

Report of the Programme Board

This document is submitted to the Executive Committee for information.

1 INTRODUCTION

This document provides a summary of the 17th Programme Board meeting, which was held on 11-12 June 2020 via videoconference.

Key outcomes included the following:

The Programme Board:

- Will develop a document summarizing the impacts and opportunities for the GEO Work Programme arising from the COVID-19 pandemic;
- Endorsed the GEO Knowledge Hub implementation plan for presentation to the Executive Committee with a recommendation that it be approved, taking into account the recommendations from the GIDTT report and described in the cover note;
- Expressed appreciation for the considerable efforts of the team that organized the 2020 GEO Virtual Symposium which included the Symposium subgroup, the Secretariat, and members of the GEO community;
- Noted the initial results of the GEO-AWS Earth Observations Cloud Credits Programme and requested additional reporting by the Secretariat on this and the other cloud computing programmes coordinated by the GEO Secretariat;
- Removed limits on commercial sector members from the terms of reference of the four Working Groups;
- Approved the terms of reference of the Programme Board Private Sector Engagement Subgroup; and
- Discussed the possibility of holding a fourth meeting in 2020, depending on decisions regarding GEO Week 2020.

2 DISCUSSION ON COVID-19

At the request of several Programme Board members, the 17th meeting included a discussion of the pandemic and the challenges and opportunities it has created for GEO. Board members recognized the leadership that had been shown by the GEO Health Community of Practice in organizing well-attended weekly teleconferences to share examples of the use of Earth observations for understanding and responding to COVID-19, as well as the changes to the Earth system in response to human behavioural changes. The Board also noted the call issued by the Secretariat to the GEO community for similar examples, which have been made available on the GEO website. While the Programme

Board felt that these efforts were laudable, there was a need for a more formal statement from GEO.

The Programme Board proposed that a document, with recommendations be prepared for discussion at the 2020 Plenary, or by the Executive Committee should the Plenary not be held this year. This document should examine the consequences of the pandemic on the GEO Work Programme, including though not limited to:

- Impacts on the engagement priorities;
- Emerging needs to strengthen certain GEO Work Programme activities or to add new activities, in light of what has been learned; and
- Opportunities to accelerate connections with non-Earth observation data, such as socio-economic, statistics and mobile phone data, as well as connections with the commercial sector.

In preparing this document, the Programme Board wanted to ensure that existing subgroups and engagement teams be used, especially with regard to contact with GEO Work Programme activities. A recommendation on the specific process for preparing the document for Plenary was requested from the Programme Board co-chairs and the Secretariat by the end of June.

3 GEO KNOWLEDGE HUB IMPLEMENTATION PLAN

A first version of the GEO Knowledge Hub implementation plan had been presented to the Programme Board at its 16th meeting in February 2020. At that time, it was clear from the discussion that there were divergent views within the GEOSS Infrastructure Development Task Team (GIDTT) regarding the adequacy of the plan. While the initial schedule had proposed that the plan be brought to the 51st meeting of the Executive Committee, the Programme Board believed that additional time was required to reach a consensus on the GIDTT and so a revised schedule was presented to the Board by the Secretariat. This revised schedule was endorsed by the Programme Board.

A new version, 4.1, of the implementation plan was circulated to Programme Board members three weeks in advance of the 17th PB meeting. This was later accompanied by a separate report from the GIDTT, which made several recommendations concerning the development of the GEO Knowledge Hub, principally that approval for continued development be given on an annual basis and following a review of progress by the Programme Board and the Executive Committee. The report also agreed that the next phase of development of the GEO Knowledge Hub, to June 2021, should proceed. The recommendations were agreed by the members of the GIDTT, including the Secretariat.

Following discussion of the documents, the Programme Board endorsed the GEO Knowledge Hub implementation plan for presentation to the Executive Committee, with a recommendation that the plan be approved.

Further details of the implementation plan, the GIDTT recommendations, and the Programme Board decision may be found in document ExCom 52.5 GEO Knowledge Hub Implementation Plan.

4 GEO 2020 VIRTUAL SYMPOSIUM

One of the many consequences of the COVID-19 pandemic for GEO was that travel restrictions were imposed by many countries around the time that the planning for the 2020 GEO Symposium was getting started. The Programme Board Symposium Subgroup, following consultation with Board members, accepted a recommendation from the Secretariat that the meeting be shifted to an online (“virtual”) format. This required some changes to times and dates, with the result that the Symposium went from three full days to five half-days and to moving the 17th Programme Board meeting, originally planned for the week of the Symposium, to the week prior.

The Symposium Subgroup looked at good practices used by other meetings, notably the successful virtual meeting of the CEOS Strategic Implementation Team (SIT). A major challenge during the organization was the need to find an application that would permit easy interaction between the session panellists and the participants, while being stable, accessible to all countries, requiring minimal bandwidth, and easy to manage. This challenge only intensified as the numbers of registrants climbed, at first in the hundreds, then above one thousand. After much testing and discussion, the Subgroup settled on a solution which used the standard Secretariat videoconference app (BlueJeans) for the panellists, two video streaming platforms (Youtube and CDNvideo) to allow participants to follow the live discussions, and an audience engagement app (Slido) to enable participants to ask questions to panellists.

As always, the GEO community rallied to the call for session organizers and speakers. The available sessions soon filled and there were additional requests for presentations and sessions that could not be accommodated. The Programme Board supported extending the Symposium in some form as a continuing webinar series and recommended that, should the Secretariat have the capacity to offer such a series, the Programme Board engagement teams and the Capacity Development Working Group be asked to collaborate on the series.

The total number of registrants for the 2020 Symposium exceeded 1,600. For comparison, a typical number of registrations (not actual attendees) for an in-person Symposium are about 200-300. A survey will be sent to Symposium registrants in the following week to understand the demographics, interests, and level of satisfaction of participants with this new format. Session facilitators and presenters will also be surveyed separately. As well, the Secretariat will analyse data from the streaming and engagement apps to determine actual usage. This information is expected to be quite valuable for the organization of future GEO events.

The Programme Board thanked the Symposium Subgroup members for their dedicated efforts in planning the Symposium, notably the co-chairs Kerry Sawyer and Kathy Fontaine, as well as the Secretariat, especially Wenbo Chu, Rik Baeyens, and Thea Mills.

5 GEO CLOUD COMPUTING PROGRAMMES

The Secretariat provided an update on three cloud computing programmes that have been launched in response to offers from commercial firms:

- GEO-Amazon Web Services (AWS) Earth Observation Cloud Credits Programme;

- GEO-Google Earth Engine (GEE) License Programme; and
- GEOBON-Microsoft: Essential Biodiversity Variables (EBVs) in the Cloud.

The first of these, GEO-AWS, is nearing completion of its first year of implementation. The Secretariat reported that, of the 20 projects approved to receive credits, 11 have been active and are producing results, while the other nine have encountered difficulties.

Examples of initial results included:

- Automated monitoring of illegal deforestation using the Brazilian data cube;
- Integration of diverse data streams to inform ecosystem management in Costa Rica;
- Installation and deployment of the Open Data Cube in Ukraine to support crop classification and vulnerable habitat identification;
- Groundwork being put in place to monitor human settlements and environmental impacts in India; and
- Monitoring of changes in the Horalazim wetland in Iraq.

More broadly, the programme is demonstrating the value of a zero-download model to a new range of users, as well as increased consistency of results. The open science approach promoted in the programme is also leading to greater collaboration and is enabling broader uptake, especially in developing countries where institutional capabilities do not allow for hosting and administering the required infrastructure.

Issues encountered to date have ranged from impacts from COVID-19, personnel changes, infrastructure difficulties, costs associated with other software (e.g. GIS), and some scientific issues particular to certain projects. The Secretariat and AWS have monthly teleconferences in which they discuss progress and look for solutions for the lagging projects.

The closing date for applications to the second programme, GEO-GEE, was 15 April 2020. In response to a request from the Secretariat, seven Programme Board representatives and four other individuals from the GEO community volunteered to serve as expert reviewers, in addition to two Secretariat staff.¹ The review process was nearing completion at the time of the report. The projected launch date is 1 July.

Regarding the third programme, EBVs in the Cloud, the call for proposals was issued on 1 May 2020, with a deadline of 5 June. A total of 60 proposals were received, out of which the top four or five will be selected, the actual number dependent on the requested funding. The selection committee will be composed of 2 GEO BON representatives, 2 representatives from Microsoft AI for Earth, and one or two representatives of the Programme Board.

The Programme Board appreciated the information provided by the Secretariat but indicated their interest in greater detail about the projects. The Secretariat was asked to make available to Programme Board members the mid-term reports from each of the GEO-AWS projects. The Board also requested a report from the Secretariat on the

¹ A.Craddock, K.Fontaine, E.Frazier, A.Gutierrez, A.Kabo-Bah, S.J.Khalsa, B.Killough, S.Marsh, A.Milne, A.Siquiera, F.Van den Bergh.

lessons learned to date from the programmes and plans for transitioning the projects at the end of the programmes. Finally, the Programme Board requested that the Data Working Group consider looking into the potential for misuse of data collected from users of cloud computing services.

6 FOUNDATIONAL TASK WORKING GROUPS

Since the 16th Programme Board meeting in February 2020, the terms of reference for the four Working Groups were approved by the Executive Committee and the call for nominations was announced by the Secretariat. The response to this call greatly exceeded expectations: nominations and expressions of interest were received from more than 338 individuals from 47 GEO Members, 26 Participating Organizations, 5 Associates, and four individuals from non-Member countries.

The terms of reference of all four Working Groups require that members be nominated by a GEO Principal or by the Programme Board. In cases of individuals expressing interest in nomination, the Secretariat referred them to their GEO Principal. By the end of the nomination deadline, 302 individuals had received nominations.² Those not able to obtain a nomination from a GEO Principal are being referred to other GEO Work Programme activities or are being placed on a waiting list until the Working Groups are established and their capacity to accept additional members is determined.

The distribution of members across the Working Groups is as follows:

| | |
|---------------------------------------|----|
| Capacity Development Working Group | 53 |
| Climate Change Working Group | 95 |
| Disaster Risk Reduction Working Group | 90 |
| Data Working Group | 64 |

The regional distribution of members is shown below:

| | |
|--------------|-----|
| Africa | 55 |
| Americas | 115 |
| Asia-Oceania | 37 |
| CIS | 3 |
| Europe | 92 |

The first teleconferences of the four Working Groups were held in the period between 26 May and 9 June. Some common elements, including introductory presentations on GEO, use of subgroups, co-chair election procedures, etc., were used across the Working Groups, while other elements were specific. Three of the four Working Groups chose to hold two initial teleconferences to maximize participation in various time zones. Follow-

² The numbers are derived from Programme Board document PB-17.06 and were valid at the time of preparation. The current numbers may have changed slightly due to several Programme Board nominations and other adjustments.

up questionnaires were used to gather additional data about participants to share with the groups, gauge interest in subgroups, and request self-nominations as co-chairs.

A key decision item before the Programme Board at this meeting concerned the participation of individuals from commercial sector organizations. At its 16th meeting, the Programme Board inserted into the terms of reference of each Working Group a limit on the number of commercial sector members to a maximum of two. The rationale for the limit was to manage potential risks of undue influence on the Working Groups should be number of commercial sector members be excessive. At the time, the number of nominations which would be received was not known and, based on the experience of the previous Paris Agreement and Disaster Risk Reduction subgroups, might have been in the order of 10 to 20. At the end of the nomination period, the actual number of nominations by GEO Principals of individuals associated with commercial sector organizations was as follows (percentages are out of the total number of nominations by GEO Principals):

| | | |
|---------------------------------------|---|-----|
| Capacity Development Working Group | 8 | 15% |
| Climate Change Working Group | 5 | 5% |
| Disaster Risk Reduction Working Group | 9 | 10% |
| Data Working Group | 5 | 8% |

The Secretariat proposed that the limit be raised to 10 per Working Group, which would allow for all nominations to be accepted while retaining a common limit. The Programme Board discussed the merits of a numeric limit versus a percentage limit, but a consensus emerged to remove the limit entirely. The Board came to the view that the risks from commercial sector involvement were low and could be managed by the Working Group co-chairs and the Secretariat coordinators. The Programme Board also asked that the Secretariat monitor commercial sector involvement and raise any issues that might arise to the Board.

7 GEO SUBGROUPS AND ENGAGEMENT TEAMS

The Programme Board received reports from its four subgroups, which have continued to function to varying degrees during the pandemic.

The Private Sector Engagement Subgroup reported that they had met twice and had discussed their terms of reference and initial work priorities. Draft terms of reference were presented and were approved by the Programme Board without changes (see Annex A). The terms of reference include the request from the Executive Committee regarding attention to small, medium and micro-sized enterprises (SMMEs). Regarding work priorities, the subgroup noted that while the “private sector” in GEO includes all non-governmental organizations, the initial focus would be on the commercial sector. There was agreement that the group would focus on concrete activities to support GEO and the GEO Work Programme in particular, rather than on preparing documents. The work would be informed by existing studies and lessons learned from the GEO community. Some specific activity proposals are currently under consideration within the subgroup.

The Urban Resilience Subgroup reported that they had held three teleconferences since their new terms of reference were approved at the 16th Programme Board meeting. Subgroup members have taken steps to engage external organizations active on urban issues, including the European Innovation Partnership on Smart Cities and Communities (EIP-SCC) and the Global Resilient Cities Network. One of the aims is to include representatives of these other initiatives as part of the subgroup, which has already happened in the case of EIP-SCC. The Subgroup is also working to include representatives of the key urban-related GEO Work Programme activities, of which GEO Human Planet is already participating actively. Regarding a proposed exchange of letters between the GEO Secretariat and UN-Habitat, this process has been put on hold for now due to UN-Habitat accepting letters only if they are related to COVID-19 or direct funding. In the meantime, GEO and UN-Habitat, among others, are continuing development of an Earth observations toolkit for SDG 11 (Sustainable Cities and Communities). The toolkit is intended to be integrated into both the UN-Habitat portal and the GEO Knowledge Hub. Linkages between urban resilience and disaster risk reduction (DRR) activities have been facilitated by the GEO Secretariat, including potential contributions of Subgroup members to the UN Global Assessment Report on DRR. Subgroup members and the Secretariat have also been active in developing a new GEO Community Activity on Climate Change Impacts on World Heritage Cities. This activity has been developed by Greece and, with the support of the Secretariat, has the support of the World Heritage Centre of the UN Educational, Scientific and Cultural Organization (UNESCO). A call for additional participants in the new Community Activity was announced during the GEO Symposium.

The Equality, Diversity and Inclusion (EDI) Subgroup reported that they had held their first teleconference in mid-May. Following a call to Regional GEOs to increase the diversity of Subgroup members, five additional nominations were received, four from Africa and one from the United States. The Subgroup has begun to collect and analyse available datasets on GEO participation, including GEO Work Programme participants, Working Group nominations, GEO Principals and Alternates, GEO Symposium participants, and data from the recruitment of previous GEO Directors. Subgroup members also drafted questions related to gender, professional status, ethnicity, nationality, caring responsibilities, and impairments for inclusion in the 2020 GEO Symposium survey.

The chair of the Awards Subgroup reported that the 2020 Awards process would be launched during the opening session of the GEO Symposium. It would follow the same process as the previous year.

The Programme Board also discussed the role of the Engagement Teams which had been set up at the 16th meeting. Noting that the teams were delayed in starting due to the pandemic and to the focus on the Symposium planning, the Programme Board agreed that the teams should play an important role this year. The Secretariat was asked to propose a set of questions to guide Engagement Team interaction with the GEO Flagships and Initiatives. Once consensus is reached on the questions, calls will be scheduled with the leads of each of the Flagships and Initiatives, Engagement Team members, and the Secretariat.

8 OTHER BUSINESS

The Programme Board agreed that its 18th meeting, which was originally planned to be held in Ghana, would now be held as a videoconference. Dates for a potential fourth (virtual) meeting in 2020 would be identified, taking account of the Executive Committee meeting schedule and decisions regarding GEO Week 2020. The Board recognized the need to accommodate different time zones in setting virtual meetings.

The Programme Board supported the offer from China to host the 2021 GEO Data and Knowledge Week.

9 ATTENDANCE AT THE 17TH PROGRAMME BOARD MEETING

9.1 Present (via video- or tele-conference)

9.1.1 *GEO Members*

Australia, Canada, China, European Commission, Finland, France, Germany, Ghana, Greece, Italy, Japan, Norway, Pakistan, South Africa, United Kingdom, United States.

9.1.2 *Participating Organizations*

CEOS, ESA, ESIP, GODAN, GRSS, IAG, IEEE, IUGG, MRI, OGC, SWF, UN Environment.

9.2 Absent

9.2.1 *GEO Members*

Cambodia, Kenya.

9.2.2 *Participating Organizations*

COSPAR, POGO.