

GEO Report on Equality, Diversity, and Inclusion

This document is submitted by the Equality, Diversity, and Inclusion Subgroup to the Programme Board for discussion.

1 EXECUTIVE SUMMARY

This report provides a first-ever overview of diversity within key elements of the Group on Earth Observations (GEO) activities. It was prepared by the Equality, Diversity, and Inclusion (EDI) Subgroup of GEO's Programme Board, which supports the strategic aim of developing GEO as an institution that provides a fair, supportive, and encouraging networking environment with which a diverse set of participants engage responsibly. This first report aims to explore how gender and geographical diversity are currently embedded in GEO representation and participation. We recognize that gender and geographical location are not the only parameters to consider when looking at diversity; however, existing data is limited, meaning that our analyses had to primarily be focused on these two dimensions of diversity.

Quantitative data were used to assess (1) gender distribution in GEO staff; (2) gender and geographical distribution in Programme Boards membership, focusing on principals and GEO alternates; (3) gender and geographical distribution in GEO working group participants; (4) gender and geographical distribution in speakers and participants at recent GEO events; (6) gender and geographical distribution in applicants and awardees of GEO awards; and (7) gender and geographical distribution in applicants to recently advertised GEO leadership positions. Our analyses show that women are less likely to occupy senior position in GEO Secretariat; are less likely to seat on Programmes Board; are less likely to be members of GEO's Working Groups and speak and chair key GEO events; and are less likely to apply for GEO awards and leadership positions advertised by GEO. Our analyses also highlight how Programmes Board and Working Group members are primarily based in North America and Europe, and how individuals from wealthy developed countries are more likely to be nominated for GEO awards and apply for leadership positions advertised by GEO. Our report concludes with a series of recommendations to start addressing these imbalances.

2 SELF-ASSESSMENT PROCESS

This first GEO self-assessment report was carried out by GEO's Equality, Diversity, and Inclusion Subgroup (EDI SG), which is the entity supporting the strategic aim of developing GEO as an institution that provides a fair, supportive, and encouraging networking environment with which a diverse set of participants engage responsibly. The EDI SG includes 9 members, who are based in 5 continents and 9 institutions (Table 1). The Subgroup originally included three men, none of whom participated in any meetings of the Subgroup. The EDI SG met monthly since its formal launch in spring 2020, and reviewed data as they became available (see below).

Table 1: GEO’s Equality, Diversity, and Inclusion Subgroup composition

Name	Gender	Affiliation
Nathalie Pettorelli	Woman	ZSL, UK
Virginia Burkett	Woman	USGS, USA
Bente Bye	Woman	BLB, Norway
Amy Parker	Woman	CSIRO, Australia
Allison Craddock	Woman	IAG/NASA, USA
Andiswa Mlisa	Woman	SANSA, South Africa
Angelica Gutierrez	Woman	NOAA, USA
Céline Jacquin	Woman	INEGI, Mexico
Phoebe Oduor	Woman	RCMRD, Kenya

Our report aims to explore how gender and geographical diversity are currently embedded in GEO representation and participation. We recognize that gender and geographical location are not the only parameters to consider when looking at diversity, with, for example, age and career stage being other important factors. However, existing data is limited, meaning that our analyses and conclusions had to be primarily articulated around gender and geographical location. We hope other factors could be considered in the future.

Gender originally refers to the attitudes, feelings, and behaviours that a given culture associates with a specific biological sex. Gender identity, however, refers to the way someone experiences gender internally as part of their core sense of self. Gender identity cannot be assumed based on appearance, anatomy, social norms, or stereotypes; it isn’t determined by assigned gender or sex, and often develops or changes over time. Data on protected characteristics (such as gender or ethnicity) are not traditionally collected by the Secretariat. For most of the data presented in this report, gender had thus to be inferred from names while information about geographic representation was inferred from institutional links. Only two genders were considered, namely man and woman. Exception to this relates to the data collected for the 2020 GEO virtual symposium, where information on geography and gender was assessed through a survey sent to participants. For this survey, options to describe a participant’s gender included “man”, “woman”, “other”, “prefer not to say”, “no answer”. We recognize that this approach is far from optimal, and so our results should be read with such limitations in mind.

The quantitative data used to inform this self-assessment refer to (1) gender distribution in GEO staff for 2020; (2) gender and geographical distribution in 2020 Programme Boards membership, focusing on principals and GEO alternates; (3) gender and geographical distribution in GEO working group participants (for 2020); (4) gender and geographical distribution in speakers at the 2019 GEO week; (5) gender and geographical distribution in participants at the 2020 GEO symposium; (6) gender and geographical distribution in the 2019 and 2020 applicants and awardees; and (7) gender and geographical distribution in applicants to the GEO director role advertised in 2018 and 2020.

We are thankful to Emily Adams (NASA SERVIR-Science Coordination Office), Laura Cooper Hall (IUCN agent), Katherine Kasey (SERVIR Support Team), Nancy Searby (NASA) and Yana Gevorgyan (GEO Programmes Board) for their input on previous versions of this report. We

are also very grateful to GEO secretariat staff, who compiled and analysed most of the data presented in this report and provided significant support during the writing of this report.

3 DIVERSITY AT GEO

3.1 Secretariat and Programme Boards composition

3.1.1 Secretariat

As of October 2020, 15 staff were employed by GEO (7 women and 8 men). Women predominantly occupy administrative support and officer roles; senior positions are primarily occupied by men.

3.1.2 Programme Board Membership

In 2020, there were 53 men (73%) and 20 women (27%) serving as principal or alternate representatives on the Programme Board (Figure 2).

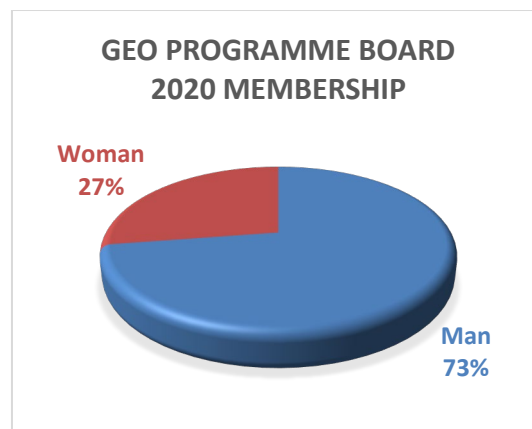


Figure 2: Proportion of men (blue) and women (red) on the Programme Board in 2020

Nine (7 men, 2 women) of these 73 representatives were from Africa (12%), 16 (8 men, 8 women) from the Americas (22%), 15 (12 men, 3 women) from Asia-Oceania (21%), and 33 (26 men, 7 women) from Europe (45%) (Figures 3 and 4).

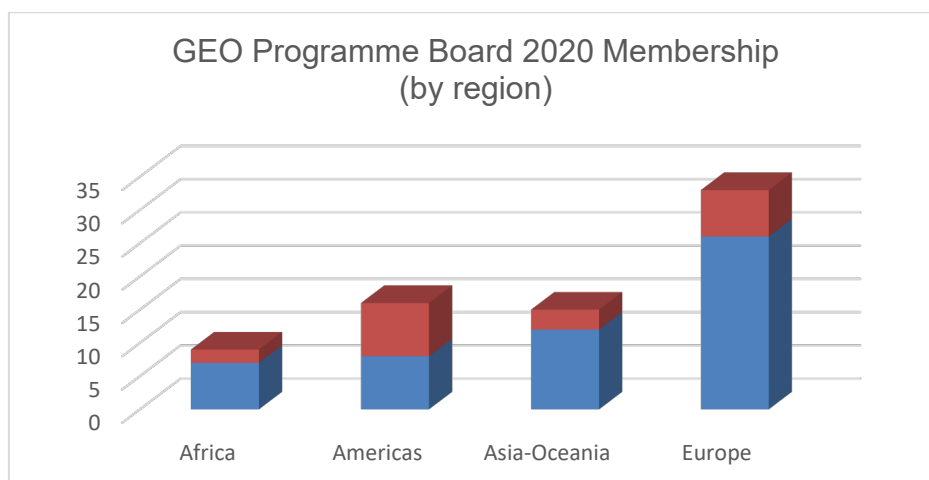


Figure 3: Proportion of men (in blue) and women (in red) on the Programme Board in 2020, by region.

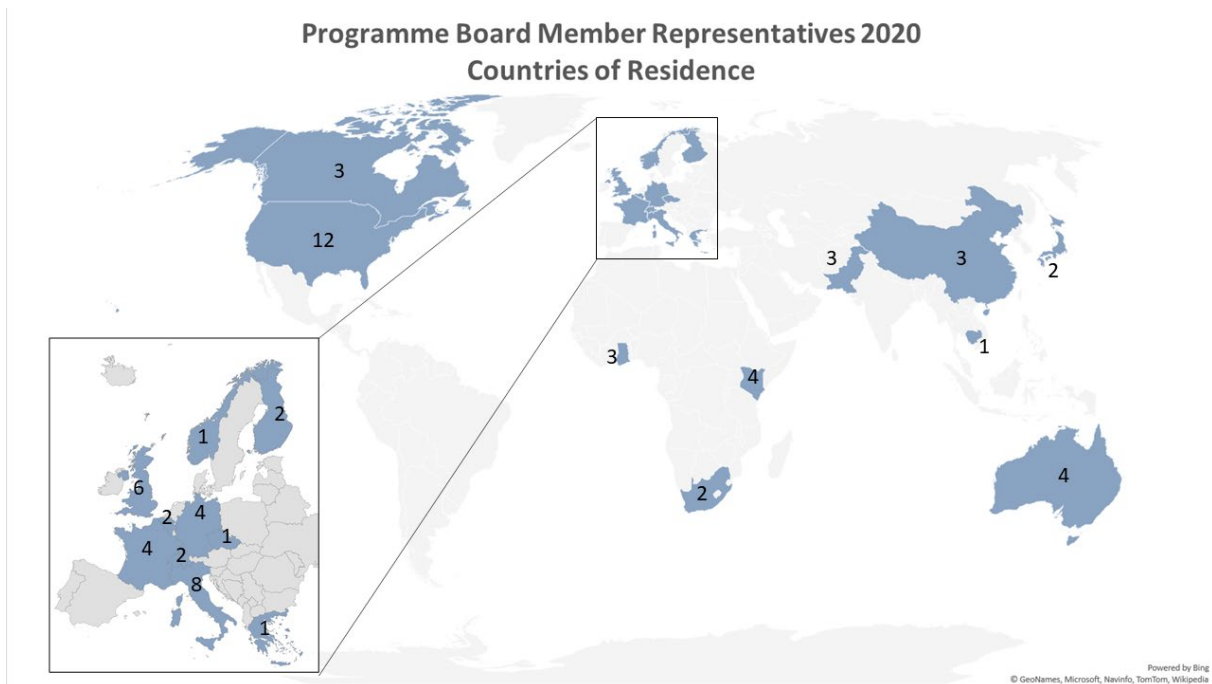


Figure 4: Geographic distribution of Programme Board member representatives in 2020. Countries of residence are highlighted in blue; the number of representatives per country is also provided.

3.1.3 Working Group (WG) composition

As of fall 2020, 373 nominations and expressions of interest from individuals across the world to join one or more GEO working groups were received by the Secretariat for the four existing working groups; only 15 of these nominations and expressions of interest have so far been not approved. As of October 2020, there are 53 members (31 men, 21 women) of the Capacity Development WG; 94 members (63 men, 31 women) of the Climate Change WG; 91 members (58 men, 29 women) of the Disaster Risk Reduction WG; and 64 members (46 men, 18 women) of the Data WG. Women are thus under-represented in all working group. The current 302 WG members are primarily based in Europe (N=92) and the Americas (N=114); representation from Africa (N=55), Asia-Oceania (N=38) and the Commonwealth of Independent States (CIS; N=3) is substantially lower.

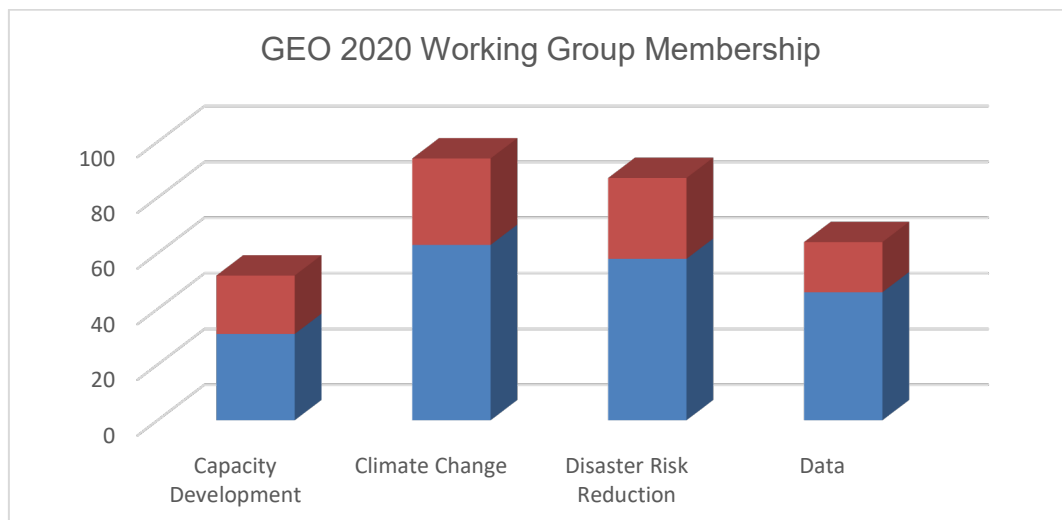


Figure 5: Proportion of men (in blue) and women (in orange) on the Working Groups in 2020.

3.2 Participants in GEO events

3.2.1 2019 GEO week

We analysed data for GEO-XVI, held in 2019 in Canberra, Australia, to assess gender and geographical diversity among (1) plenary speakers, and (2) speakers at the Industry Track event held during the week. These data showed that speakers were more likely to be men (66% of the plenary speakers and 70% of the speakers at the Industry Track event were men) and from wealthy developed nations (with, e.g., 80% of the speakers at the Industry Track event being from Australia, Europe, or North America). Interestingly, we noted an interaction between gender and geographical distribution where gender information per geographic region was available (plenary sessions), with biased representation in favour of men being particularly strong among the Asia/Oceania contingent (8 of the 9 speakers from this contingent were men).

3.2.2 2020 GEO week (virtual event)

We analysed data on gender and geographical diversity for the speakers (n=21) and moderators (n=2) of the three sessions (welcome session, deriving value from GEO and the future of open data) listed on the [GEO week 2020 programme](#).¹ Out of the 21 speakers listed, 4 were from North America, 4 from Europe, 2 from Africa, 4 from Asia, 4 from South America, 2 from Oceania and 1 from CIS (Ukraine). Three of these speakers were women (2 from Europe, one from South America), while 18 were men. Only two moderators were listed for these three sessions: one man (from the EU) and one woman (from the US). The welcome session of the GEO week is meant to provide opening remarks from GEO Co-Chairs and the GEO Secretariat Director; it is worth noting that all co-chairs for this 2020 edition were men. The last time GEO had a woman as a Co-Chair at such event was in 2016, when the US Co-Chair was held by Kathryn Sullivan.

We also obtained gender and geographic distribution data from the 2020 Industry track. Out of the 37 speakers for this event, 26 were men (70%) and 11 were women (30%). Twenty of the speakers were from Africa, 8 from Europe, 2 from Asia, 1 from Australia, 1 from Belize and 5 from North America. The 11 women who spoke at the event were from Australia (n=1), Africa (n=5), USA (n=3), France (n=1) and Belize (n=1).

3.2.3 2020 GEO virtual symposium

We obtained information from 77 participants, 51 of which provided information on their gender, ethnicity, and impairments. Responses came from 35 countries; 14 from India (19%) and 31 from the wealthy developed nations. Surveys were in majority filled by men (N=34, 67%). A majority of respondents described themselves as mid-career professionals (26%) or senior professionals (38%); 16% described themselves as students, and 12% as young professionals. 74% of the respondents described their ethnical background Asian (28%), White (24%) or Black (16%); only 2% described their ethnical background as Indigenous, and 3% as Middle Eastern. 70% of the respondents reported having no mental or physical impairments; 8% reported having one or more physical impairments, and 6% reported experiencing mental health issues. 56% of the respondents described themselves as having no caring responsibilities, while 40% described themselves as the primary carer.

¹ <https://www.earthobservations.org/geoweeek2020.php>

3.3 Awardees

In 2019, the GEO Programme Board launched its annual individual excellence awards, presented to individuals in the GEO community who have demonstrated exceptional personal commitment to the GEO mission and vision. Twenty applications for these awards were received by the Programme Board, with only 12 of them (9 men and 3 women) meeting the eligibility criteria. These came from America (US; N=5), Asia and Oceania (Japan and Australia; N=3) and Europe (N=4); none came from Africa or CIS. All the 2019 awardees were based in North America (2 women, 1 man).

In 2020, 11 applications for these awards were received by the Programme Board. Only 10 of these 11 nominations were eligible (2 women, 8 men); these came from the US (N=4), Japan (N=2), UK (N=1), France (N=1), Ukraine (N=1) and Australia (N=1). The 2020 awardees were based in North America and Asia (2 men, 1 woman).

The geographic distribution of nominees and awardees for the 2019-2020 period are detailed in Table 2.

Table 2: Geographic distribution of nominees for 2019-2020

Region	Number of nominees	Number of awardees
Africa	0	0
America	9	4
Asia & Oceania	6	2
CIS	1	0
Europe	6	0
Total	22	0

3.4 Recruitment

3.4.1 GEO Secretariat Director recruitment

There have been three GEO Secretariat Directors since GEO’s launch in 2005: Jose Achache (France, man), Barbara Ryan (USA, woman) and Gilberto Camara (Brazil, man). Data relative to the 2018 recruitment of the GEO Director (which led to the recruitment of Gilberto Camara) was available for analysis. Eighty-four individuals from 37 countries applied for this position; a large majority of these applicants were men (N=74, 88%) and from wealthy developed nations (N=42, 50%). No woman (out of 7 candidates) was shortlisted for the position.

The term of the current GEO Director ends in June of 2021. A new Director needs to be appointed by December 31, 2020, based on GEO’s Rules of Procedure. GEO Plenary has the authority to delegate the selection of the GEO Secretariat Director to the GEO Executive Committee based on GEO Rule of Procedure 3.3. In November 2019, the Executive Committee appointed a GEO Secretariat Director Selection Committee consisting of the representatives of GEO’s five regional caucuses.

The Panel kicked off its work on January 17, 2020, with the drafting of the Secretariat Director position description based on a discussion of key attributes GEO would seek in a successful candidate. This became the basis for the Vacancy Notice subsequently published by the World Meteorological Organization on 1 April 2020 with a closing date of 6 May 2020. Fifty-eight

individuals from 34 countries applied for the position. The table below identifies the age, gender, and region of the individuals in the pool of applicants. The Selection Panel chose seven candidates for interview and psychometric testing. Each of the seven finalists (three women from the USA and France, and four men from Spain, Tunisia, China, and Italy) participated in a virtual interview with the Selection Panel in September 2020. The Selection Committee submitted a list of its three top candidates to the Executive Committee for final decision; two of the three were women. The Executive Committee met on October 21 and selected a woman from the United States to be GEO’s fourth Secretariat Director. Her term begins in June 2021. The generational, geographic and gender distribution of the applicants is detailed in Table 3.

Table 3: Generational, geographic and gender distribution of the applicants to the 2020 recruitment process for the GEO Secretariat Director position.

Number of applicants	58
Average age	48
Maximum age	73
Minimum age	31
Proportion of women	22.4%
Proportion of men	77.6%
Proportion of applicants from Africa	26%
Proportion of applicants from Asia	9%
Proportion of applicants from South America	3%
Proportion of applicants from North America, Central America, and the Caribbean	16%
Proportion of applicants from Europe	47%

4 RECOMMENDATIONS

4.1 Future data collection

This report represents GEO’s first attempt to collect information on the diversity of people that underpins its make-up and activity. Gender and geographic distribution were assumed from names, pictures, and institutional affiliations, as opposed to being gathered from surveys. This approach constrains how many genders can be considered and is problematic as it enforces gender stereotyping (Williams & Philips 2016). In addition, it leads to error that is not possible to quantify based on the information available to the Subgroup. Because of the significant amount of time required to go through all existing records, and the limitations linked to assessing protected characteristics of individuals, data gathering could only be carried out for a selective number of events and years.

Comprehensive and systematic data collection protocols are of paramount importance in advancing GEO’s diversity objectives; without disaggregated data, it is impossible to assess trends, or the effectiveness of various actions and initiatives (Rosser et al. 2019). We strongly recommend the rapid adoption of simple but systematic protocols to monitor changes in geography, gender, and generation distribution over time, using approaches that do not rely on external parties’ assumptions about protected characteristics of individuals. Adoption of these protocols should be done in a sensitive and appropriate way. Registration processes clearly asking for information on gender, geography and generation for recruitment, award

nomination, event participation (either as speakers or attendees) and membership to bodies such as the Programme Board or the Working Groups could be an easy way to collect information on personal characteristics. These data should be reported on annually to the Programme Board. The collection of data on personal characteristics distribution has been successfully trialled by the Secretariat in June 2020, and the formulations used could be replicated to monitor diversity across a range of events and groups.

Understanding the possible root causes of the patterns in geographic and gender diversity highlighted in this report is of paramount importance to progress any future equality, diversity, and inclusion agenda. Doing so will require the collection of new quantitative and qualitative data, to identify the most common major impediments (Rosser et al. 2019). Mapping the potential factors and processes shaping current geographic and gender representations and designing data collection protocols that help test the validity of these assumptions, are thus important next steps for the Subgroup. The Subgroup plans to detail its next steps in its upcoming strategy, which will be informed by this report and the discussions that will follow the submission of this report to GEO Programmes Board and Executive Committee.

Trends in diversity metrics should only be interpreted in context, benchmarking data against expectations for the sector considered (Rosser et al. 2019). At this stage, it has been difficult to find reliable and adequate benchmarking data to compare GEO's Equality, Diversity and Inclusion performance against expectations based on the level of diversity found in the community it aims to represent. Further work should focus on gathering such data, for example, by asking member organizations to share information on the level of diversity among their staff or conduct a survey to establish what a diverse representation in GEO should look like.

4.2 Improving diversity in the Subgroup

Although much effort was devoted to engaging and identifying GEO members willing to participate in the Subgroup, this report was ultimately compiled by nine middle-aged women, who primarily reside in wealthy developed nations. This lack of diversity likely hampers the Subgroup's ability to (i) generate a comprehensive evidence base to capture the issues undermining equality, diversity, and inclusion in GEO; (ii), design solutions that deliver favourable outcomes for all the communities GEO aims to serve, and (iii) ensure that the solutions put in place are valued and adopted by a wide majority of stakeholders, so that progress can happen. There is a real need to increase diversity in participation in the Subgroup; our hope is that this first report will help convince a wider diversity of people to join the group.

4.3 Enhancing diversity in representation

As detailed in this report, geographic and gender representation in working groups is biased towards men in wealthy developed nations. Actions that promote gender and geographic diversity in these groups would help address this imbalance; these could include (1) developing region-specific calls, encouraging their translation in local languages, to join these working groups; (2) communicating more openly about the lack of geographic and gender diversity in these entities, and among the GEO community as a whole; (3) solicitate nominations by group members that encourage specific region and/or gender participation; (4) mandating working group leads to regularly and publicly report on diversity in their working groups to the group members and ensure that the Secretariat regularly report on diversity in working groups to the Programme Board; (5) nominating a diversity focal point within the Secretariat, who could

oversee and encourage dialogue between community members on diversity and inclusion issues, and (6) developing and promoting a diversity statement from GEO, that clearly defines expectations in terms of gender, geographic and generational diversity within GEO entities such as working groups.

Similarly, our report shows that gender representation in the Programme Boards is biased towards men. Actions that could promote gender diversity in this entity include (1) encouraging GEO members to nominate women as their principal or alternate; (2) communicating more openly about the lack of gender diversity in the Board, and among the GEO community as a whole; (3) asking Programmes Board representatives what their State/organization does to encourage diversity in representation and celebrating those who have a demonstrated commitment to diversity; and (4) mandating Programmes Board Chairs to regularly report on diversity in the Board to the Board members and ensure that the Secretariat regularly reports on diversity in the Programme Board to the Executive Committee.

4.4 Improving the visibility of under-represented groups

Humans are social creatures; the behaviours of others inspire our own and motivate us to join. Under this assumption (and research so far does tend to support this statement), improving the visibility of under-represented groups could represent an effective way to engage a greater diversity of people with GEO and its activities (see e.g., Martin 2014; Casadevall & Handelsman 2014; Microsoft 2017). As seen in this report, speakers at GEO events are primarily men, with roughly 30% of the speakers being identified as women; all men panels and co-chairs do occur on a regular basis. Importantly, access to speaker slots seem to be dependent on geographic locations; for some regions, such as Asia, there moreover seems to be a higher propensity for women speaking at events to be under-represented. If the idea is to engage a more diverse set of participants with GEO and GEO activities, then the current bias in visibility should be addressed. Options for action may include (1) providing guidelines and establishing clear expectations about diversity in GEO events, making it for example clear that panels and co-chairs consisting of entirely men are strongly discouraged; (2) opening some speakers slots for nomination by GEO regions, encouraging the nominations of under-represented groups to speak at certain GEO events; (3) mandating the Secretariat to regularly report on rationale for speaker selection and speaker diversity at major GEO events to the Programmes Board.

Interestingly, the European Geosciences Union (EGU) has announced a new Equality, Diversity and Inclusion logo to be used to identify sessions and events run by a team of conveners that fulfils specific [Equality, Diversity and Inclusion criteria](#)². For an EGU session to be branded with the new logo in 2021, it must:

1. Include conveners from multiple countries and institutes, preferably with a diverse representation of geoscientists from the wider European community or beyond;
2. Have conveners from different career stages, including at least one early career speaker; and
3. Include conveners that represent more than one form of gender identity.

Any EGU session convened by teams that fulfil all three criteria will be eligible to display the new logo. A similar initiative for GEO could help improve the visibility of under-represented groups.

² <https://www.egu.eu/news/689/egu-announces-new-edi-logo-for-the-2021-general-assembly/>

Improving the visibility of under-represented groups could also be achieved through targeted social media campaigns and changes in the current design and content of the GEO website. For example, campaigns highlighting a diverse set of GEO members could be run on a regular basis; the GEO website could have an Equality, Diversity and Inclusion section where information on actions to improve and celebrate diversity could be highlighted; the GEO website could also be reviewed, to ensure that diversity in gender, geography and generation is taken into account when making decisions about which pictures to use, and to ensure that gender sensitive and inclusive language is considered.

Pro-actively and regularly engaging with regional GEOs to identify tailored solutions for promoting Equality, Diversity and Inclusion is another important step for improving the visibility of under-represented groups in GEO. Different Regional networks may indeed find one 'model' more suitable for them than others. Identifying regional champions, and partnering with the private sector (small, medium, and large companies) operating within those regions and with whose mission this topic aligns should also be envisaged.

4.5 Improving diversity in GEO leadership

Data available so far revealed that most senior positions in GEO are occupied by middle-aged to senior men, a common pattern in most organizations across wealthy developed nations (Rhode 2017). The recent GEO Secretariat Director recruitment and selection process may indicate a departure from the past, at least in terms of gender equality. There is evidence that a lack of diversity in top positions can negatively impact the delivery of forward-thinking and progressive visions, and altogether reduce adaptive capacity, engagement, and success (Herring 2009; Hoogendoorn et al. 2013). Nurturing the development of a diverse set of talents and ensuring that recruitment processes attract and retain diversity the whole way through, is of critical importance for addressing the lack of diversity at the top. Options for action may include (1) establishing clear expectations about gender and geographic diversity in leadership, including all senior roles in the Secretariat; the Programme Board co-chairs; and the Working Groups/foundational tasks/flagships/initiatives leads; (2) mandating the Secretariat to regularly report on leadership diversity to the Executive Committee; (3) promoting EDI training to all recruitment panel members, including unconscious bias training; (4) developing leadership mentoring opportunities, prioritizing under-represented groups; 5) mandating the Secretariat develop and maintain a repository of Equality, Diversity and Inclusion “examples of success” to further strengthen the case for implementing diversity and inclusion throughout the GEO community.

4.6 Connecting with existing Equality, Diversity, and Inclusion initiatives

Boosting diversity in Earth observation communities is a goal shared by multiple organisations and initiatives. Much could be achieved by developing new, collaborative opportunities for engagement around equality, diversity, and inclusion issues. Organizations such as the American Geophysical Union, the Institute of Electrical and Electronics Engineers and the International Astronautical Congress have councils, task forces and committees focused on diversity and inclusion. Initiatives such as Women In Geospatial, Ladies of Landsat, Youth mappers, ESRI young professionals, Women in NASA or Women in Copernicus are already actively engaging the Earth observation community to broaden representation and enhanced the visibility of under-represented groups.

The GEO Secretariat has started to connect with these relevant stakeholders. We strongly support this move and recommend greater engagement from GEO with these organisations and initiatives, particularly when it comes to develop collaborative events (e.g., webinars,

social media campaigns, networking opportunities) and initiatives (e.g., mentoring programme, awards).

5 REFERENCES

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