

REPORT OF THE CAPACITY DEVELOPMENT WORKING GROUP

This document is submitted by the Capacity Development Working Group to the 17th Plenary for information.

1 INTRODUCTION

In May 2020, the GEO Secretariat requested nominations for the different Working Groups. For the Capacity Development Working Group (CD-WG), over 54 candidates were nominated by either a member state, PO or associate. Currently, the CD-WG has 59 members representing (inter-) government organizations, research centres, commercial sector and NGO's in the Americas, Africa, Europe and Asia.

Nancy Searby, Allison Craddock and Hanna Albrecht were elected as co-chairs. Unfortunately, Hanna Albrecht had to resign by the end of 2020.

A part-time Capacity Development officer, seconded by the University of Twente/ITC for one day/week to the GEO Secretariat, coordinated the CD-WG.

The purpose of the CD-WG is to facilitate GEO's efforts on capacity development, promoting the principle of co-creation and providing conceptual support to the design, development, implementation and evaluation of capacity development activities at various levels of intervention. The group works to provide capacity development support for the sharing of science-backed knowledge for decision making, as noted in the Canberra Declaration (2019) when the Ministers: "*Reiterate the critical role that full, secure and open sharing of Earth observations data and **knowledge** will play in deeper integration of Earth observation technologies into the digital economy.*"

The main duties are:

- Support GEO Flagships, Initiatives and Regional GEOs, on request, in the design, implementation, and evaluation of capacity development interventions;
- Develop, improve, and provide capacity development tools for use by the GEO community;
- Collect, document, and share good practices for capacity development related to Earth observations;
- Promote, facilitate and analyze the inclusion of capacity development data, information and knowledge through the GEO Knowledge Hub;
- Organize seminars, teleconferences, side-events and other means for disseminating information related to capacity development for Earth observations;
- Support the planning and implementation of impact assessments for capacity development activities within GEO.

The Working Group established 3 subgroups to assist in fulfilling its duties:

- Subgroup 1: GEO mapping and needs assessment;

- Subgroup 2: Collecting, sharing and developing CD tools;
- Subgroup 3: Organizing dissemination events, M&E and impact assessment.

An Action Plan 2020-2022 has been co-developed with the CD-WG members.

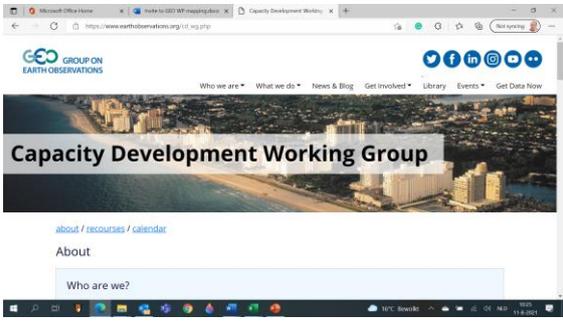
2 ACHIEVEMENTS 2020-2021

Monthly co-chair meetings have taken place to coordinate the CD-WG activities and to lead the subgroups. Co-chairs represent the WG to other groups within GEO and to outside organizations.

Periodic plenary and subgroup meetings have taken place in 2020 and 2021.

The following primary achievements of the three subgroups can be mentioned:

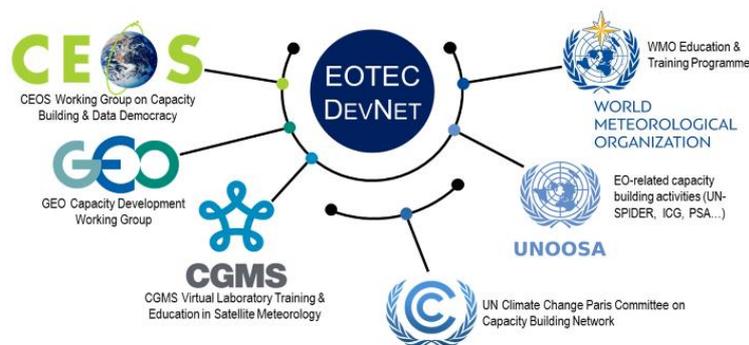
SUBGROUP 1	Achievements
Mapping of GEO WP activities linked to capacity development	To understand the contributions of the WG members to the GWP and to identify liaisons between the CD-WG and GWP activities, a WG member engagement survey has been conducted. This is further supported by the Joint GWP Mapping exercise.
Understand the needs of the GEO flagships, initiatives and regional GEO's to strengthen their CD activities (design, implementation, evaluation)	To better understanding the existing GEO Flagships, Initiatives, Community Activities and Regional GEOs climate action, DRR, and capacity development activities, a Joint GEO Work Programme Survey has been developed collaboratively by WG Co-Chairs in Climate, DRR, and CD with support and coordination from the Secretariat, and was distributed to the GEO Work Program components in September 2021. Discussion of this activity and presentation of preliminary results is presented in the Appendix to this document.
Organize demand-driven advisory support to the GEO work programme activities	<p>Targeted CD support has been provided to GEO flagships and Initiatives upon request. For example, CD-WG met with members of GEO Blue Planet to discuss their existing CD resources and future needs. GEO flagships and initiatives are encouraged to contact the CD-WG for consultation and collaborations as appropriate.</p> <p>The CD-WG coordinated, at the request of the former GEO Director, the co-design of a draft GEO Statement on Open Science. This statement was drafted to ensure the integrity of research and accelerate scientific progress, while advocating transparency, diversity, collaboration, and sustainability. This effort included input from members of the Programme Board Equality, Diversity, and Inclusion (EDI) Subgroup. This effort ultimately laid</p>

	<p>the foundation for drafting the GEO Statement on Open Knowledge (submitted to the 17th Plenary for decision).</p> <p>The CD-WG is working with the GEO Knowledge Hub (GKH) team to define capacity development inputs into the GKH Communication, Engagement and Impact Plan.</p>
<p>SUBGROUP 2</p>	<p>Achievements</p>
<p>Collect, document, and share good practices for capacity development related to Earth observations.</p>	<p>The CD-WG webpage has been launched (under the GEO website), which provides a collection of capacity development resources, a training calendar, and outcomes of the CD-WG webinar series.</p> 
<p>Develop, improve, and provide capacity development tools for use by the GEO community.</p>	<p>Several capacity development tools have been developed by CD-WG members due to their involvement in EO related projects; many of these tools were presented and discussed at WG meetings, seminars, and symposium sessions (and are available on the CD-WG webpage).</p>
<p>SUBGROUP 3</p>	<p>Achievements</p>
<p>Organize seminars, teleconferences, side-events and other means for disseminating information related to capacity development for Earth observations</p>	<p>The CD-WG initiated the CD webinar series to present and share best CD practices among the members. Two seminars have been conducted and the videos are available on the CD Website.</p>  <p>CD-WG Seminar Series</p> <p>During the GEO Virtual Symposium 2020 and 2021, the CD-WG organized sessions to share CD best practices with the GEO community.</p> <p>When organizing seminars and webinars, special attention was paid to ensuring a diverse and inclusive panel whenever possible.</p>

<p>Organize and support the planning and implementation of an M&E system and impact assessments for capacity development activities within GEO.</p>	<p>In October, after a four-year commitment, the CD-WG Coordinator has stepped back from this role, transitioned into being a CD-WG member, and is now serving as the GEO Impact Design Officer. In this role, he will serve as the GEO secretariat focal point for the design and development of GEO Work Programme's Impact Approach. Making the results and impact of all GEO Work Programme activities more explicit and visible provides better insights and makes us accountable to our contributors and stakeholders, and provides opportunities for additional funding and financial investments. The relationship of this work with this element of our work plan will be determined in 2022.</p>
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As an additional approach to disseminating information related to capacity development for Earth observations and understanding available tools, capacity development resources, and user needs, the CD-WG is represented in the Earth Observation Training, Education and Capacity Development Network (EOTEC DevNet). The network shown in the graphic below includes organizations that provide space-based EO assets and those who have a mandate to enable their use. Secretariat support is provided by the Working Group for Capacity Building and Data Democracy (WGCapD) of the GEO Participating Organization Committee on Earth Observation Satellites (CEOS). This network aims at filling an existing gap in the coordination of capacity building efforts related to the use and application of Earth observations (EO) in solving development challenges and fostering sustainable development. Its goals are to:

- Improve coordination and cooperation among capacity building providers and users to meet existing needs and fill gaps;
- Foster information sharing and exchange access to and increase uptake of capacity building resources;
- Promote effective assessment of capacity development needs, particularly at regional and national levels.



Since initiation of Pilot Phase 1 in March 2021, EOTEC DevNet has held two sets of regional meetings that align with GEO's regions to discuss locally-relevant tools and capacity development activities related to flooding and drought. These focal areas were selected by members as part of the group's focus on disaster risk reduction, which sits at the nexus of the three sustainability frameworks that drive the network's activities: the Paris Climate

Accord, the Sendai Framework, and the Sustainable Development Goals. Additionally, the leadership of EOTEC DevNet met in October 2021 to finalize documents that sit at the core of EOTEC DevNet's operations, including a Theory of Change, Concept of Operations, and a Basis of Estimate for the remainder of the pilot activities.

Pilot Phase 2 of EOTEC DevNet was endorsed on Monday, November 1 at the CEOS Plenary and CEOS WGCapD's EOTEC DevNet Task Team will continue to build this network and address capacity building gaps through the March 2023 end of phase 2. GEO CD-WG will continue to engage and strengthen connections with the GWP activities.

3 WORK IN PROGRESS 2021-2022

For the period 2021-2022 we seek to establish a more substantial alignment with the GEO WG's, Regional GEO's and GWP activities through the appointment of CD-WG liaisons. We look forward to a full-time GEO CD-WG coordinator, and plan a reflection to ensure the CD-WG is most effective and impactful for GEO in the coming years.

We will continue to establish smaller support/task teams with a specific mandate to develop and support capacity development efforts of the GWP with engagement from GEO Capacity Development Working Group members. This support will be both supply-driven and demand-driven. Some concrete examples are: (i) a task team to contribute to the EOTECDevNet; (ii) a task team to contribute to the further uptake of the urban tool kit; (iii) task teams for the different GEO Flagships

to advise on additional CD approaches, outreach events, and (iv) a task team to organize joint events with the CEOS WGCapD.

We will develop and expand the uptake of GEO Work Programme results by relevant user/stakeholder communities, liaise with representatives of GEO Work Programme activities and the GEO Secretariat to develop and analyze the results of the Joint GWP Mapping exercise and in consideration of GEO engagement priorities to identify, develop, and/or make more discoverable tools and resources that are both "fit-for-purpose" and "fit-for-audience". We will identify opportunities and actively foster collaboration across GWP activities while identifying gaps that could be addressed by new or existing GWP activities.

We will work with the GEO Impact Officer and GWP activities to support the monitoring and evaluation of the impact of the GWP capacity development activities.

We will continue to work with the GEO Knowledge Hub (GKH) team to define capacity development inputs into the GKH Communication, Engagement and Impact Plan. And, we will continue to promote practices consistent with the Open Knowledge Statement.

To provide state-of-the-art CD support to the GWP and GEO Secretariat activities, we will also continue strengthening the CD capacities of the CD-WG members and the GWP community through the CD-WG webinar series and other opportunities for exchange and learning. We will endeavour to create a diverse and inclusive community of practice for current and emerging capacity developers throughout the GEO community.

Successful achievement of future ambitions will be greatly impacted by the availability of a full-time Capacity Development Coordinator, scheduled to be hired by the GEO Secretariat by early 2022.

4 ADDRESSING THE GEO MID-TERM EVALUATION (MTE)

MTE Recommendation #1

The Capacity Development WG will examine the findings and recommendations of the Mid-Term Evaluation report, noting its recommendation to improve targeting and communication surrounding GEO's value added proposition, and the benefits derived by external organizations participating in GEO. We will look to deliver Capacity Development Resources that leverage GEO's convening role and foster greater engagement of current and future members, participating organizations, and associates.

MTE Recommendation #8

Considering that there is also a need to better engage with and integrate Regional GEOs across GEO's governance structure and implementation mechanisms, the CD WG will consider restructuring its governance and leadership to place a stronger emphasis on geographic diversity and inclusivity, especially by ensuring effective communication and collaboration with Regional GEOs. This has the potential to contribute to and enhance the GEO strategy on capacity development.

Also noting the recommendation to “promote opportunities for exchange of best practices and uptake/scaling of successful products that may be developed at a regional or subregional level” we will explore the potential benefit and impact of creating a GEO Capacity Development Community of Practice. This element of our work may potentially create an opportunity for mobilization of resources at regional, national, and local levels as well as leveraging the unique convening power of GEO to lead efforts gathering current and emerging capacity development professionals to meet, exchange information, organize meetings, and share materials.

ANNEX

Preliminary Results and Interpretation of the Capacity Development Section of the Joint GEO Work Programme Mapping

From preliminary analysis of initial survey responses, we see there is a significant amount of interest in sharing Capacity Development resources across the GEO Work Programme, and a noted need to increase or improve collaborations across GWP elements that may not normally collaborate on resource sharing. Survey responses suggest that collaborating across some Work Program flagships, initiatives, and community activities could be increased, in order to leverage CD resources that could be produced and shared by multiple WP components, especially in a “GEO Toolkit.”

Overall, there is an opportunity to identify and curate CD resources that bridge the gap between current and desired levels of capacity development, as indicated by WP components -- and that ideally this will be carried out in close collaboration with Regional GEOs.

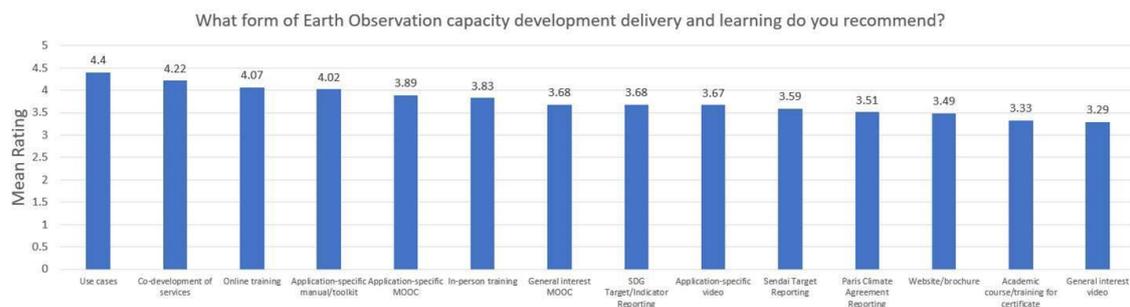
There are a substantial amount of CD resources already in the GEO community – how can we make sure we know what is already available and make it findable and accessible before investing (often limited) funds/resources in developing new CD tools?

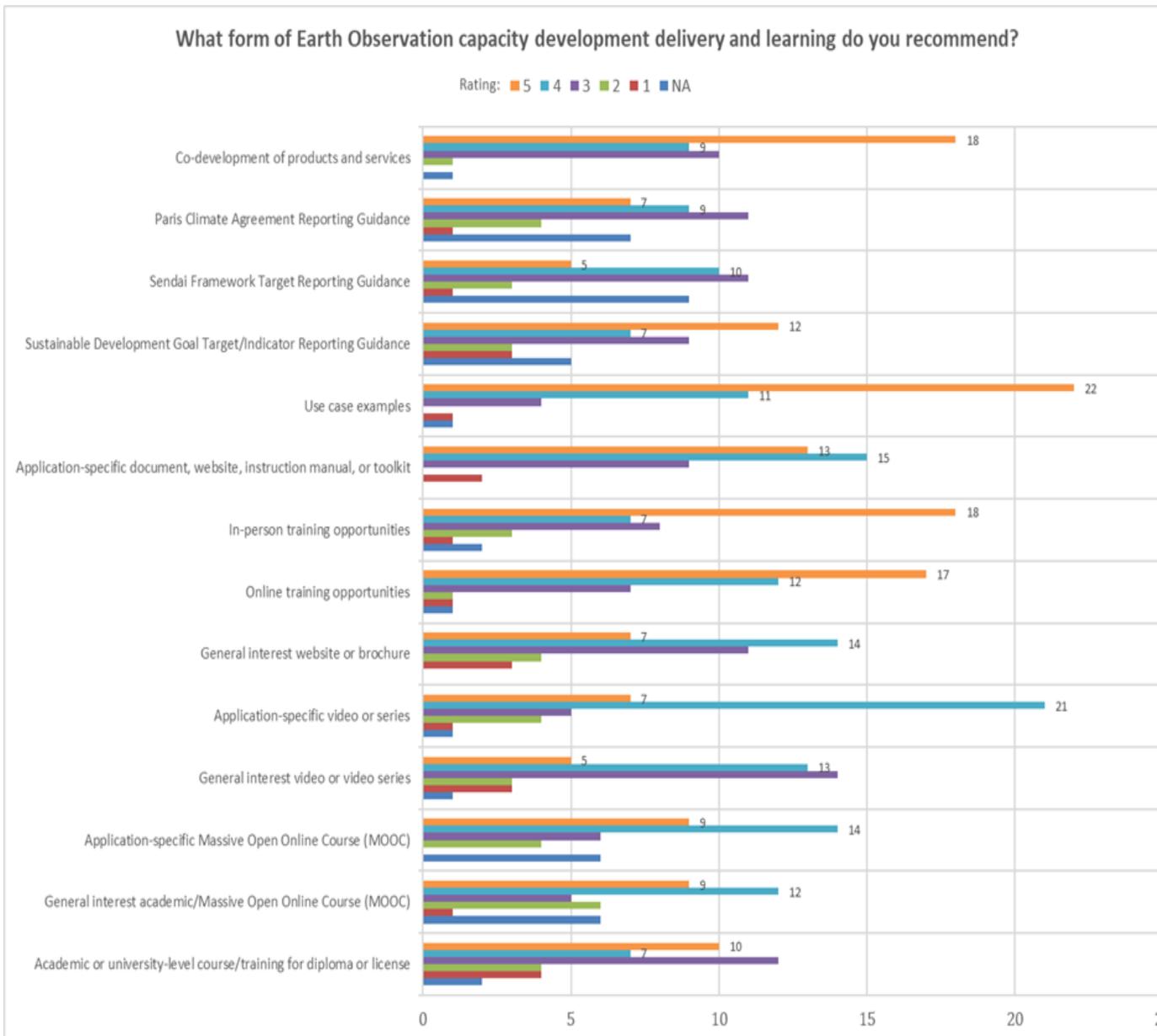
We are already gaining important insights into optimal delivery methods, levels of competency, synergies with disaster risk reduction, and other indicators of gaps and needs in capacity development throughout the GEO Work Programme. We look forward to digging deeper into the results of this survey, and will be using these insights to guide the next steps of GEO CD WG activities.

Assessment of current best practices in EO Capacity Development delivery

Survey participants were asked to indicate their opinion on effective capacity development delivery methods; this question focused on recommendations rather than identifying currently available resources, with the intention to identify what method of delivery future outputs of the CD WG will be most responsive to community needs and preferences.

Initial analysis reveals that use cases, co-development of services, online training, and application-specific toolkits are promising forms of resource delivery and uptake.

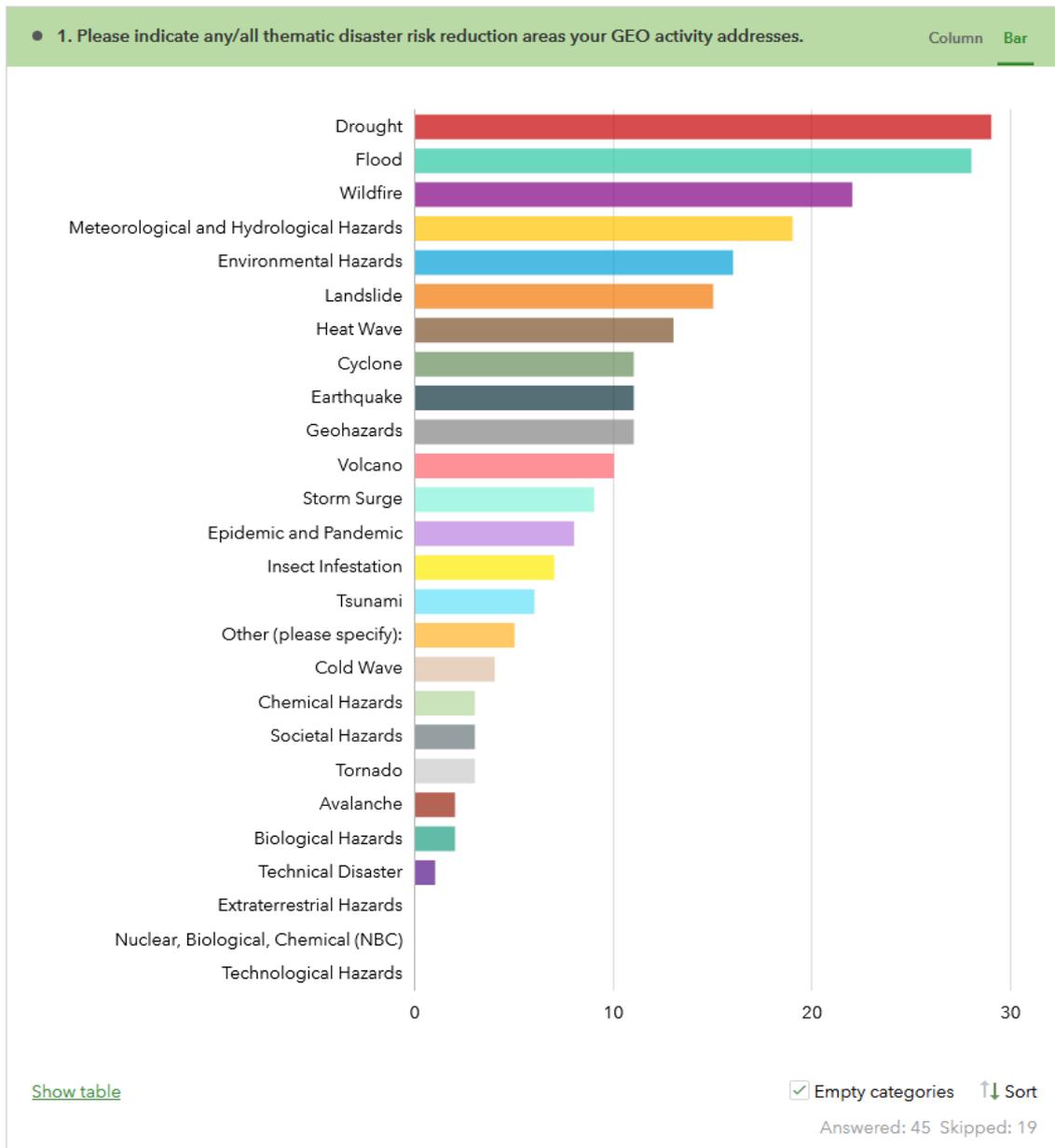


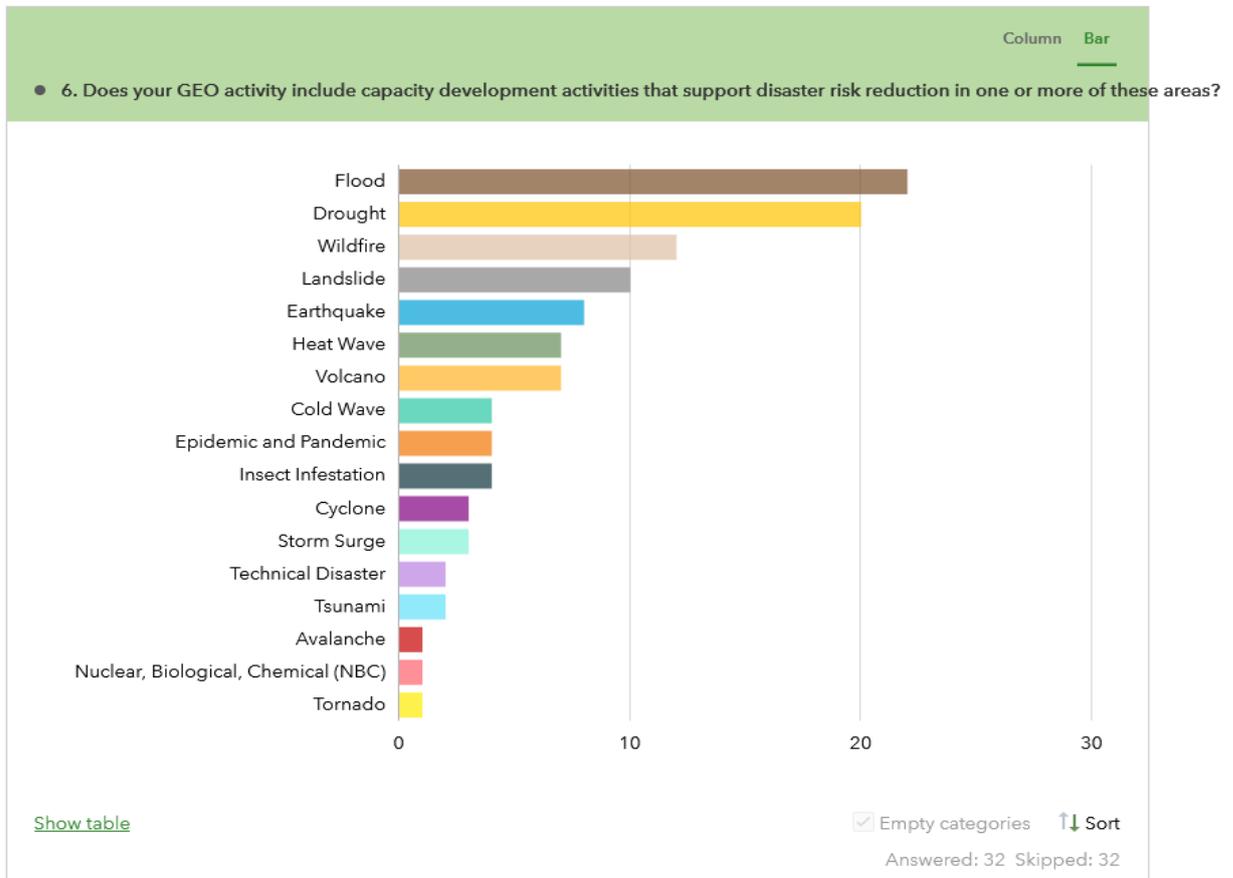


GEO Activities engaging in Capacity Development for Disaster Risk Reduction

Capacity Development is an essential element for supporting both Climate and DRR activities – it is how we empower our community with the tools it needs to maximize the impact and utility of Earth Observations.

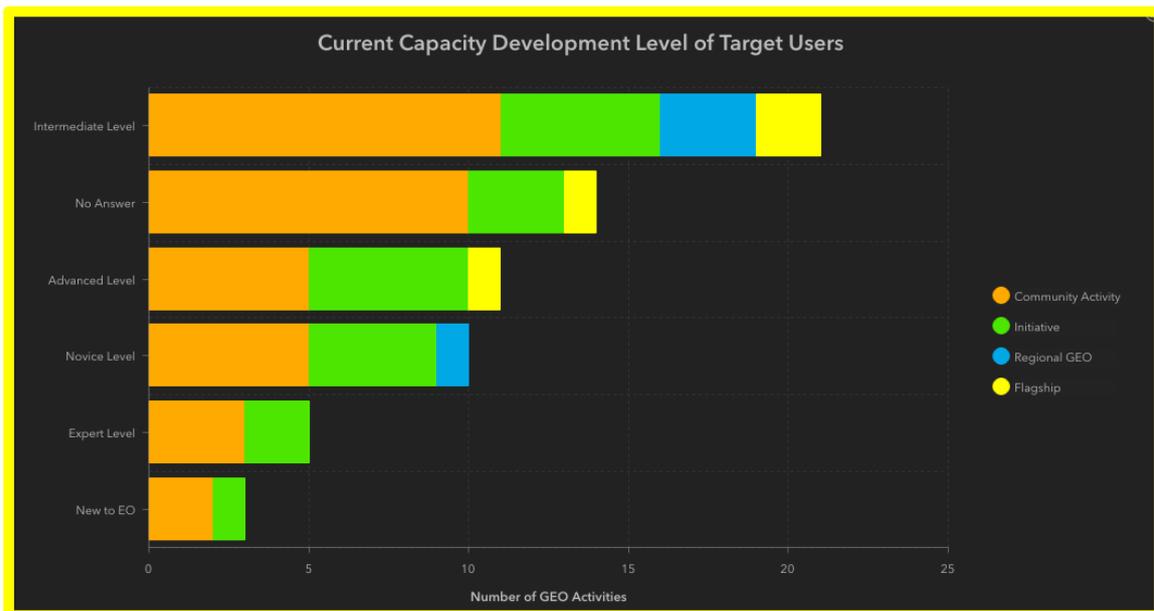
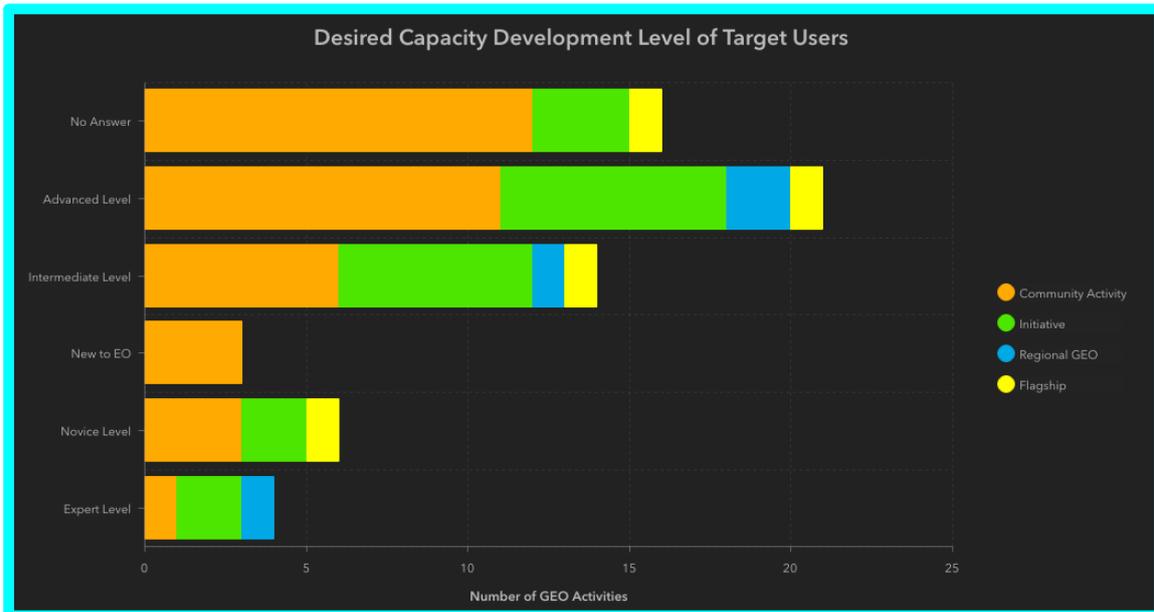
This question enables us to cross analyze the Capacity Development section with the Disaster Risk Reduction section. In both cases, we see that drought, flood, and wildfire are both addressed by many GEO activities, as well as the highest reporting themes with capacity development resources. Ensuring effective collaboration among the diverse GEO activities engaged in CD for DRR areas will be an important element of future work.



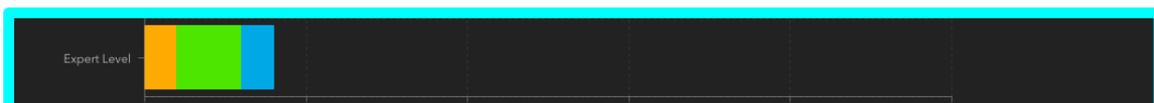
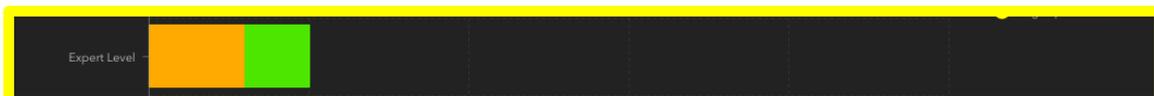


Assessment of current CD resources and future needs, by level of resource and GWP category/type

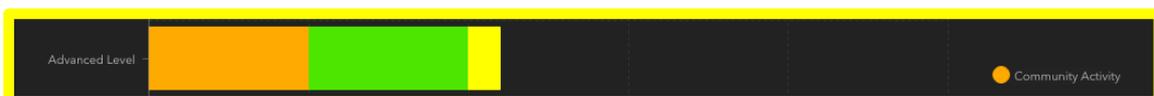
This question was designed to inform the Capacity Development WG about the **Desired Capacity Development Level (highlighted in blue)** vs **Current Capacity Development Level (highlighted in yellow)** of GEO activity target users. Further analysis of this will inform the CD WG by a cross analysis of which kind of GEO activity (flagship, initiative, community activity, regional group) has resources to share or are in need of resources, along with the current and desired levels (New to EO, Novice, Intermediate, Advanced, Expert) of capacity development in the GEO Work Programme.



Expert Level **Current (top)** vs. **Desired (bottom)**



Advanced Level **Current** vs. **Desired**

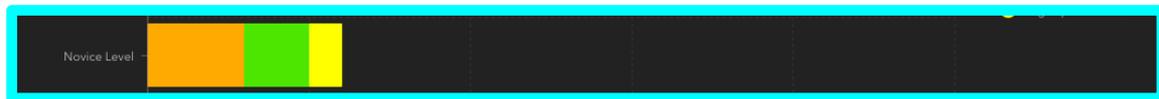




Intermediate Level **Current** vs. **Desired**



Novice Level **Current** vs. **Desired**



Beginner (New to EO) Level **Current** vs. **Desired**



Assessment of collaboration levels

Understanding the current level of collaboration across the GEO Work Programme is an important indicator of potential leverage areas, as well as gaps that could be addressed and filled by targeted coordination and collaboration.

