Engagement Team Process in 2021

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

1 INTRODUCTION

At its 19th meeting in January 2021, the Programme Board confirmed that the Engagement Team (ET) process was valuable and that it should be retained in 2021. Several adjustments to the process were also decided at that time:

- Renaming of the Climate and Disaster Risk Reduction ETs (to "Cross-cutting" and "Hazards", respectively) to reduce the appearance of overlap of mandates with the Climate Change and Disaster Risk Reduction Working Groups;
- Exploration of joint calls with multiple activities on a thematic basis;
- Simplification of the call report structure and making recordings of the calls available to PB members; and
- Strengthening of linkages between the ETs and the Foundational Task Working Groups.

This document provides a summary of the ET calls that have been held since the 19th Programme Board meeting as a basis for a discussion at the Programme Board of observations from the calls. These observations may pertain to the substance of the discussions or to the ET process.

The list of Engagement Teams for 2020 and their members is provided in Annex A.

2 SUMMARY OF ENGAGEMENT TEAM CALLS IN 2021

At the time of preparation of this document, six ET calls have been completed and a further two are scheduled prior to the end of May 2021. The list of calls, completed and scheduled, is provided in Table 1 below.

Of the eight calls, three are with individual Flagships or Initiatives that were not included in the ET calls held in 2020. On concluding these calls, all Flagships and Initiatives will have participated in an individual call with a Programme Board ET.

Another three of the calls were with Regional GEOs. No ET calls were held in 2020 due to delays in agreeing on the set of questions which would be used to guide the calls. The Programme Board co-chairs advanced this discussion in 2020, preparing a draft set of questions which was circulated to the Regional ET team for comment. This set of questions, as revised by Regional ET members, was used as the basis for the calls.

The last category of calls were two thematic calls with multiple GEO Work Programme activities. The first of these addressed activities related to land and agriculture. Invitations were sent not only to the Flagships and Initiatives which for which the Land/Agriculture ET is responsible, but also relevant Community Activities. The second thematic call was focused on the theme of health.

Table 1: List of Engagement Team Calls in 2021

Date	Flagships / Initiatives Participating	Engagement Team
30 March	AQUAWATCH	Water
14 April	GEOGLAM, GDIS, GEO-LDN, AFRICULTURES, AGRI-DROUGHT, CROP PEST MONITORING	Land / Agriculture
14 April	EO4HEALTH, AQUAWATCH, GOS4POPS, GEO-CITSCI	Health
6 May	AFRIGEO	Regional
7 May	EUROGEO	Regional
11 May	AOGEO	Regional
13 May	EO4SDG	Urban
28 May	GFOI	Biodiversity / Ecosystems

The reports for each of these calls is provided in Annex B.

3 OBSERVATIONS FROM THE SECRETARIAT

The ET process has been a new element of the role of the Programme Board, one which has enabled more direct interaction between leads of the Flagships, Initiatives, Regional GEOs and even some Community Activities and some members of the Programme Board. The ET process has also coincided with the period of the COVID-19 pandemic and the restrictions on face-to-face meetings that it brought about. In that sense, the ET process has served to some degree to maintain the connections between the Programme Board and the GEO Work Programme during a time when the usual opportunities at symposia, workshops, conferences and so on were not available.

The ET calls were almost universally welcomed by the GEO Work Programme activities. The Secretariat heard many statements of appreciation for the opportunity to discuss their work with Programme Board members and the Secretariat, with most seeking even more such interaction.

It should also be noted, however, that the process has been quite demanding on the time of Secretariat staff – not only the staff directly supporting the GEO Work Programme – but also other staff who attended the calls. This is not to say that this time expended on the process was not worthwhile, but it clearly represents a significant investment from the Secretariat. A large portion of this time is required to schedule the calls and prepare the reports, along with other follow-up activities emerging from the calls. The process is also demanding on the time of Programme Board members.

The time required to schedule and conduct the calls with GEO Work Programme activities has meant that there was not sufficient time available for the ETs to meet on their own to discuss what they heard and to coordinate possible actions to assist the activities. Follow-up actions were largely left to the Secretariat or with individual Programme Board members who volunteered with particular items.

The 20th Programme Board meeting takes place just over one month short of the half-way point of the 2020-2022 GEO Work Programme. While this suggests that there is still much left to be done in this Work Programme – and there is – past experience also shows that the planning for

the 2023-2025 GEO Work Programme will need to begin soon. The 21st Programme Board meeting in September 2021 will provide an opportunity to discuss possible strategic changes to what will be the final Work Programme of the 2016-2025 GEO Strategic Plan period.

The Secretariat believes that the ET process has been valuable as a means of maintaining contact with the GEO Work Programme during the past year and a half and that it has led to important insights about improvements needed to the GEO Work Programme. However, given the time demands of the process and the need to plan for the 2023-2025 GEO Work Programme development process, the level of activity in the ET process may need to be scaled back. In 2022, it is expected that Programme Board members will be fully engaged in the process of reviewing implementation plans for 2023-2025 and thus the ET process will not apply in that year.

4 RECOMMENDATIONS

The Secretariat recommends that:

- The ET calls in the current cycle that have not yet been completed should be implemented as planned, including the call with AmeriGEO which is planned but not yet scheduled; and
- No further ET calls should be scheduled unless there are particular opportunities around specific themes that would benefit the GEO Work Programme.

Thoughts from Programme Board members on which elements of the ET process might be worth bringing back in 2023 and beyond would be welcome. This also applies to lessons from the ET process that may be applicable to the review process for the 2023-2025 GEO Work Programme.

Annex A

2021 Engagement Teams and Members

Engagement Team	Flagships / Initiatives / Regional GEOs	Members
Biodiversity / Ecosystems	GEO BON, GEO-WETLANDS, EO4EA, GFOI	Canada, Finland, Japan, United Kingdom, CEOS, SWF
Cross-cutting	DIAS, GEO-CRADLE, GEO-MOUNTAINS, GEO-VENER	Kenya, CODATA/WDS, IAG
Hazards	GEO-DARMA, GSNL, GWIS	Italy, United Kingdom, CEOS, CODATA/WDS, SWF
Health	GOS4M, GOS4POPS, EO4HEALTH	Canada, Ecuador, Greece, Kenya, ESIP
Land / Agriculture	GEOGLAM, GDIS, GEO-LDN	Canada, Germany, Japan, Kenya, South Africa, CEOS, CODATA/WDS, EEA, ESIP
Regional	AFRIGEO, AMERIGEO, AOGEO, EUROGEO	Australia, Canada, China, European Commission, Finland, Ghana, Italy, Japan, Mexico, South Africa
Urban	EO4SDG, GUOI, HUMAN-PLANET	Canada, Ecuador, France, Greece, Japan, CODATA/WDS, ESA, IEEE
Water	AQUAWATCH, BLUE-PLANET, GEOGLOWS	Canada, Ghana, Kenya, South Africa, United States, CEOS, CODATA/WDS, IEEE

Annex B

Engagement Team Call Reports for 2021

Water Engagement Team Call with AQUAWATCH

Meeting Notes

Tuesday 30 March 2021

MEETING HIGHLIGHTS

- The development of Water Quality Information Service is being fostered by the GEO-GEE project and a few other small projects, however assistance in resource mobilization is much needed to get AQUAWATCH implementation up to speed.
- Part of the Water Quality Information Service is a knowledge hub. AQUAWATCH will reach out the GEO Knowledge Hub team to harmonize the efforts.
- The interaction among water related activities used to be stronger and the PB is requested to give thoughts on how to advance such interactions under the current GEO structure

PARTICIPANTS

AQUAWATCH: Steven Greb

PB Water ET: Charles Mwangi, Hans-Peter Plag, Kerry Sawyer, Marie-Claire Greening

GEO Secretariat: Craig Larlee, Wenbo Chu

DETAILED NOTES

1. ***How has the COVID-19 pandemic affected your activity? Has the pandemic led you to change plans or directions for the activity in future, including to pursue new opportunities?***

   As all the other activities in GEO, AQUAWATCH shifted its way of working and did its best to carry on the planned tasks through online meetings and webinars. However, lack of F2F discussion still impeded the potential collaboration with other GWP activities.

2. ***What key achievements or areas of progress have been realized over the last year?***

   WG1 Outreach and Engagement: about to sign an MoU International Water Association which is expected help define user needs.

   WG2 Observations and Data and WG3 Products and Information: these two WGs work jointly to a) identify available algorithms and compare the pros and cons of the different approaches; b) use the GEO-GEE Cloud Credit to create the water quality layer with 20 algorithm experts

   WG4 Distribution, Access and Visualization: granted 8.2k USD by University of Wisconsin to provide one-stop access to both satellite-derived and in situ water quality databases

   WG5 Education and Capacity Building: organizing flash talks in April 2021 for community building

What will the water quality information service look like?

Supplying near real-time water quality information on coastal and inland water with data and tools in the cloud, in an AQUAWATCH version of knowledge hub, which has been

conceptualized and in the process of apply for funding. Will get in touch with the GEO Knowledge Hub team.

Who are end users of water quality information in the AQUAWATCH context?

Regulation agencies, water management agencies, Citizen-based monitoring groups, water treatment operators

How Analysis Ready Data (ARD) is incorporated in the AQUAWATCH structure?

AQUAWATCH considered ARD as a valuable tool to lift the data pre-processing burden from users and bring consistency of data. AQUAWATCH has been working with CEOS on ARD since summer 2020.

AQUAWATCH and Citizen science

There have been successful examples of citizen science helping collect water samples to validate satellite data in the State of Wisconsin. There are also people who use information to write their own river stories. AQUAWATCH is in touch with the GEO-CTISCI to explore how to leverage citizen science.

AQUAWATCH GEO-GEE project

The project has two focuses: one is to create the water quality layer with continually updated data, currently involving 20 algorithm experts to bring in at least 20 algorithms; the other is to develop a reference database supported by the University of Stirling and funded by the World Bank.

4. ***Have you established any new connections with GEO Flagships, Initiatives, Community Activities or Foundational Tasks? Are there activities with which you would like to collaborate and would like help in doing so?***

Following the joint meeting on water in Canberra in 2019, AQUAWATCH planned a session in 2020 to discuss water quality in depth among multiple GWP activities including GEOGLOWS, BLUE PLANET and GEO-CTISCI. This was not realized due to the pandemic. Some interactions were carried out through webinars. A project proposal was put together with GEO-CTISCI. Conversations were held with ECMWF to build a water quality module on top of the streamflow forecasting system.

There was a reflection that there used to be more interactions among water related activities under water SBAs. It is worth to give thoughts on how to foster such interactions under the current GEO structure (GEO Engagement Priorities)

5. ***Do you have any key data needs which have been difficult to fill? To what extent do you currently use non-EO data (e.g., statistics, mobile phone, etc.)? What benefits might be realized by advancing the integration of non-EO data in your activities?***

AQUAWATCH has been focusing on parameters that satellite data is applicable. It is trying to bring in in situ data, particularly the modeling community.

6. ***Do you require assistance from the GEO Secretariat and/or the Programme Board in any of the following areas?***

Assistance in resource mobilization is much needed. There is a good community supported by a secretariat in AQUAWATCH, however a bit more efforts are needed for this activity to get enough speed to take off. Prioritization (focusing on a small number of projects such the GEO-GEE project, the One Earth portal and so on) is one of them.

Funding is another one, where the GEO Resource Mobilization team can help shape the proposals and reach out to potential funding sources.

Agriculture / Land Engagement

Joint Call with GEO Work Programme Activities

Wednesday 14 April 2021

PARTICIPANTS

PB Agri/Land Engagement Team: Andrus Meiner, Andrew Davidson, Charles Mwangi, Carsten Dettmann, Suchith Anand, Jose Miguel Rubio Iglesias, Osamu Ochiai

GEOGLAM: Ian Jarvis

GEO-LDN: Alex Zvoleff, Amos Kabo-Bah, Antje Hecheltjen, Jonathan Sorger Domenigg, Sara Minelli

GDIS: Richard Heim, Steve Ansari, Will Pozzi, Cheo Emmanuel

Agri-Drought: Jinlong Fan

AFRICULTURES: Juan Suárez Beltrán, Mark Noort, Thomas Alexandridis

Crop Pest Monitoring: Wenjiang Huang

WMO Secretariat: Robert Stefanski, Jose Camacho, Katrin Ehlert, Saeed Vazi, Valentin Aich

GEO Secretariat: Doug Cripe, Paola de Salvo, Sara Venturini, Craig Larlee, Wenbo Chu

DISCUSSION NOTES

1. ***Presentations on activities***

   Slides for presentations: GEOGLAM, GDIS, GEO-LDN and AFRICULTURES.

2. ***Opportunities for collaboration***

   Drought forecasts – GEOGLAM/WMO/GDIS

   GEOGLAM does not do drought monitoring itself but uses drought information to assess the impact of potential droughts on crop production.

   GDIS is trying to produce monthly drought forecasts based on the ECWMF seasonal forecasts and the UC Santa Barbara group precipitation forecasts, filling the gap between the usual 10-day forecasts and seasonal forecasts. The actual work is to validate the precipitation forecasts made available by the UC Santa Barbara group and evaluate their efficacy, effectiveness and reliability in different regions. GDIS developed the IT infrastructure to accommodate any variety of forecasting drought indicators provided they are in the GIS format that can be put into the IT infrastructure. An ongoing action is to overlay the drought layer with agriculture regions, which will be a good basis to support the monitoring of food production.

   WMO has an ensemble product Global Seasonal Climate Update based on 10 seasonal climate prediction models run by WMO-accredited centers and coordinates Regional Climate Outlook Forums forecasts. WMO developed the Global Drought Classification System (also an input to UNCCD) which assist countries to convert drought information

into alerts based on Common Alerting Protocols (CAP). Ian and Jose should meet in coming months to connect the dots.

Extension of crop monitoring to farm level and national specific crops

AFRICULTURES complements what GEOGLAM does and includes crops that are locally relevant but not in the GEOGLAM monitors. AFRICULTURES also tries to provide products with finer spatial resolution down to the farm level. It's important for AFRICULTURES and GEOGLAM to work together and share methodologies.

Crop Pest Monitoring

GEOGLAM currently uses the FAO locust reports as the authoritative source for crop production prediction. The Crop Pest Monitoring products are complementary to the FAO locust reports – the former combines remote sensing data, meteorological data and other sources and produces reports at the regional/global scale with the same methods, while the later ensembles information provided by countries with different methods. GEOGLAM research teams also refers to the Crop Pest Monitoring products in addition to the FAO reports.

Replication of global and regional products for national purposes

The above-presented activities all have a focus on regional and global products. It's suggested to explore nation specific products which are more relevant for countries.

A marketplace to access methods, tools and relevant data is expected to help understand the backend of these products and build local capacities. The GEO Knowledge Hub (GKH) serves exactly that purpose. The first pilot in the GKH is Sen2Agri which is a knowledge package to be utilized to process high resolution satellite images for agricultural purposes. For more information on GKH, please contact Paola De Salvo (pdesalvo@geosec.org) and Doug Cripe (dcripe@geosec.org).

3. GEO Work Programme activity implementation management

Q: GEOGLAM coordinates a big network of activities and contributors. How many people are hired in the GEOGLAM Secretariat and how it is funded?

A: GEOGLAM is mainly supported by in kind contributions. The GEOGLAM Executive Committee itself has over 40 members. Ian Jarvis is the only full-time staff of the centralized GEOGLAM Secretariat, the funding of which has been a challenge and is sustained for the next few year by the Germany contribution.

It was suggested to provide links to relevant activities on their websites so that participants are aware of the portfolio of GEO resources.

The GEO Work Programme leads will be approached to validate information on how these activities support SDGs, DRR, Climate Change and Capacity Development compiled together by several GEO Working Groups.

Health Engagement Team

Joint Call with GEO Work Programme Activities

Wednesday 14 April 2021

PARTICIPANTS

PB Health Engagement Team: Marie-Josée Bourassa, Maria del Pilar Cornejo Rodriguez,

EO4HEALTH: John Haynes, Juli Trtanj, Helena Chapman

AQUAWATCH: Steven Greb

GOS4POPS: Lukas Pokorn

GEO CITIZEN SCIENCE: John Pring

GEO Secretariat: Diana Mastracci, Doug Cripe, Steven Ramage, Craig Larlee, Wenbo Chu

DISCUSSION NOTES

1. ***Presentations on activities***

Slides for the presentations: EO4HEALTH, AQUAWATCH and GOS4POPS

EO4HEALTH

The Health Community of Practice as an inclusive umbrella network has over 300 participants in the listserv and 50-60 attendees on weekly/biweekly calls since March 2020. The community is self-organized into working groups to explore gaps and opportunities which may be turned into projects.

The COVID-19 Task Team under the CoP resulted in the formal WMO-WHO joint working group on COVID-19 while the Task Team is still active in fostering research on COVID-19 seasonality issues.

EO4HEALTH Initiative currently funds 5 projects on forecasting of Dengue, Malaria, Cholera, Enteric Infectious Disease and Vector Borne Disease in various regions. The Health CoP benefited the Initiative by bringing important partners such as WMO and WHO in the case of COVID-19.

GEO CITIZEN SCIENCE

The citizen science (CS) community shares the challenge of data uptake by government authorities, given the nature of citizen science data.

The majority of CS observations is on the ecological side of health, while there is a study on Zika by Brisbane local health authority using CS to track mosquitos.

GOS4POPS

Provides operation services to support the effectiveness evaluation of the Stockholm Convention on Persistent Organic Pollutants and UNECE LRTAP Convention.

There is an ongoing development of the GMP Data Warehouse towards the release in July 2021 with increased spatial coverage, quality, comparability and accessibility of data and advanced tools.

AQUAWATCH

Started in 2007 as a Community of Practice

Current priorities on Aquatic Analysis Ready Data, Compiling Existing Data Sets (RealEarth Portal), Generating New Data Sets (Google Earth Engine), Coordination of Global Validation Efforts and Development of Knowledge Hub

2. *Open discussion on potential areas of collaboration*

Citizen Science has not been officially tackled in the Health CoP, but there is great potential for GEO Work Programme activities to collaborate on the health and citizen science frontier.

Water-health-citizen science example: Respiratory alerts on red tides in Florida utilizing citizen science – safeguards assistance in sampling water and uploading pictures. Opportunities for AQUAWATCH, EO4HEALTH and GEO CITIZEN SCIENCE to collaborate on water-borne disease.

Air quality-health-citizen science example: dust storm warning. Potential GOS4POPS, GOS4M and EO4HEALTH collaboration on assessment of POPs and mercury on human health

GEO Work Programme activities are invited to join the Health CoP calls to further the conversation.

Ecosystem-health-citizen science: the ecosystem piece has not been very much touched in the Health CoP. Could be an interesting discussion topic in small working groups.

AQUAWATCH planned to use citizen science data to validate satellite data-based model products. Should resume the conversation with GEO BON and so on.

3. *Best practices in GEO Work Programme activity management*

An implementation model – the Community of Practice and the Initiative grow hand-in-hand

The Health Community of Practice is one of fastest growing community within GEO - from single-digit to 300+ participants within several years.

The Health Community of Practice plays a significant role in engaging all interesting parties, identifying gaps and challenges, and brainstorming on new projects which can be fed into the EO4HEALTH Initiative. This model may be replicated to other GEO Work Programme activities.

A full-time coordinator is proved to be extremely valuable for the development of the Health Community of Practice. A simple and useful practice to populate and expand the CoP is to include a link to the CoP website in slides which usually result in 3-4 inquiry emails.

Operationalization and sustainability

GEO Initiatives are not expected to be operational. But GOS4POPS is a special case as Recetox is a regional center of the Stockholm Convention tasked to provide online services to Parties.

EO4HEALTH provided and perspective that 'operational' has be sustainable. GEO Initiatives are not necessarily operational, but it will be a great case to be able to do so. Operational products have to be co-designed with users, modelers and researchers from the beginning.

Focus on interaction with international organizations vs government authorities

There were struggles to convince the national governments to understand and use EO for SDG reporting. Given the active engagement of WMO, WHO and other international organizations in the Health CoP, should the GEO efforts be focused on working with UN organizations instead of national governments? The EO4HEALTH team responded that GEO efforts should be put on both. Although the interaction with both International Organizations and national governments have been very intensive, but the actual up-take of EO data by the health authorities is still on the way.

Communication

Users usually do not know what the EO community can offer. It is not an effective conversation by asking users what they need from the EO community. Instead, should ask what their challenges are and what are solutions for these challenges.

Activities may consider having professional scientific communicators assist in conversations with policy makers and the general public.

4. *Other*

The GEO Knowledge Hub team is ready to support the activities to prepare and publish EO-based tools and methods.

The GEO Work Programme leads will be approached to validate information on how these activities support SDGs, DRR, Climate Change and Capacity Development compiled together by several GEO Working Groups.