DRR event.		
7. Encourage liaison between National Geospatial / Mapping agencies and National Disaster agencies to: a) foster increased membership within the Working Group b) forge collaboration towards implementing the Strategic Framework	Global communication prepared and circulated. Membership listing updated. Collaboration status log developed and maintained	CD & AR TG	September 2024 Quarterly basis. (2024 - 2025) Quarterly basis. (2024 - 2025)
8. Conduct geospatial data and geospatial information management (GIM) training needs assessment amongst national disaster management custodians and users to improve the DRR efforts of member states.	Assessment tool developed, tested and administered. Results of GIM and training needs assessment analyzed and report/position paper prepared.	CD & AR TG	January – February 2025 March – June 2025

Task Group C: Implementation of the Strategic Framework and alignment with Sendai Framework

Implementation of the Strategic Framework and alignment with Sendai	Country
1. Michelle Edwards	Jamaica
2. Samdrup Dorji	Bhutan
3. Aster Denekew Yilma	UNECA
4. Alan Mills	United Kingdom
5. Simone Lloyd	Jamaica
6. Saiful Wazlan	Malaysia
Task Group Leads	
Michelle Edwards	
Task Group co-Leads	
Alan Mills	
Saiful Wazlan	

Task Group Objectives

1. Map the contributions of geospatial tools and services, including policy as defined by the nine strategic pathways on the UN-IGIF towards progressing the Sendai Framework across key sectors and at different geographical levels
   a) A mapping of geospatial issues, data and services as laid out in the UN-IGIF against the text of the Sendai Framework
   b) Develop evidence or policy advice on conducting return on investment (ROI) analysis of use of geospatial (and counterfactuals)
   c) Selective case studies of good practice at different scales, for different elements of the Sendai Framework and DRR cycle
   d) Identification of policy gaps, and where potential for innovative application of geospatial data and services
2. Comparison of this outcome with the Strategic Framework on Geospatial Information and Services for Disasters

Implementation of DF and Sendai			
Tasks	**Deliverables**	**Responsibility**	**Time Frame**
1. Taxonomy of geospatial issues and terminology (high level)	Hierarchical set of key terms and definitions of geospatial	MapAction	April 2024
2. Identifying key phrases in Sendai Framework text that could have geospatial significance	Segmented document of text	MapAction	April 2024
3. Mapping of contributions of geospatial to text	Matrix of geospatial topics against Sendai text	MapAction	May 2024
4. Review of relevant geospatial and disaster related international policy	Brief Report	MapAction	End April
5. Identification of return on investment (ROI) studies that can highlight benefits of using geospatial in DRR	Combination of one or more of: 1. Policy recommendations to conduct ROI studies 2. Review of existing ROI for geospatial in DRR 3. Small number of worked ROI case studies	MapAction	Mid-May
6. Case study identification and documentations - Selective set of case studies covering various scales, scenarios, outcomes to amplify the use of geospatial framework	Series of short case study examples highlighting target audience and problem, solution and relevance to Sendai	MapAction	To be determined
7. Identification of gaps in a. Where geospatial is not being leveraged to support Sendai b. Where Sendai has outcomes and vision which geospatial is not currently supporting	Part of final report	MapAction	To be determined