

## **Joint Report of the Climate Change, Disaster Risk Reduction, Urban Resilience and Human Settlements, and Capacity Development Working Groups**

*This document is submitted by the Secretariat to the Programme Board for information.*

### **1 INTRODUCTION**

The [Climate Change Working Group \(CC-WG\)](#), the [Disaster Risk Reduction Working Group \(DRR-WG\)](#), the Urban Resilience and Human Settlement Working Group (URHS-WG) and the [Capacity Development Working Group \(CD-WG\)](#) continue to deliver on their planned activities. This report covers the period between September 2022 and January 2023.<sup>1</sup>

### **2 CLIMATE CHANGE WORKING GROUP**

#### **2.1 Introduction**

As listed on the [CC-WG webpage](#) the CC-WG has been working on the basis of a [Roadmap](#) adopted at the end of 2020, to prioritize action in line with the approved [Terms of Reference](#). The Roadmap also outlines the way members engage and contribute to the objectives of the CC-WG. It contains priority deliverables, milestones and the working timeline, as well as the work plan of each subgroup (SG). While the CC-WG activities are outlined for the 2020-2022 period, some have an ongoing nature and are intended to be continued beyond the first term.

The tasks have been run under the following four SGs, each led by one Co-chair:

- SG1: Coordination of climate issues across the GEO Work Programme and Synergies with key partners (Virginia Burkett, United States)
- SG2: Engagement with UNFCCC and IPCC (Mark Dowell, European Commission)
- SG3: Enhancing the use of EO for Mitigation (Lucia Perugini, Italy)
- SG4: Enhancing the use of EO for Adaptation and Loss and Damage (Angel Alberto Valdiviezo, Ecuador)

In the course of 2022, the CC-WG had two virtual meetings in its full format, in January and in October. An additional in-person CC-WG gathering took place jointly with the other WGs during GEO Week in Accra, Ghana, at the end of October.

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<sup>1</sup> Previous reports of the WGs are available here: [Capacity Development Working Group Report](#), [Disaster Risk Reduction Working Group Report](#), [Climate Change Working Group Report](#)

The CC-WG meetings have had the aim to provide updates to all members, whereas substantial work would be undertaken in subgroups setting and dedicated task force meetings that took place more frequently and on an ad hoc basis, depending on the deliverables. Furthermore, monthly tag-up meetings have been organized between the GEO Secretariat Climate Coordinator and the CC-WG Co-chairs.

## **2.2 Achievements**

### **2.2.1 Contribution to the WMO Global Framework for Climate Services process**

The [2022 State of Climate Services Report by WMO](#) containing the contribution of the GEO community was launched with a high-level online event on 11 October 2022. A representative of the New and Renewable Energy Authority in Egypt was invited to speak to the GEO case study mentioned in “A Solar Atlas to guide energy management and planning in Egypt,” a report based on the collaboration with GEO CRADLE.

Another GEO case study titled “Earth observation-based services in support of operation and long-term planning for the benefits of energy producers, distribution and transmission systems operators” was included in the report, illustrating the work of GEO VENER, EuroGEO, and e-shape.

GEO’s contribution was coordinated by the GEO Secretariat through the CC-WG for the third consecutive year. This critical report was also presented at the 27th Conference of the Parties (COP27) to the United Nations Framework Convention on Climate Change (UNFCCC).

### **2.2.2. Participation in GCOS 2nd Climate Observation Conference**

Numerous members of the GEO community and representatives of the CC-WG and GEO Secretariat participated in the [2<sup>nd</sup> Climate Observation Conference](#) hosted by the Global Climate Observing System (GCOS) and supported by EUMETSAT, held in Darmstadt, Germany from 17-19 October 2022. The GEO Climate Coordinator has been a member of the scientific committee since February 2022, participating in several committee meetings to design the conference’s structure and objectives.

At the Conference, the [2022 GCOS Implementation Plan](#) and the [2022 ECV Requirements](#) were presented. The GCOS Implementation Plan, the latest in a series of similar plans produced every 5-6 years, is a response to the findings of the 2021 GCOS Status Report, implications arising from the IPCC 6th assessment report and recent scientific studies on the climate cycles. The publication provides recommendations for a sustained and fit-for-purpose global climate observing system. The 2022 ECVs Requirements includes the updated requirements for all the Essential Climate Variables (ECVs) and their products.

Participants’ input was reflected in a [joint conference statement](#) calling for the definition of an “action-oriented framework for observation” under the UNFCCC, which should assist the coordination of efforts by international and national stakeholders and raise awareness of observation needs to support climate mitigation and adaptation. GCOS’ reports and input were also presented at COP27.

### **2.2.3 *Participation in and organization of GEO Week 2022 including Plenary session and side events***

Several representatives of the CC-WG participated in the GEO Week 2022 and the GEO Plenary-18 in Accra, Ghana, from 31 October until 4 November 2022. Side events offered numerous opportunities to highlight relevant work on Earth observation supporting climate information and action. Notably, two Plenary sessions were dedicated to climate matters on 3 November.

In the Plenary session “Future-proofing National Adaptation Plans”, the GEO community learnt about ongoing technical support to develop and implement Earth observation-based monitoring systems to improve the effectiveness of early warning and early action in the context of the UNFCCC National Adaptation Plans process across key sectors (see next section).

The Plenary session “Collective Action on Oceans, Climate and Biodiversity” addressed the need for increased cooperation among the ocean, climate, and biodiversity observation communities, and the opportunity to engage with governments to better align the reporting processes under the UNFCCC, Convention on Biodiversity (CBD), UN Decade for Ocean Science, and other relevant policy frameworks.

An in-person CC-WG gathering took place jointly with the other WGs during GEO Week, where members had the opportunity to get acquainted with their respective work.

### **2.2.4 *Development of supplementary technical guidance for integrating EO into National Adaptation Plans***

At GEO Week 2022 in Ghana, Accra, GEO launched new guidance to advise countries on how to use EO to tackle agriculture and food security-related challenges, as part of National Adaptation Plans (NAPs) to climate change. The [first edition of the GEO supplementary technical guidelines on NAPs](#) provides practical guidance on implementing EO as part of countries’ adaptation agendas, based on the experience of the GEO Global Agricultural Monitoring (GEOGLAM) initiative.

This significant headway builds on the successful [participation of the GEO community in the NAP Expo 2022](#) that took place in Gaborone, Botswana from 22 until 26 August 2022, the annual outreach event for practitioners and negotiators, organized by the UNFCCC Least Developed Countries Expert Group (LEG).

Advances in open data access, cloud computing and free access to analytical tools have opened up opportunities for using EO solutions for NAPs. But adoption still lags in low- and middle-income countries. While the guidance builds on the 2012 technical guidelines by the LEG for the formulation of NAPs, the GEO supplementary technical guidelines focus on the technical and institutional resources required for the successful implementation of NAPs.

The target audience for the GEO supplementary technical guidelines on NAPs includes government agencies responsible for agriculture production, planning, statistics, and emergency response, such as ministries of agriculture, environment and public safety. The guidelines can also support international organizations and NGOs in their response to emerging food security concerns.

This work was coordinated through the CC-WG and led by the GEO Secretariat and GEOGLAM team. It has been made possible through dedicated funding contributions from the United Kingdom's Department for Environment, Food and Rural Affairs.

The GEO Climate Coordinator has continued engaging with the NAP Technical Working Group under the LEG in online and in-person meetings, to promote relevant GEO initiatives that are ready to contribute to adaptation planning and implementation on the ground.

This first edition will be followed by other sectoral guidelines addressing key issues or themes in the NAP process with the use of EO, based on other key GEO initiatives including the GEO Global Water Sustainability (GEOGloWS) initiative and GEO Blue Planet.

#### **2.2.5 *Twining of GEO and UNFCCC delegations, and annual GEO COP briefing***

The GEO Secretariat coordinated with the CC-WG to prepare for the participation of the GEO community in the UNFCCC COP27. This included coordination on relevant negotiations and side events.

A GEO COP briefing addressing the Research and Systematic Observation (RSO) agenda item was prepared and submitted to GEO principals and UNFCCC delegates to promote the recognition of GEO's work in Subsidiary Bodies' conclusions. In line with other partner organizations' positions, the GEO COP briefing encouraged Parties to define a "global goal on observation" and "action-oriented framework" to assist the recognition, understanding and coordination of activities by international, regional and national stakeholders to deliver climate information on the impacts of climate change, and for mitigation and adaptation action and reporting. The briefing also promoted a mandate for GEO under the UNFCCC.

#### **2.2.6 *Participation in UNFCCC SBs, COP27, SBSTA Earth Information Day, and organization of side events***

Several representatives of the GEO community, CC-WG and GEO Secretariat took part in the UNFCCC COP27, held in Sharm El-Sheikh, Egypt, from 6 until 18 November 2022.

GEO co-organized side events and held bilateral meetings around the themes of early warning, adaptation and nature-based solutions with members and partners, including Australia, Canada, China, Egypt, France, Germany, Japan, Spain, the United Kingdom, the United States, WMO, the Committee on Earth Observation Satellites (CEOS), the Climate Risk and Early Warning Systems (CREWS) initiative, the Food and Agriculture Organization (FAO), the United Nations Environment Programme (UNEP), the World Economic Forum (WEF), the Global Risk Modelling Alliance (GRMA), the Space Climate Observatory (SCO), the Coalition for Rainforest Nations (CfRN), Campaign for Nature, SLYCAN Trust, Consultants to Government and Industries (CGI), Planet, and the World Geospatial Industry Council (WGIC), among others.

Of note, a [side event at the Science Pavilion](#) focused on the WMO [2022 State Climate Services report](#), which includes two GEO case studies: the Solar Atlas in Egypt by GEO CRADLE, and GEO VENER work in France. Moreover, a [side event at the Mediterranean pavilion](#) included discussions on solutions to climate impacts for the coastal city of Alexandria. A [side event at the Resilience Lab](#) pavilion investigated the use of climate intelligence to efficiently manage natural resources and contribute to effective insurance mechanisms. Finally, a [side event at the Food](#)

[and Agriculture Pavilion](#) highlighted the climate benefits of forests for adaptation, and the successful validation of Ghana's forest monitoring report, which qualified for result-based payments thanks to a methodology developed by GEO's Global Forest Observations Initiative (GFOI), hosted by FAO.

The [Earth Information Day](#) is the key official event for the systematic observation community to provide updates to the negotiators and influence the discussions during COP. This year, GEO presented contributions on mitigation with Lucia Perugini, Senior Scientific Manager at the Euro-Mediterranean Center on Climate Change (CMCC) in Italy, and co-chair of the CC-WG, and on adaptation and early warning with Lucy Mtilatila, Director of the Department of Climate Change and Meteorological Services, Malawi. Especially relevant was a success story from Malawi: the experience of implementing modernized climate information and community-based early warning systems using augmented forecasting capabilities from the GEOGloWS initiative. The Earth Information Day poster session showcased other examples of operational services from GEOGloWS, GEO Blue Planet, and GEOGLAM initiative, which has just launched the first GEO supplement to the UNFCCC National Adaptation Plans technical guidelines.

The relevant [COP decision on Research and Systematic Observation \(RSO\)](#) welcomed efforts to achieve a sustained and fit-for-purpose global climate observing system, as well as related ECV requirements, and encourages Parties and relevant organizations to work on implementation. The decision also "recognizes the need to enhance the coordination of activities by the systematic observation community and improve its ability to provide useful and actionable climate information for mitigation, adaptation and early warning systems, as well as information to enable understanding of adaptation limits and of attribution of extreme events". This critical language was retained and elevated in the [overarching COP decision](#), further stressing the importance of addressing gaps in early warning systems and climate information services in developing countries through Earth observations. The decision also invites Parties to support the implementation of the Early Warning for All initiative, endorsed by the UN Secretary General and spearheaded by the World Meteorological Organization (WMO).

However, despite support from developing countries and some developed countries, Parties were not ready to agree on a stronger language on a global goal or action-oriented framework for EO.

Going forward, GEO's interests and potential should not be restricted to RSO in future. Other existing workstreams such as those on matters related to Least Developed Countries, National Adaptation Plans, the Global Goal on Adaptation, Loss and Damage, the Global Stocktake, and the newly established four-year work on the implementation of climate action on agriculture and food security, as well as the Ocean and Climate Change Dialogue provide fresh entry points for the GEO community to contribute to the process considering many valuable ongoing GEO initiatives.

Following COP27, in December 2022 the Convention on Biological Diversity (CBD) COP15 adopted the Kunming-Montreal Global Biodiversity Framework (GBF) with 23 targets that the world needs to achieve by 2030. There is an opportunity for GEO to build bridges between the two conventions on climate and biodiversity.

## **2.3 Work in progress**

### **2.3.1 Information note on reporting requirements under the Paris Agreement – mitigation**

The CC-WG was tasked to identify Earth observation needs for greenhouse gas (GHG) inventories and Monitoring Reporting and Verification (MRV) of mitigation actions considering the emerging obligations under the UNFCCC/Paris Agreement frameworks involving relevant stakeholder groups and IPCC Task Force on National GHG Inventories (TFI).

An information note was finalized in October 2022 with contributions from CC-WG members. The information note reports data requirements (e.g. resolution, format and spatial characteristics) for GHG inventories development, and underlines how EO data, and in particular remote sensing data, can contribute to build a complete and transparent national GHG inventory, taking into account the 2006 IPCC guidelines and their 2019 Refinement.

The GEO Secretariat is planning on publishing the information note on the GEO website in early 2023, following professional document editing and design.

## **2.4 Future trajectory of the working group**

The CC-WG had started considering the transition to the 2023-2025 term, including the definition of a new roadmap and related deliverables reflecting emerging topics, and governance issues such as the election of new WG co-chairs.

Currently, governance decisions on the transition to 2023-2025 term have been put on hold while the review of the GEO Foundational Tasks takes place.

## **3 DISASTER RISK REDUCTION WORKING GROUP**

### **3.1 Introduction**

The DRR-WG has been working in accordance with ten tasks listed on the [WG webpage](#) to prioritize action in line with the approved [Terms of Reference](#). The list articulates the way members engage and contribute to the objectives of the DRR-WG with priority deliverables. Most of the tasks are designed to deepen the DRR-WG's partnership with the [United Nations Disaster Risk Reduction \(UNDRR\)](#) and the [United Nations Global Geospatial Information Management Working Group on Geospatial Information and Services for Disasters \(UNGGIM-WG5\)](#). While the DRR-WG tasks were originally outlined for the 2020-2022 period, all of them have an ongoing nature and have continued beyond the first term, as described below.

The total of ten tasks have been run under the following three subgroups (SG), each led by three co-chairs:

- SG1: GWP Coordination (Dave Borges, United States)
- SG2: UNDRR Coordination for Sendai Framework Priorities (Nathaniel K. Newlands, Canada)
- SG3: Climate Change and SDG Coordination (Kene Onukwube, Nigeria)

Seven out of ten tasks made specific achievements in the last period as reported to the PB in September last year ([PB-24.04](#)) as well as this reporting period. Two out of three remaining tasks are close to make achievements, while one more is in the process of revival.

Since September 2022, DRR-WG held one working group meeting supplemented by six sub-group meetings to manage its planned tasks. Furthermore, monthly tag-up meetings have taken place between the GEO Secretariat DRR Coordinator and the DRR-WG Co-chair.

### 3.2 Achievements

#### 3.2.1 *Listing of Sendai Framework national focal points as the follow-up on the Joint Engagement Mapping Report*

After the launch of the report, [Mapping the Engagement of the 2020-2022 GEO Work Programme in Climate Action, Disaster Risk Reduction and Capacity Development](#), which was jointly done by three working groups, DRR-WG has taken up on a follow-up activity to support implementation of one of its key recommendations: increase engagement with DRR focal points and users.<sup>2</sup> The DRR-WG has compiled a list of approximately thirty African Sendai National focal points through its network. The intention is to help support GWP 2023-25 activities and the Post 2025 incubators, e.g. a possible incubator on systemic risk, to connect and establish collaboration with the national focal points of countries so that their tools and services can be catered to their needs and to increase local impact. Africa was the focus of the list because this is the area with high demand of support.<sup>3</sup> The DRR-WG intends to support GWP coordination workshops, especially from the 2<sup>nd</sup> rounds onward as activities start identifying possible areas of collaborations among themselves.

#### 3.2.2 *Follow-up analysis and communication of the [UN Global Assessment Report on Disaster Risk Reduction 2022 \(GAR 2022\)](#)*

As reported by the PB report from last September, DRR-WG members published the following three Contributing papers of the UNDRR's flagship report, [Global Assessment Report on Disaster Risk Reduction 2022 \(GAR 2022\)](#):

1. [EO into DRR actions](#)
2. [Global Navigation Satellite System for hazards](#)
3. [indigenous knowledge for DRR](#)

As a follow-up, the working group task team analyzed EO descriptions in the aforementioned [main report of GAR2022](#), published their analysis as a [GEO blog](#) and shared it at a GEO Week side event. The team found it important that two points were raised in the GAR 2022:

- EO is useful in all disaster phases: 1) for improving the understanding of long-term changes in climate and impact on people, 2) for seasonal weather forecasts as well for

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<sup>2</sup> The joint report pointed out that nearly 60% of the GWP activities have no or limited connections with users at the national levels, such as national DRR government agencies. Only 2 GWP activities confirmed their relationships with the specific Sendai Framework National Focal Point person, who are responsible for reporting of Sendai Framework indicators to the UN.

<sup>3</sup> For example, Africa is the focus of the new Early Warning for All Initiative, as only 40 % of Africa is covered is substantial to comprehensive early warning system. See [Early warnings for all of Africa by UNDRR](#).

early warning of hazardous events, in addition to 3) the ongoing international efforts to provide the close to real-time impact assessment on disasters;

- Data scarcity, especially open-source data, is a remaining key challenge for the development of quality models to underpin DRR-decision-making in many countries, and GEO has been filling the gap.

On the second point, GEOGLAM's crop monitoring for early warning was specifically mentioned as an example. The GAR2022 also highlighted GEO efforts<sup>4</sup> in wildfire monitoring with air quality/pollution monitoring research, suggesting potential contributions to improved public health.

### **3.2.3 Communication and outreach at GEO Week in support of GEO solutions uptake in Ghana**

GEO-DRR WG seized the opportunity of GEO Week to organize two side events:

- [EO Risk Toolkit Information Session](#) (Monday, 31 October, 14:00-15:30)
- [EO and Health: Early warning and beyond!](#) (Tuesday, 1 Nov, 11:00-12:30)

Keeping in mind the afore-mentioned recommendation to increase engagement with stakeholders, the DRR-WG brought in key Ghanaian stakeholders as panelists: the Sendai Framework National Focal Point of Ghana and the Head of Geospatial and Big Data Unit at the National Disaster Management Organization (NADMO) as well as the lead for disease surveillance at Ghana Health Service. With all three Ghanaian guests, three ideas of possible coordination and collaboration with the GEO community emerged and there have been follow-up actions to pursue them.

The Sendai Focal Point expressed interest in EO to deepen the understanding of attribution from a hazardous event, such as flood, in agricultural loss. The idea has been communicated to GEOGLAM during GEO Week. Since then, a new Ghanaian focal point of GEOGLAM has been identified and introduced to the NADMO team to do the follow-up.

The head of Geospatial Unit of NADAMO expressed the need to increase multi-hazard monitoring and forecasting capability of Ghana by enhancing linkages between the national system with regional and continental platforms. This idea has been noted as a possible activity of the cross-GWP collaboration activity and can be introduced at upcoming GWP Coordination meeting.

The lead for disease surveillance at Ghana Health Service expressed his interest in implementing [Early Warning System for Mosquito-borne Diseases \(EYWA\)](#), which was presented by a DRR-WG member, who have been creating the solution as a EuroGEO's e-shape pilot project. Since GEO Week, a Ghanaian university and the EYWA team have formed a new partnership to expand the existing research on modeling lymphatic filariasis disease and forecasting mosquito populations. The team is also working with local agencies to gather data on mosquitoes in Ghana to improve the accuracy of the model. At the same time, the team has begun searching for more partners with in-situ entomological and malaria data. In other words, the DRR-WG event created a new opportunity to build an operational system for the disease in Ghana.

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<sup>4</sup> The report did not mention the names of GEO Work Programme activities, but it was in reference to GWIS and GEODESY4SENDAI.



### **3.2.4 *Assessment of EO descriptions in DRR law and strategy for the Republic of the Philippines***

After assessing Japanese DRR Law and Strategy, DRR-WG examined the current DRR Strategy of the Republic of the Philippines, [National Disaster Risk Reduction and Management Plan \(NDRRMP\) 2020-2030](#). NDRRMP had only one mentioning of EO: a use of satellite imagery in a past disaster event. Remote sensing, GIS and observation were not mentioned at all in the strategy although the NDRRMP clearly called for better application of science and climate-information across different timescales of DRR. The DRR Coordinator shared the assessment result with members of the Philippines' National Disaster Risk Reduction and Management Council on 29 September and recommended to make an improvement on EO reference when the government has the chance to revise or update the strategy.

### **3.2.5 *Communication of EO-links between DRR, Climate Change and SDGs through Midterm Review of the Sendai Framework bilateral interview***

A youth member of the DRR-WG provided a formal input to the Midterm Review of the Sendai Framework through a scheduled interview by a senior staff of the UNDRR. Recommended by the UNDRR staff members who participate in the GEO DRR-WG, a youth member of the working group was selected as one of a few individuals to be interviewed for the Review. During the interview in October, she emphasized the usefulness of EO for DRR, such as for early warning and Sendai/SDG reporting. The review and the High-Level Meeting of the UN General Assembly on the Midterm Review will feed into the High-Level Political Forum on Sustainable Development, the quadrennial review of the SDGs, the SDGs Summit, COP28 and the Stock take of the Paris Agreement.

## **3.3 Work in progress**

### **3.3.1 *Scientific publication of a GAR Contribution Paper***

One of the GEO's GAR 2022 contribution papers mentioned above titled "[EO into DRR actions](#)" is selected and scheduled to be published by the Disaster Prevention and Management (DPM) journal by [Emerald Publishing](#) in the first quarter of 2023. This is the paper which highlights multiple DRR-related GWP activities, such as GEOGLAM, GSNL and GWIS.

### **3.3.2 *Contribution to the Special GAR 2022:***

Under a joint task of Task 2.4 (GAR paper) and Task 3.2 (compendium of references on EO roles in SDG targets and indicators), DRR-WG had a dedicated working group meeting in January to discuss how they can contribute to the UN Global Assessment Report on Disaster Risk Reduction Special Report (GAR SR) 2030, entitled 'Risk-informing the Sustainable Development Goals: Metrics and measures to build resilience in a changing climate'. Over the next few months, the DRR-WG is planning to update the Task 3.2 compendium and to accelerate their efforts to help UNDRR compare existing resilience metrics and their SDGs connection and identify elements that are crucial to measure resilience to disasters in the context of the SDGs and a changing

climate. The DRR-WG will also look within GEO for country cases where the identified elements have been implemented successfully.

### ***3.3.3 Policy briefs and use cases on the use EO to create disaster loss data for DRR strategies and for reporting on the Sendai Monitor Global Indicators***

Two German representatives of the DRR-WG members have shared the progress of German university project supported by the Federal Office of Civil Protection and Disaster Assistance (BBK) and other Federal States to produce a guideline for a technical workflow, including recommendations for suitable geodata and models, to implement a tool to estimate and quantify economic damage after flood events, depending on different flood scenarios e.g. flash flood vs. large-scale river floods. Assuming that this research project is successfully adopted by the Federal States, the guideline could be shared through the DRR-WG to support the Sendai reporting as well as policy planning of other countries and stakeholders.

### ***3.3.4 GSNL use cases for EO Risk Toolkit***

The following two EO Risk Toolkit use cases of Geohazard Supersites and Natural Laboratories (GSNL) are currently under development:

- Ecuadorian Volcanos Supersite for the September 2020 eruption
- Virunga Supersite in the Democratic Republic of Congo for the May 2021 eruption

### ***3.3.5 Support for the uptake of EO for systemic risk***

A team in the DRR-WG is currently going through peer review of a possible journal publication for the Multidisciplinary Digital Publishing Institute (MDPI) Geosciences journal. The paper examines the role of EO in coping with DRR and climate change for the Small Island Developing States through the perspectives of systemic risk. To build on this paper on conceptual framing, the team plans to zoom into the case of Jamaica. By involving Jamaican researchers and students, SWOT analysis will be conducted to closely examine how EO can be better equipped for hazards of concern and produce policy briefs for the government. For this purpose, the team is applying for the USAID grant.

### ***3.3.6 Revival effort of a task to contribute to UNDRR tools for risk knowledge***

One of the ten DRR-WG tasks has been dormant: Task 2.3 on development and implementation of EO-leveraged data collection tool to visualize DRR vulnerability and exposure. Inactiveness is due to the organizational change of a task lead whose funded project was terminated. To revive the task, a DRR-WG co-chair proposed to respond to [UNDP-WMO-UNDRR joint statement on tracking of hazardous events and disaster losses and damages \(released on 21 Dec\)](#), as an outcome of the [Technical Expert Forum 2022 \(Nov 29-30\)](#). The idea is for GEO DRR-WG to contribute to UNDRR's plan to update its tool called the [DesInventar Sendai](#) that tracks disaster loss and damages and to develop an accompanying policy paper on the data value chain.

Meanwhile, DRR-WG plans to dedicate its next meeting to discuss concrete steps to provide data inputs to UNDRR's web-based tool called Risk Information Exchange (RiX), that highlights existing open disaster risk data and knowledge.

### ***3.3.7 Future trajectory of the working group***

The DRR-WG co-chairs had started considering the transition to the 2023-2025 term, including the renaming and redefining tasks and deliverables as well as establishing more effective

governance mechanism, such as assigning subgroup leaders instead of deputy chairs to follow the model of the Data Working Group.

Like the CC-WG, formal discussion and making decisions on the transition to 2023-2025 term have been put on hold while the review of the GEO Foundational Tasks takes place.

## **4 RESILIENT CITIES AND HUMAN SETTLEMENTS WORKING GROUP**

### **4.1 Introduction**

In November 2021, the GEO Plenary approved the Resilient Cities and Human Settlements (RCHS) as a fourth GEO engagement priority. The following objectives were set for this engagement priority:

1. Work with UN-Habitat and other competent organizations (including, among others, UN Development Programme, UN Environment Programme, World Bank, and the World Health Organization) to formulate how Earth observations can continue to assist in the implementation of the New Urban Agenda (NUA), to support the assessment every four years of the progress of the NUA implementation, and to foster sustainable urbanization;
2. With the assistance of partner organizations, engage cities and other stakeholders to understand their needs and to identify the highest-value opportunities for application of Earth observations;
3. Exploit existing and develop new Earth observation-based tools and services to support the NUA and sustainable urbanization;
4. Provide greater visibility to ongoing GEO Work Programme activities relevant to urban resilience and encourage the development of new activities to address identified gaps;
5. Collaborate with those working on the other GEO engagement priorities, especially through their dedicated GEO Working Groups; to identify synergies, avoid duplication of efforts, and amplify GEO's impact;
6. Pursue opportunities with Regional GEOs to develop projects addressing urban resilience in line with their existing agendas; and
7. Develop the appropriate messages, language, and tools to communicate what the GEO community has to offer to cities and other stakeholders.

Ultimately, the aims of the Resilient Cities and Urban Resilience engagement priority are that:

- Communities, cities, and countries understand the value and usefulness of Earth observations in the urban context and apply Earth observation-based tools in their normal operations to enhance their resilience; and
- The GEO community supports the application of Earth observations to cities, other human settlements, and sustainable urbanization by continuously adapting, as appropriate, GEO Work Programme activities, developing new activities, and engaging with a wider range of key organizations, for example, national statistical offices, sub-national actors, and specific city stakeholders.

Following the recommendation of the Programme Board, the terms of reference of the RCHS Working Group (URHS-WG) were approved by decision of the 54<sup>th</sup> ExCom Meeting. ExCom recommended that attention be given to avoiding overlaps and identifying synergies with the existing Working Groups. The URHS-WG has not yet been convened due to resource constraints to support this work at the GEO Secretariat but members of its precursor body (RCHS Subgroup) have continued supporting and pursuing relevant activities along the lines described in 4.1.

Martyn Clark has joined the GEO Secretariat as the Urban Resilience Coordinator as of 16 January 2022. With this recruitment, the Secretariat will be able to support the development and implementation of the work plan of this engagement priority.

#### **4.2 Achievements & work in progress**

As included in the [RCHS engagement plan](#), as approved by PB19, networking activities and increasing visibility of the new engagement priority was of outmost importance during 2022. Presence in the 11<sup>th</sup> World Urban Forum (Katowice, Poland) was set as a milestone. A dedicated training event entitled “[The Earth Observations Toolkit for Sustainable Cities and Human Settlements – Supporting Evidence-based policymaking for Equitable Urban Futures](#)” was organized by the ITC, University of Twente together with the GEO SDG Toolkit Group to achieve the milestone. Further networking activities included interaction and setting the scene for further collaboration with several city networks (i.e. Resilient Cities, ICLEI), under different frames and opportunities (e.g. [European Urban Resilience Forum](#), 14-15 Sep 2022, Athens).

Substantial contributions have been incorporated in the developing concept notes of two of the incubators proposed by the GEO Secretariat during the GEO Week/Plenary in Ghana, namely “Heat and Health” and “Global Ecosystem Extent”, where the urban domain and activities within the GEO Work Programme have been highlighted and links with the objectives of the RCHS engagement priority have been established.

#### **4.3 Future trajectory of the working group**

With the recruitment of the new Urban Resilience Coordinator in the GEO Secretariat, the structuring of the RCHS-WG will commence building on the experience gained and novelties brought in (i.e. inclusiveness and active engagement of entities outside the GEO community e.g. city networks) during its operation as a RCHS Subgroup but also from lessons learnt from the operation of the existing WGs (i.e. Climate Change, Disaster Risk Reduction, Capacity Development).

In view of the transition 2023-2025 period and the new landscape being discussed for the post-2025 era, feedback will be sought from key interlocutors (also as part of the review of the foundational task structure), to determine an appropriate structure for the advancement of this engagement priority (given its cross cutting and extrovert character), including how its duties, membership and working arrangements be best oriented for maximum impact.

### **5 CAPACITY DEVELOPMENT WORKING GROUP**

#### **5.1 Introduction**

The Capacity Development Working Group (CD-WG) has been dormant in terms of operation and activity implementation for some time now. This is due to several factors, including low

member engagement, limited capacity to contribute to the GEO Work Programme, and the limited capabilities to co-design and implement capacity development activities, among others.

## 5.2 Achievements

Even though the CD-WG is inactive, individual members with the support of the CD Coordinator lead capacity development activities through their respective GEO initiatives. During the report period, a two-day international workshop on sustainable land use and management to enhance food production in Ghana and Africa was organized with support from the CD-WG from the 29 to 30 October 2022. Under the theme Land Degradation Neutrality (LDN),” the workshop provided experts and practitioners from several African countries with knowledge and skills to develop innovative solutions to combat desertification and land degradation to boost food production.

## 5.3 Work in progress

There is a growing consensus at the Secretariat and within the Working Group about redefining the status and function of the group to enhance its value addition to GEO. Based on the preliminary discussions between the Co-Chairs and the Secretariat, one effective way of redefining the role of the CD-WG will be to evolve it into a Community of Practice (COP).

On 31 October 2022, a meeting for the CD-WG members was scheduled during GEO Week 2022 to discuss key recommendations on capacity development detailed in the report on [Mapping the Engagement of the 2020-2022 GEO Work Programme](#). The meeting also aimed to discuss how best the community can be redefined to create value, stimulate national engagement through initiatives, and be an attractive network of varied stakeholders within the EO value chain. Unfortunately, the meeting could not take place due to the low turnout of WG members at GEO Week.

## 5.4 Future trajectory of the working group

A virtual meeting has been scheduled for 31 January 2023 to continue with the discussion on the recommendations of the mapping report as well as discussion on the prospect of evolving the working group into COP. This will be followed by an evaluation of the WG as part of the review of the GEO Foundational Tasks. As a joint effort with the other working groups – CC and DRR, further actions and decisions on the transition of the CD-WG will be put on hold during the review of the Foundational Tasks.

## 6 JOINT PROPOSAL FOR THE WAY FORWARD

As part of the review of the GEO Foundational Tasks, a joint evaluation is proposed with the aim of assessing the impact and usefulness of the WGs at the end of the 2020-2022 term.

The evaluation will be prepared jointly by the four WG coordinators and Co-chairs and disseminated to key stakeholders, including the GEO WG member, GEO Work Programme activity leads, Programme Board members, GEO Members, GEO Secretariat, etc., in the format of an online survey. The survey will be rolled out between March and May 2023; following the analysis of the results, the survey outcomes and recommendations on the future of the WGs will be presented to the PB for decision at the PB-26 meeting in June 2023.

Meanwhile the pending 2020-2022 deliverables of the WGs are expected to come to a conclusion, while governance decisions relating to the 2023-2025 transition to new roadmaps and Co-chairs elections are put on hold until a final decision on the review of the GEO Foundational Tasks is made by the Programme Board.