

Report of the Programme Board

This document is submitted to the Executive Committee for information.

1 INTRODUCTION

This document provides a summary of the key outcomes of the 16th Programme Board meeting, which was held on 5-7 February 2020 at the offices of the Secretariat.

Of particular note, the Programme Board:

- Identified opportunities/gaps and actions to advance GEO support to the UN Office of Disaster Risk Reduction (UNDRR) during a special session that included representatives of UNDRR and of GEO Work Programme activities related to disaster risk and resilience (see section 2 below);
- Requests that the Executive Committee note the need for geographic and gender diversity in the new Equality, Diversity and Inclusion subgroup and nominate members, particularly from developing regions and of males (see section 3.2);
- Recommended that the schedule for development of the GEO Knowledge Hub Implementation Plan be extended to allow for more consultation with the GEOSS Infrastructure Development Task Team (see section 4.1);
- Endorsed the draft changes to the Working Group terms of reference, with some additional amendments (see section 3.1 and document ExCom51-12); and
- Approved a Plan of Work of the Programme Board for 2020 (see section 5).

2 SPECIAL SESSION ON DISASTER RISK REDUCTION

Following the special session with UN-Habitat in conjunction with the 15th Programme Board meeting in September 2019, the Programme Board requested that similar sessions be organized to address other GEO priorities with the participation of relevant stakeholders. In response, the Secretariat, primarily James Norris and Steven Ramage, contacted UNDRR to arrange for representatives to speak with the Programme Board. Leads of many of the key GEO Work Programme activities involved in disaster-related activities were also invited to attend the session, either in-person or by videoconference.

2.1 Presentation by UNDRR

Rhea Katsanakis provided a detailed overview of UNDRR, noting that it is the United Nations focal point for disaster risk reduction. UNDRR oversees the implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030 and supports countries in their implementation, monitoring and knowledge sharing in the reduction of existing risk and preventing the creation of new risk. As a UN body, UNDRR works at the

intersection between understanding risk and impact, as well as being able to convene and coordinate risk reduction activities that move towards a more resilient future.

Adam Fysh, also from UNDRR, gave an overview of some of the planned reports which will make up the next cycle of reporting on the Sendai Framework. Before the next version of the Global Assessment Report is published in 2022, a GAR 2021 Special Report on Drought will be published. The Special Report will look at the modernising the understanding of drought, bring into focus its complex drivers and impacts especially in the context of moving from risk management to resilience. The report will focus on use cases from across the globe and will recognise that not all case studies can be included.

The concept of the Global Risk Assessment Framework (GRAF) was introduced. The GRAF has been designed to inform decision making, and transform behaviour specifically related to risk. It is currently in the development phases and is expected to act as a network and a resource where information can be stored and used. The development of the GRAF is a long-term project, with deliverables through to 2030, currently Phase 1 is being developed. Phase 1 includes the development of the concepts and new methods that will bring new types of information together, this also includes proof of viability and building engagement in the risk community. Several new Working Groups have been set up: Vulnerability and Exposure; Understanding Risk Trends; Measuring Outcomes of Sendai; and, Collaboration Hub/Platform. There will be a call for participation for each of these Working Groups.

Ms Katsanakis and Mr Fysh then shared some of the areas where they feel that UNDRR and GEO could collaborate more closely. Firstly, this includes supporting the development of the GAR 2022, providing insight in the understanding risk trends and how Earth observations can provide insight into exposure and vulnerability, as well as hazards. Secondly, joining and contributing to the development of the GRAF Working Groups (this includes national Space Agencies, and National Mapping Agencies) and country pilots, including (where possible) making Earth observation data available to the GRAF and the GRAF communities. Thirdly, working with and supporting departments and agencies that feed into the Sendai (and SDG) monitoring, to use Earth observations where possible.

2.2 Presentations by GEO Work Programme activities and other partners

In this session we were pleased to have had representatives from a wide range of GEO Work Programme Initiatives and Community Activities and Regional GEOs, as well as an insight into some of the work of the CEOS Working Group Disasters and UN Environment. Presentations were given by: GEODARMA; GEO-GNOME; GEO-VENER; GSNL; GWIS; EO4DRM; GFRM; EO4SendaiMonitoring; and, Geodesy4Sendai. The presenters focused on how the outputs from their activities support the Sendai Framework, how they relate to national or regional disaster risk reduction efforts, and what opportunities there are in the future. All the presentations can be found on the [16th GEO Programme Board website](#).

Focusing on the opportunities from UN Environment, Pascal Peduzzi spoke about the primary role of GRID-Geneva (the UNEP centre for analytics) in transforming data into environmental information and knowledge, to support decisions and move towards sustainable development. This is being served through a collaborative project called the

World Environment Situation Room. The project is global scale that focuses on overarching environmental policy relevance and impact. It includes geo-referenced, remote-sensing and earth observation information integrated with statistics and data on the environmental dimension of sustainable development. Currently in the implementation phase, more information on the World Environment Situation Room can be found [here](#).

Programme Board was also given an opportunity to hear about the role of CEOS and its Working Group on Disasters. Mr Green (NASA, and chair of the CEOS WG: Disasters) shared some insights into the NASA Disasters Program and the role that it has in disaster resilience. David also highlighted how CEOS WG: Disasters leads and supports several activities within the GEO Work Programme (GEODARMA, GSNL, and EO4DRM). It is also currently developing a new CEOS DRM Observation Strategy which looks to cover at a high-level the current landscape in which the group operates and new opportunities for CEOS and GEO to support the wider risk community.

2.3 Discussion of opportunities and possible actions

Following the presentations, Programme Board members, together with the UNDRR representatives and other guests, discussed some of the opportunities for GEO and possible actions for follow-up by the Programme Board and/or other members of the GEO community. It is expected that the Disaster Risk Reduction Working Group will be assigned several of the actions listed below.

Opportunities identified included:

- Involvement in risk assessment activities in national platforms, especially in UNDRR pilot countries.
- Seek open access to high resolution commercial digital elevation model products.
- Show value of information / data for DRR decision making.
- Consider how to connect Earth observation information to potential solutions.
- Translate impacts into metrics (e.g. financial) used by decision makers.
- Recognize the importance of trust in the information by decision makers in influencing its use.
- Connect with the growing interest within the biodiversity community in supporting natural solutions to disaster resilience.
- Engage GEO Participating Organizations to a greater extent to address gaps in the GEO Work Programme.
- Move from a focus on hazards toward risk assessment: combine hazard information with exposure information, e.g. buildings, natural assets, socioeconomic information. Compare exposure to hazards at varying intensities.

Possible actions / objectives included:

- Determine how the new DRR Working Group might best contribute.
- Engage members of the GEO community in the GRAF working groups, such as the one on risk communications.
- Review GEO Work Programme activities (and external activities where possible) that might be able to contribute to the GRAF and specifically to the GAR 2021 report on drought, for example, GEOGLAM and Community Activities focused on drought.

- Identify gaps where a new GEO Work Programme activity could be developed to respond to an identified need.
- Identify potential funding sources for a Secretariat DRR expert and to support GEO Work Programme activities.
- Engage GEO participants who work in civil protection and other disaster-related areas to better understand their information requirements.
- Encourage involvement of new organizations and individuals in the GEO Work Programme. Identify other actors, such as IUCN, that are also interested in these issues. Be clearer in communications that GEO Work Programme activities are open to new participants.
- Look at potential projects, including partners in GEO Members, that target use of information; seek funding from large international funds.
- UNDRR will consider participation in the DRR Working Group. UNDRR will also identify some specific Earth observation information needs from their perspective.

3 FOUNDATIONAL TASK WORKING GROUPS, PROGRAMME BOARD SUBGROUPS AND ENGAGEMENT TEAMS

3.1 Terms of Reference for the Working Groups

The Programme Board reviewed proposed changes to the terms of reference of the four Foundational Task Working Groups, as requested by the Executive Committee. The changes were proposed by the Secretariat in response to comments provided by Executive Committee members following its 50th meeting.

Programme Board members agreed with the changes proposed by the Secretariat, but some Programme Board members suggested additional changes. Following an initial discussion on the second day of the meeting, Programme Board members were invited to submit specific text changes for consideration by the full Board on the third day. Some, though not all, of the submitted changes were accepted by the Board. The details of all of the changes are discussed in greater length in Executive Committee document 51.12.

3.2 Programme Board Subgroups

During its 16th meeting, the Programme Board reviewed its two existing subgroups (“Urban Resilience” and “Awards”) and considered proposals for the creation of three new subgroups, two of which responded to requests by the Board at its 15th meeting.

Equality, Diversity and Inclusion subgroup: The Programme Board approved a proposal from the United Kingdom for the creation of an “Equality, Diversity and Inclusion” subgroup with the strategic aim of developing GEO as an institution that provides a fair, supportive and encouraging environment in which a diverse set of participants engages responsibly. Initial actions will be focused on gathering data regarding the demographics of members of GEO governance bodies and attendees at major GEO events. Based on the findings of the initial analysis, the subgroup will develop an action plan to encourage greater participation from under-represented groups.

Following an initial call for nominations, the subgroup members is heavily skewed toward one demographic, white females from developed countries. As the terms of reference allow for participation by individuals that are not Programme Board members but who are nominated by GEO Members and Participating Organizations, the Programme Board requests Executive Committee members to nominate additional persons to expand the gender and geographic diversity of the subgroup.

GEO Symposium 2020 subgroup: The Board also approved terms of reference for a Symposium subgroup, which will provide for active participating by Programme Board members, together with the Secretariat, in the planning, organizing and management of the 2020 GEO Symposium, to be held 16-18 June. Programme Board also approved the proposed concept for the 2020 Symposium, which will focus on developing the capacity of GEO Work Programme leads and participants to implement effective activities. The aim is to assist GEO Work Programme participants in common tasks such as working with UN organizations; sharing reproducible knowledge; understanding ethical and other challenges in working with various kinds of data; resource mobilization; and many other topics.

Private Sector Engagement subgroup: As part of the discussion on a Programme Board plan of work (to be discussed below), the Board also agreed to create a Private Sector subgroup. The purpose of this subgroup will be to further the engagement of private sector organizations in the GEO Work Programme, not only as contributors, but also as potential users/beneficiaries of the results developed in the GEO Work Programme. This topic responds directly to commitments in the Canberra Declaration. Terms of reference for this subgroup have not yet been proposed but are expected to be presented to the Programme Board for approval at its 17th meeting.

Urban Resilience subgroup: Following the special session with UN-Habitat which was held in conjunction with the 15th Programme Board meeting in September 2019, a special-purpose task force was created to ensure that the actions identified in the special session were followed up. Since the task force was created, it became apparent that there was an ongoing need for interaction between the Board, UN-Habitat, and the main GEO Initiatives that address urban issues. The Programme Board reviewed proposed terms of reference developed by Greece on behalf of the task force for a subgroup to replace the task force. The terms of reference were approved, with some amendments from the European Commission.

GEO Awards subgroup: The Programme Board also reviewed lessons learned from the first GEO awards process, which culminated in awards being given at the GEO Week 2019 gala dinner to three individuals in the GEO community. Among the lessons: the process needs to begin earlier in the year, more outreach is needed to GEO regions to encourage nominations, and more guidance is needed so that nominations are complete and follow the requirements. The Programme Board agreed to the continuation of the subgroup and asked members to prepare terms of reference for review at the 17th Programme Board meeting, as well as a recommendation on whether a second category of award should be introduced.

3.3 Support to GEO Work Programme activities

During the lessons-learned session conducted at the 15th Programme Board meeting in September 2019, Board members indicated their interest in maintaining the team structure used for the review of GEO Flagship, Initiative and Regional GEO implementation plans following the completion of the 2020-2022 GEO Work Programme development period. In response, the Secretariat proposed that a modified team structure be retained through the 2020-2022 period to support and to monitor progress of implementation of GEO Work Programme activities.

A key element of the strategy proposed by the Secretariat is the identification of a small set (1 to 5) of key objectives that would serve to focus the engagement efforts of both the Programme Board teams and the Secretariat in their interactions with the activities. These objectives may be of several different types, including: actions to address weakness or gaps identified during the implementation plan reviews; areas where the activity requested assistance from the Secretariat and/or Programme Board; establishing linkages with other organizations, such as UN organizations, potential regional partners including Regional GEOs, or user communities; or strengthening the ability of the activity to share data, services, tools, or methods with a broader community.

The duties of the engagement teams will be to:

- Participate in periodic teleconferences with the activity leads and the Secretariat;
- Participate in teleconferences of the engagement team, as needed;
- Review documents related to the identified objectives of the activities addressed by the team;
- Assist in further the objectives where the team member has relevant expertise, contacts, etc.; and
- Assist in informing the Programme Board of the work of the team and progress achieved by the activities toward their objectives.

The Programme Board approved the creation of eight engagement teams, which is two fewer than the number of review teams that were used in 2019. The smaller number of teams is due to there being fewer GEO Initiatives that were approved in the 2020-2022 GEO Work Programme than had originally applied. The original set of teams and activity allocations were modified following the 16th Programme Board meeting to reduce the total number of teams / subgroups required and to address low nominations for some teams. The current team structure and activity alignments is as follows:

Biodiversity / Ecosystems: GEOBON, GEO-WETLANDS, EO₄EA

Climate Change: GFOI, GEO-CRADLE, GEO-GNOME, GEO-VENER

Disaster Risk Reduction: DIAS, GEO-DARMA, GSNL, GWIS

Health: GOS₄M, GOS₄POPS, EO₄HEALTH

Land / Agriculture: GEOGLAM, GDIS, GEO-LDN

Regional GEOs: AFRIGEO, AMERIGEO, AOGEO, EUROGEO

Urban Resilience: EO₄SDG, HUMAN-PLANET, GUOI

Water: AQUAWATCH, BLUE-PLANET, GEOGLOWS

The teams addressing Climate Change and Disaster Risk Reduction are expected to have at least some members in common with the Working Groups of the same names. While the mandates and membership of the Working Groups is much broader than that of the engagement teams, it will be important to ensure that each is aware of the activities of the other, which should be achieved through cross-membership. The Urban Resilience subgroup of Programme Board will function as the engagement team for the listed activities but will also have a broader mandate.

The engagement teams are expected to continue their work over the three years of the 2020-2022 GEO Work Programme implementation, subject to periodic review by the Programme Board.

4 GEOSS IMPLEMENTATION

4.1 GEO Knowledge Hub Implementation Plan

The Executive Committee, at its 50th meeting, directed the Secretariat to prepare an implementation plan for the GEO Knowledge Hub in consultation with the GEOSS Infrastructure Development Task Team (GID-TT) and the Programme Board. The implementation plan was then to be presented to the Executive Committee at its 51st meeting.

The Secretariat provided a draft implementation plan to Board members with the general distribution of documents two weeks in advance of the meeting. In addition, the Secretariat also provided, one week later, a set of tables detailing all of the comments provided by members of the GID-TT and Programme Board co-chairs on the draft implementation plan, together with responses from the Secretariat to each comment.

During the discussion, it became apparent that the GID-TT members had not yet had an opportunity to discuss the comments and responses. The version of the implementation plan that had been circulated to the Programme Board did not therefore reflect a consensus position of the GID-TT, but was only the first step in the process. Programme Board members expressed the view that it would not be meaningful for them to comment on a document that had not yet been fully reviewed and agreed by the technical experts on the GID-TT.

In response to the discussion, the Secretariat proposed a revised timeline for the development of the implementation plan. The revised timeline would allow for two full rounds of comments and revisions within the GID-TT prior to going to the Programme Board for another review. While this revised timeline would require postponing the presentation of the plan to the Executive Committee until July 2020, the consensus of the Programme Board was that this was preferable to proceeding on the original timeline which did not allow sufficient time to resolve outstanding concerns. The Programme Board remained supportive of the concept of the GEO Knowledge Hub and agreed that it would be beneficial for GEO Work Programme activities, but more time was needed to ensure that the plan was sound.

4.2 GEO-Google Earth Engine (GEE) Programme

The Secretariat informed the Programme Board of the launch of the GEO-GEE programme, as well as the application and review procedures. The Programme Board was asked whether it wished to nominate some of its members to participate in the review of proposals, similar to the process used for the GEO-Amazon Web Services cloud credits programme.

During the discussion, concerns were expressed regarding the openness of the process that led to the offer, data rights, and potential for vendor lock-in. There were also expressions of support for the programme and the benefits it could provide to the GEO community.

Programme Board members were asked to contact the Secretariat if they were available to assist with the process (one member volunteered during the meeting).

5 PROGRAMME BOARD WORK PLANNING

The Programme Board adopted a plan of work for 2020 based on a proposal of the Programme Board co-chairs. The plan lists outstanding topics which had been discussed by the Board the previous year but not resolved, as well as other items observed by the Programme Board co-chairs, such as from Executive Committee meetings or GEO Week 2019. The intent of the plan is to ensure that the Board retains a focus on the key items for the year, as decided at the first meeting of the year.

The Board discussed each item individually and decided on appropriate actions, which in many cases referred the matter to a particular subgroup or working group. The full work plan is attached as Annex A to this document.

6 VISIT OF CHIEF ALMIR

The Programme Board welcomed a visitor to Geneva, Chief Almir of the Surui people of Brazil. Chief Almir is noted for having encouraged his community to adopt the use of remote sensing for managing their lands, in particular, to combat illegal logging. He gave an inspiring talk to the Board, followed by a period of questions and discussion. Further details regarding the visit may be found in a [blog post](#) on the GEO website.

7 ATTENDANCE AT THE 16TH PROGRAMME BOARD MEETING

7.1 Present (including by video- or tele-conference)

7.1.1 *GEO Members*

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

7.1.2 *Participating Organizations*

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

7.1.3 Guests

Adam Fysh (UNDRR), Rhea Katsanakis (UNDRR), Chief Almir Surui (Brazil), David Borges (NASA/United States), David Green (NASA/United States), Laila Kuhle (BBK/Germany), Fabian Low (BBK/Germany), Jesus San-Miguel (JRC/European Commission), John Harding (CREWS/WMO), Joel Myhre (Pacific Disaster Centre).

7.2 Absent

7.2.1 GEO Members

Kenya, Pakistan.

7.2.2 Participating Organizations

COSPAR, POGO.

ANNEX A

PROGRAMME BOARD PLAN OF WORK 2020 (ADOPTED AT PB-16)

At its 16th meeting on February 6-7, 2020, the GEO Programme Board adopted a Plan of Work for 2020. The following table represents the tasks that the GEO Programme Board will work to complete during 2020. The work items stem from PB's prior year's discussions, Executive Committee and Plenary outcomes, and observed future need.

#	Work Item Title	Work Item Description	Priority	Lead Entity	PB-16 decisions / comments
Discussed in 2019					
1	Continued engagement with GWP activity teams. -from PB 12, 13, 14, 15	PB, through Engagement Teams, to promote cross-interaction among related GWP activities to facilitate horizontal collaboration and integration, and to continue with GWP teams to facilitate growth and successful implementation.	1	Engagement Teams	PB-16 action on PB members to confirm their participation in PB Engagement Teams.
2	Diversity in GEO (GWP) -from PB 13 and 15	An effort to promote diversity (3G's: Gender, Generation, Geography) within GEO	1	UK (Nathalie Pettorelli)	PB-16 approved Equality, Diversity and Inclusion Subgroup ToR.
3	Private Sector Engagement in GWP -from PB-14	Identify a range of need/opportunities for private sector contributions to GWP and private sector use of GWP outputs.	1	AUS/SA/USA	PB-16 agreed to set up a Private Sector Subgroup.
4	A GEO "Resource/Guide" -from PB-15	Develop a Resource/Guide for GWP activity leads on scaling, mobilizing resources, commercial sector engagement	2	AUS/IAG	PB-16 determined that AUS/IAG will define the Guide's scope in second half of 2020, following consultations at GEO Symposium and leveraging outputs of Private Sector, EDI and other special teams.
5	Follow up and next steps on engagement with UN Habitat	Are next steps clear for PB?	1	Urban Resilience Subgroup	PB-16 agreed this would be in the purview of Urban Resilience SG.
New Proposals (some inspired by past discussions)					
6	Foundational Task WG ToRs	Review and revise WG ToRs to respond to ExCom-49 comments	1	GEOSEC, PB	Task completed at PB-16.
7	Knowledge Hub Implementation Plan	Review implementation plan for submission to Excom-51	1	GID-TT	PB-16 recommended further consultation within the Task Team prior to review by PB members. A revised timeline was approved, which would require deferring ExCom review until its 52nd meeting.

#	Work Item Title	Work Item Description	Priority	Lead Entity	PB-16 decisions / comments
8	GEO Awards	Review Lessons Learned from the inaugural round. What adjustments need to be made to the process, criteria, etc. Consider whether additional awards categories should be launched. Agree on timeline for 2020 awards process. Decide if the committee membership stays the same or new members every year.	1	Awards SG	PB-16 agreed to continue with aim to publish call for Individual Excellence Award nominations in April 2020 timeframe. A subgroup will be formed and develop ToR over the course of 2020. Consult PB Actions 16-07, 16-08, 16-09
9	Google Offer to Work with GEO on Promoting GEO results through GEE	Determine what, if any, engagement is necessary between Google Earth Engine team and PB to alleviate concerns around risks to personal data, etc.	2	Special Team, Data WG	PB-16 decided this could be handled by either the Data WG or a special purpose team.
10	Report on progress from cloud service credits programmes	Discuss the need for a mid-term and end-of-term feedback from the projects who are receiving cloud service credits (GEE and AWS).	2	GEOSEC (Doug)	PB-16 agreed to review end-of-term results. Consult PB Action 16-10.
11	Youth Engagement in GEO	Determine means by which GEO can promote youth engagement in GEO/EO sphere.	1	EDI Subgroup	PB-16 agreed this will be in the purview of EDI SG and topic of interest for future events.
12	Regional GEO Coordination	Is there a role for PB? Will the Regional GEOs review teams have a role?	1	Regional Engagement Team	PB-16 determined this will be handled by PB's Regional GEO Engagement Teams.
13	GEO Symposium	Plan GEO Symposium 2020	1	Symposium SG	PB-16 decided to establish Symposium 2020 Subgroup.
14	"From email to action": on Reproducibility Crisis	Develop a paper with problem statement and recommendation for solutions to promote wider awareness and discussion internationally.	2	GEOSEC (Gilberto)	Secretariat offered to prepare a discussion paper on this topic.
15	UN-DRR engagement session		1	GEO DRR-WG	PB-16 determined DRR WG will continue to expand on this mandate. PB-16 encouraged more special sessions on engagement with key stakeholders.
16	Canberra Ministerial Declaration: Translating Declaration into Action for GEO	Review Ministerial Declaration and determine if it inspires any new actions for PB.	1	GEOSEC, PB	PB-16 decisions respond to the Declaration Content. ExCom-51 may provide further guidance.

GEO Programme Board Meeting Schedule 2020:

Programme Board-16: February 5-7 (Geneva, Switzerland)

Programme Board-17: June 15 and 19 (Geneva, Switzerland)

Programme Board 18: September 1-3 (Accra, Ghana)