

## **Report of the Programme Board**

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

### **1 INTRODUCTION**

This document provides a summary of the outcomes of the 19<sup>th</sup> Programme Board (PB) meeting, held by videoconference on 26-28 January 2021, as well as other activities of the PB since the previous report.

Among the key outcomes of the meeting, the PB:

- Approved its Plan of Work for 2021 as a living document;
- Indicated its intent to develop a strategy for engagement with Regional GEOs;
- Confirmed that the Engagement Team process with GEO Flagships and Initiatives was valuable and will be continued;
- Endorsed the engagement plan for urban resilience for presentation to the Executive Committee, while providing comments for its further strengthening;
- Endorsed the proposed GEO statement on Equality, Diversity, and Inclusion for presentation to the Executive Committee;
- Approved the terms of reference for a 2021 GEO Symposium Subgroup;
- Endorsed the proposed GEO statement on Open Science for presentation to the Executive Committee;
- Agreed to participate in the selection of projects for the GEO-Microsoft Planetary Computer Programme, with several PB members volunteering to participate in the selection panel; and
- Welcomed the proposal for a 2<sup>nd</sup> GEO Climate Workshop.

It should be noted that the 19<sup>th</sup> meeting used a new format in which each session was held at two different times of day (“A” and “B” sessions). This was to avoid the need for PB members to attend during the hours of midnight to 6:00 am. The new format was necessary now that PB members are located across a span of 22 time zones. While the format did require that some issues be discussed a second time to address differences between the A and B sessions, overall, it was well received by PB members.

### **2 CO-CHAIR AND OBSERVER ELECTIONS**

The GEO Rules of Procedure require that elections be held for PB co-chairs whenever the term of a PB member who is a co-chair is completed. The term of the European Space Agency (ESA) concluded in December 2020 and so a co-chair election was required.

Since the remaining two co-chairs represented GEO Members, the open co-chair position was reserved for Participating Organization PB members.

Further, the Rules of Procedure require that all three seats of Participating Organization Observers to the Executive Committee be opened for renomination each year.

A call for nominations to these positions was sent to PB members on 12 November 2020, with reminders sent on 19 November, 23 November, and 15 December. In response to the call, a total of three nominations were received for the Observer positions and one for the co-chair position. As a result, elections were not conducted as the number of nominations was equal to the number of vacant positions.

The new PB co-chair is Anthony Milne of the IEEE Geoscience and Remote Sensing Society (GRSS). His term will extend to the end of 2023. The other two co-chairs remain in place, these being Andiswa Mlisa of South Africa and Yana Gevorgyan of the United States.

The Participating Organization Observers to the Executive Committee for 2021 are the Committee on Earth Observation Satellites (CEOS), GRSS, and the International Association of Geodesy (IAG).

### **3 PROGRAMME BOARD 2021 PLAN OF WORK**

The GEO Secretariat presented the 2021 Plan of Work on behalf of the PB co-chairs. It is provided as Annex A to this document.

The use of a plan of work as both a summary of, and a guide to, the key work items for the PB was introduced by the PB co-chairs at the 16th PB meeting in February 2020. While not identifying specific timelines and deliverables, the plan did provide an overview of all key issues raised during the previous year and how they would be addressed by the PB. In most instances, individual work items were referred for action to the various PB subgroups, engagement teams, Foundational Task Working Groups (WGs), or the Secretariat.

The lack of progress to date in engaging the Regional GEOs was noted in the presentation of the plan and by PB members. It was generally acknowledged that a new strategy was required and that this should be a priority. The PB co-chairs indicated that they would be personally involved in moving this forward. It was also suggested that the plan be revisited once the GEO Lead Co-Chair goals and objectives for 2021 have been approved.

### **4 GEO WORK PROGRAMME MONITORING**

The Secretariat summarized the status of the process for monitoring GEO Work Programme (GWP) activities. The process was introduced in 2020 centred on a set of “Engagement Teams” (ETs) comprised of PB members and supported by the Secretariat. This process had several objectives:

- Address weaknesses or gaps identified during the 2019 review of the implementation plans;

- Provide assistance to the GWP activities on such matters as resource mobilization, communications, etc.;
- Facilitate connections with policy contacts, scientific and technical experts, user communities, and so on;
- Strengthen linkages to engagement priorities or with other GWP activities;
- Assist with the sharing of data, services, tools, methods, etc. with the broader community, including via the GEO Knowledge Hub, the GEOSS Platform, or other means.

The approach had two key components:

1. Identification of a small set of key objectives for each GEO Flagship and Initiative, developed collaboratively with the activity leads, ET members, and the GEO Secretariat; and
2. Implementation through small teams of PB members who, with Secretariat staff, would serve as the primary contact points between the GWP activity and the PB.

The ETs largely followed the structure of the Review Teams in 2019. The number of teams was decreased from ten to eight and the number of Flagships and Initiatives per team was kept relatively small (three or four) to minimize the workload on ET members. Some ET members chose to join more than one team. ET membership was open to both principal and alternate PB representatives, though not to non-PB members since the ETs were intended as a means to implement core responsibilities of the PB. Members of two of the ETs (Climate Change and Disaster Risk Reduction) were cross appointed to the WGs of the same names to strengthen the linkages between the PB and the WGs. The PB members of the Urban Resilience Subgroup also served as the Urban ET.<sup>1</sup>

On the first component of the ET process, agreement on key objectives, these were agreed by 12 of the 23 Flagships and Initiatives, were in consultation with another 5 and were still in development for the remaining 6. This step had not yet begun with the Regional GEOs by the end of 2020. On the second component, the teleconferences with Flagship and Initiative leads, calls were held with 20 of the 23 activities.

The feedback received from the Flagship and Initiative leads, as well as from the ET members, was uniformly positive. ET members who participated in the calls stated that they had a better understanding of the progress being achieved and the challenges faced by the activities. ET members also provided advice and offers of specific assistance during the calls. This positive assessment of the ET process was confirmed during the PB meeting.

Several areas for improvement were also suggested during the meeting. These included: focusing on fewer topics for discussion, exploring the use of calls with multiple GWP activities, strengthening the linkages between the ETs and the WGs, and posting the recordings of the calls for reference by PB members that could not attend. The ET structure will be retained for 2021, although there will be a renaming of two ETs (Climate

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<sup>1</sup> The Urban Resilience subgroup also includes participants who are not PB members, but the latter are not eligible to serve on the Urban ET.

Change and Disaster Risk Reduction) to better reflect the sectoral representation and small changes in the assignment of GWP activities to the teams. There will also be a call for new ET members given the changes in PB members.

## 5 REPORTS FROM SUBGROUPS

### 5.1 Urban Resilience Subgroup

Evangelos Gerasopoulos (Greece), co-chair of the Subgroup, presented the draft engagement plan to the 19<sup>th</sup> PB meeting.

Following the discussion at the 53<sup>rd</sup> Executive Committee meeting of the proposal to make urban resilience a fourth GEO engagement priority, the Urban Resilience Subgroup, assisted by the Secretariat, started work on an engagement plan for urban resilience, as directed by Action 53.1.

Response from PB members was very positive, with several indicating their interest in joining the proposed Working Group. PB members posed several questions to the Subgroup and recommended that the Subgroup clarify sections regarding the potential benefits for GEO and possible resource implications of recognizing this as an engagement priority.

The PB endorsed the engagement plan for presentation to the Executive Committee. The engagement plan, revised to address the PB comments, is provided as document ExCom-54.11.

### 5.2 Equality, Diversity, and Inclusion Subgroup

Nathalie Pettorelli (United Kingdom), Subgroup chair, presented two items on behalf of the Subgroup: a report on the status of diversity in GEO and a proposed GEO statement addressing equality, diversity, and inclusion (EDI).

The report described gender and geographical distribution in six areas where data could be obtained:

- GEO Secretariat staff (gender only);
- Programme Board member representatives;
- Foundational Task Working Group members;
- Speakers and participants at recent GEO events;
- Applicants and recipients of GEO awards; and
- Secretariat Director recruitment.

In general, the report noted that a much higher proportion of GEO participants across the areas examined were based in Europe and North America and were men. Due to the limitations of the data examined, it was not possible to determine if these findings differed significantly from the sector as a whole, whether they had changed over time, or the causes of the observed proportions.

The report went on to propose a set of recommendations for initial action on the findings; these recommendations addressed the following areas:

- Improvements in data collection regarding diversity of GEO participants;

- Increasing the diversity within the Subgroup;
- Various actions aimed at increasing the diversity of WG and PB participants;
- Improving the visibility of under-represented groups in GEO events;
- Measures to increase diversity within the GEO Secretariat; and
- Connecting with other EDI initiatives in partner organizations.

One of the specific recommendations was the development and promotion of a diversity statement from GEO that clearly defines expectations in terms of gender, geographic, and generational diversity within GEO entities. The draft statement developed by the Subgroup is presented as document ExCom-54.9.

The PB welcomed the report as a significant step for GEO. However, due to limitations of the data that the Subgroup analysed, conclusions could not be drawn regarding causes or trends. It was recommended that the report be revised to reflect these limitations and to include definitions of key terms. The report could then serve as a baseline for comparison as better data are collected following implementation of the Subgroup's recommendations.

The PB endorsed the proposed EDI statement for presentation to the Executive Committee, with the requested amendments.

### 5.3 2021 GEO Symposium Subgroup

The Secretariat presented draft terms of reference for a subgroup to design and implement the 2021 GEO Symposium in collaboration with the Secretariat.

Given the ongoing pandemic restrictions, PB members expressed their expectation that the event would once again need to be held in an online format. It was suggested that the format not repeat that of the 2019 Symposium which, while acknowledged as successful, came at a time when such events were less frequent. It was observed that now there is more competition for participants by many online events and so the Subgroup will need to use their creativity to attract participants.

The PB approved the terms of reference and asked the Secretariat to issue a call for members of the Subgroup.

### 5.4 Awards Subgroup

Kathy Fontaine (ESIP) presented, on behalf of the Awards Subgroup, the process and criteria used in the selection of GEO Awards recipients. While the item was proposed as an information item, it was added to the discussion at the request of Germany. Ms Fontaine noted that the Subgroup had planned to present another document for decision, but that document had not been completed due to low participation in the Subgroup.

The European Commission raised a concern about the lack of a step in the process for an “institutional check” on the proposed award winners selected by the Subgroup. It was suggested that such a check could be performed by either the PB or by the Executive Committee. Ms Fontaine responded that the process agreed by the PB at its 15<sup>th</sup> meeting was that the nomination packages of the proposed award recipients would be sent to the PB co-chairs for a procedural review only. The packages could also be made available to other PB representatives on request. The rationale for this process was that having

another body review all nominations would essentially duplicate the task of the Subgroup and thereby undermine its role.

Strong views on both sides of this issue were expressed, with those seeking an institutional check largely participating in the A sessions, with many B session participants being opposed to implementing this change. As there was no consensus for changing the process, the process agreed previously by the PB remains in effect.

### 5.5 Items for Information

The following documents related to the Private Sector Subgroup and the Pacific Islands Advisory Group were distributed to PB members for information but were not discussed during the meeting:

- Industry Track 2020 Results
- Private Sector Subgroup Work Plan
- Pacific Islands Advisory Group (PIAG) Terms of Reference
- Report from the PIAG.

## 6 GEO FOUNDATIONAL TASKS

### 6.1 Capacity Development Working Group

Markus Konkol (University of Twente, ITC) presented a draft GEO Statement on Open Science on behalf of the Capacity Development WG and the drafting team for the statement. Mr. Konkol described the scope of Open Science as defined by the team, the process for developing the statement, and the contents of the statement itself.

PB members responded very positively to the proposal. Several suggestions were made to improve the statement, particularly with regard to recognition of the diversity of forms of knowledge, expectations on open access publishing of scientific papers, and inclusion of references to other sets of complementary principles. Mr. Konkol agreed that the drafting team would review the suggestions and address them where feasible. However, he reminded PB members that the statement itself was a first step and that to put it into practice would likely require GEO to establish policies that would provide guidance on the implementation of the statement in the GEO context.

The PB endorsed the statement for presentation to the Executive Committee, with a request that the Capacity Development WG consider including references to the [UNESCO Recommendation on Open Science](#), the [TRUST Principles](#) and the [CARE Principles](#), and to consider whether changes are needed to address the relevance of the statement to models, methods, machine learning, and artificial intelligence.

### 6.2 GEO-Microsoft Cloud Credits Programme

The Secretariat provided an introduction to the latest GEO cloud computing collaboration, based on an agreement between the Secretariat and Microsoft's Artificial Intelligence for Earth programme. This follows in the steps of three similar programmes with Amazon Web Services, Google Earth Engine, and a separate programme with Microsoft that focused on the GEO Biodiversity Observation Network and its Essential Biodiversity Variables. In the new programme, Microsoft has agreed to provide in-kind

contributions of cloud credits and technical support of up to USD 1 million, plus cash grants to projects for a total of USD 550 000. The programme would be limited to GWP activities and would need to be completed within one year.

As with the previous cloud computing programmes, PB members were invited to volunteer as reviewers on the project selection panel. PB welcomed the new programme and six PB members volunteered to serve as reviewers during the meeting. A further call was issued following the meeting for additional reviewers.

Several suggestions were noted during the discussion, including a request to examine the long-term benefits arising from the programmes, implementing measures to minimize risks of vendor lock-in for participants, and capturing and publicizing lessons-learned and results achieved in the projects.

### 6.3 Climate Change Working Group

The Secretariat presented a Concept Note for a 2<sup>nd</sup> GEO Climate Workshop on behalf of the Climate Change WG. PB members were reminded that one of the specific tasks identified in the WG terms of reference was the organization of a follow-up workshop to the one organized by the PB Paris Agreement Subgroup in 2018. This second workshop was intended to be targeted to a broader policy-relevant audience.

The key objectives of the 2<sup>nd</sup> GEO Climate Workshop would be to:

- Present results of the 2021 mapping of climate-related activities in the GWP, which is being undertaken by the Climate Change WG;
- Foster collaboration with key Earth observation and climate partners;
- Identify gaps and synergies for Earth observations and climate in meeting the needs of policy makers and key partners; and
- Initiate a path forward for climate-related activities in the GWP that would achieve the goals established at the Canberra Ministerial Summit.

The tentative timing of the event is late September or early October 2021. The event was proposed to be held at the GEO Secretariat office in Geneva, if travel were to be permitted, although part or all of the workshop would be held virtually to enable more of the GEO community to attend.

The PB welcomed the proposal but asked that the WG consider having shorter sessions over more days given the likelihood that the event would need to be online. The use of a videoconference application with automated translation was recommended to maximize participation from underrepresented regions. The PB also recommended that the Climate Change WG prepare information on Earth observation applications for climate that could be provided to GEO Members and delegates to the United Nations Framework Convention on Climate Change (UNFCCC) well in advance of the UNFCCC 26<sup>th</sup> Conference of the Parties (COP26) scheduled for November.

### 6.4 Proposed Meeting Schedule for 2021

Dates for the 20<sup>th</sup> and 21<sup>st</sup> PB meetings were agreed as follows:

- 20<sup>th</sup> PB meeting: 18-20 May 2021
- 21<sup>st</sup> PB meeting: 28-30 September 2021

Both meetings are anticipated to be held by videoconference unless circumstances change.

## 6.5 Items for Information

The following documents related to the GEO Foundational Tasks were distributed to PB members for information but were not discussed during the meeting:

- Draft Capacity Development WG Plan of Action
- Draft Disaster Risk Reduction WG Roadmap
- Report from the GEOSS Infrastructure Development Task Team (GIDTT)

## 7 ATTENDANCE AT THE 19<sup>TH</sup> PROGRAMME BOARD MEETING

### 7.1 Present (by teleconference)

#### GEO Members

Australia, Canada, China, Ecuador, European Commission, Finland, France, Germany, Ghana, Greece, Italy, Japan, Kenya, Mexico, South Africa, United Kingdom, United States.

#### Participating Organizations

CEOS, CODATA/WDS, EEA, ESA, ESIP, GRSS, IAG, IEEE, MRI, OGC, SPREP, SWF.

### 7.2 Absent

#### GEO Members

Cambodia, Pakistan.

#### Participating Organizations

UN Environment.

## Annex A

### Programme Board 2021 Plan of Work

#	Work Item Title	Work Item Description	Lead Entity	Decisions and Actions in 2020	Outstanding Issues
1	Engagement and monitoring of GEO Flagships and Initiatives	Promote cross-interaction among related GEO Work Programme (GWP) activities to facilitate horizontal collaboration and integration and to facilitate growth and successful implementation.	Programme Board (PB) Engagement Teams (ETs)	ETs established by the 16 <sup>th</sup> PB meeting (PB-16). ETs held videoconferences with most Flagships and Initiatives in 2020.	Confirm whether to continue the ET process in 2021 and, if so, the structure of the ETs. Renew membership of ETs.  See document <a href="#">PB-19.04</a>
2	Engagement of Regional GEOs	Promote interaction and sharing of lessons learned among Regional GEOs and collaboration between Regional GEOs and other GWP activities.	Secretariat	A Regional ET was established as part of the overall ET structure, but no calls were held with Regional GEOs in 2020 due to Secretariat time/resource constraints.	A new approach is required, which will be formulated following the transition to the new Director.
3	Diversity in GEO and the GWP	Develop and implement a strategy to promote diversity (3G's: Gender, Generation, Geography) within GEO	PB Equality, Diversity, and Inclusion Subgroup (EDI-SG)	The EDI-SG terms of reference approved by PB-16. The EDI-SG has produced a first report on diversity in GEO and has proposed a GEO EDI statement.	Provide guidance to the EDI-SG on further steps. Decide whether to approve the EDI statement for presentation to the GEO Executive Committee (ExCom).  See documents <a href="#">PB-19.07</a> and <a href="#">PB-19.08</a>
4	Private Sector engagement in the GWP	Identify opportunities for mutual benefit through private sector (principally SMME) involvement in GWP activities and private sector use of GWP outputs.	PB Private Sector Subgroup (PS-SG)	The PS-SG was established by PB-16, which also serves as an advisory body to ExCom.	Review of the draft PS workplan.  See document <a href="#">PB-19.13</a>

#	Work Item Title	Work Item Description	Lead Entity	Decisions and Actions in 2020	Outstanding Issues
5	Urban Resilience	Respond to the outcomes of the 2019 PB special session with UN-Habitat.	PB Urban Resilience Subgroup (UR-SG)	An Urban Resilience Task Force was set up following the 2019 special session, which was then formalized in 2020 as a PB subgroup. The UR-SG proposed that urban resilience be recognized as a fourth GEO engagement priority at PB-18 and then at ExCom-53. ExCom requested that the PB and UR-SG prepare an engagement plan on urban resilience for presentation to ExCom-54.	Review of the draft engagement plan.  See document <a href="#">PB-19.06</a>
6	GEO Awards	Recognize outstanding contributions to GEO, in particular to the GWP.	Awards Subgroup (Awards-SG)	The second annual awards process was conducted by the Awards-SG in 2020. PB requested that the Awards-SG document the criteria and process for the awards and consider adding a new category for teams.	Review the criteria and process document. Discuss next steps for a new award category. Renew SG membership.  See document <a href="#">PB-19.10</a>
7	GEO Symposium	Plan GEO Symposium 2021	Symposium SG	Organization of GEO Symposia is undertaken jointly by the Secretariat and the PB through the mechanism of a Symposium SG.	Review the terms of reference for a 2021 Symposium SG. Call for nominations to the SG.  See document <a href="#">PB-19.09</a>
8	Foundational Task Working Groups (WGs)	Provide advice and oversight to the WGs.	WGs	Four WGs were established in 2020 to support Foundational Tasks in the GWP. These were: Capacity Development WG (CD-WG), the Climate Change WG (CC-WG), the Data-WG, and the Disaster Risk Reduction WG (DRR-WG). Membership and governance of the WGs was sorted out in 2020 and the WGs turned to preparing detailed work plans.	Review WG work plans.  See documents <a href="#">PB-19.17</a> , <a href="#">PB-19.19</a> , <a href="#">PB-19.20</a> , and <a href="#">PB-19.21</a>
9	GEOSS Development Foundational Task	Promote integration of the various components of the GEOSS infrastructure (including the GEOSS Platform, GEO Knowledge Hub (GKH), and GEONETCast, among others) and monitor their implementation.	GEOSS Infrastructure Development Task Team (GIDTT)	The PB and the ExCom approved a one-year implementation plan for the GKH in 2020. Plans for the other components have not yet come forward to the PB.	Review progress in work planning within the GID Foundational Task and the operations of the GIDTT.  See document <a href="#">PB-19.22</a>

#	Work Item Title	Work Item Description	Lead Entity	Decisions and Actions in 2020	Outstanding Issues
10	GEO cloud services programmes	Explore the potential for cloud computing in support of GWP activities and to advance the GEO mission.	Secretariat	Three programmes providing credits, licenses, and/or funds to GEO projects were launched in 2019 and 2020, with a fourth planned for 2021. These programmes have been supported by donations from Amazon Web Services, Google Earth Engine, and Microsoft Azure. PB members have participated in the selection committees for all of the programmes.	Review of the selection process and identification of PB members of the selection panel.  See document <a href="#">PB-19.18</a>  The longer-term results of the programmes are as yet unclear. Concerns have been raised about privacy and access to personal data.
11	Implications for GEO of Open Science and the reproducibility crisis	Understand the implications for GEO of recent discussions in the broader community about Open Science.	CD-WG	The CD-WG offered to take the lead on this item due to its connections with capacity development and GEO support to developing countries. ITC offered the assistance of their Open Science Officer, Markus Konkol, to advise the CD-WG.	Review the draft GEO statement on Open Science.  See document <a href="#">PB-19.16</a>
12	Canberra Ministerial Declaration: Translating Declaration into Action for GEO	Ensure alignment of the GWP and the PB with the Canberra Declaration.	PB	An initial review in 2020 determined that the PB and the GWP were addressing many of the Canberra Declaration commitments. Some additional actions were taken, including establishment of the PS-SG. The Secretariat was tasked with overall reporting to ExCom.	Periodically revisit the commitments in the Canberra Declaration to determine if further actions are needed.