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## **Draft Report of GEO-X 15-16 January 2014 Geneva, Switzerland**

**Wednesday, 15 January 2014**

Plenary began at 9:05 am.

### **1 OPENING OF THE SESSION**

The GEO-X Plenary Meeting was chaired by **Dr Kathryn Sullivan**, Acting Under Secretary of Commerce for Oceans and Atmosphere and Acting NOAA Administrator, Department of Commerce, United States of America. She opened the Plenary and gave the floor to **Dr Karine Siegwart**, Vice Director of the Federal Office for the Environment (FOEN), and GEO Principal, Switzerland.

#### **1.1 Welcome from Switzerland**

**Dr Siegwart** welcomed Ministers and Delegates to Geneva, and noted that the GEO Secretariat's proximity to many of the UN agencies relevant to the objectives of GEO makes it possible to develop synergies and collaboration among the various organizations. Siegwart remarked that Switzerland is involved in many aspects of GEO-related work, including hydrology, through MeteoSuisse and FOEN. She noted that the GEO-X Plenary and Geneva Ministerial Summit have the highest number of participants and Ministers in the history of GEO. She concluded by stating that, for GEO to create a better future for society, the community will need to complete the first Implementation Plan by 2015; enhance the availability of products and services; and continue the work of GEO for another decade.

#### **1.2 Opening Remarks**

(All speakers thanked the Swiss Confederation for hosting the conference.)

The **GEO Co-Chair for the United States of America, Dr Kathryn Sullivan**, in her capacity as Chair of the Session, thanked the Swiss Confederation for making the meeting possible. She lauded the efforts of all participants to increase the benefits to society through GEO's high-impact activities. Dr Sullivan stated that the week's meetings were all about the future, building on GEO's previous successes. She noted that society has seen evidence of how open, accessible data and information can drive business applications and innovation. In this era, good, publically available data can save lives, speed relief to disaster victims, provide information to decision makers, and drive sustainability, employment, jobs and profitability. Overall, open data has led to better governance and new and improved products. Dr Sullivan indicated that GEO's achievements to date have established a baseline. The two days of Plenary were to focus on important decisions to put GEO on a launch pad for a second decade. Plenary will ask the Ministers to approve GEO's continuation based on preparations by the Post-2015 Working Group, Ministerial Working Group, GEO Secretariat and many volunteers. She thanked Plenary for joining to help close out Chapter One of GEO, and open Chapter Two.

The **GEO Co-Chair for the People's Republic of China, Dr Jianlin Cao**, stated that Plenary allows the community to assess GEO's progress since last Plenary, and also confirm the future of GEO. He

noted the successes of GEONETCast, AfriGEOSS and GEOGLAM, and stated that Asian nations are building national and regional GEOSS structures. Construction of these resources has been greatly enhanced by needs, citing floods in the Northeast Region of China and the Australian bushfires. For example, research in countries such as China, India and Mongolia have established Early Warning Systems through GEOSS. The first training workshop of the China Space Agency at the Asia-Pacific Symposium in India was a major success. Dr Cao also introduced the latest developments with China GEO, which includes 19 ministries, adding that national-scale data sharing is increasing. For example, China has begun to publish studies on biodiversity and ecosystems, and global land cover data sets have been contributed to GEOSS. He noted that the Chinese CO<sub>2</sub> satellite will be launched in 2015 which will contribute to CO<sub>2</sub> monitoring in connection with global warming research.

The **GEO Co-Chair for the European Commission, Dr Rudolf Strohmeier**, anticipating that a green light would be given to GEO to carry on for another 10 years said that it will be crucial to develop the details of the next Implementation Plan (IP). For this, the European caucus has supported the inclusion of a point in the Ministerial agenda giving the opportunity to Ministers to provide guidance on the level of ambition of the next phase of GEO. Dr Strohmeier raised the question of how the Implementation Plan can be prepared to assure sound organisation of GEO into the future. Yet, he stressed that it would be a mistake to focus only on the future. Rather, it is necessary to emphasize both GEO's success up to now and the continuation of its work during the remaining two years of the current Implementation Plan. The EC will continue to support the further development of GEOSS, as well as new initiatives that emerge. Dr Strohmeier noted that, under the European Commission's new seven year Framework Programme for Research - Horizon 2020 - significant support will be provided to the research and innovation component of the GEO initiative until 2020. One example is the €20,000,000 earmarked to support a project which will contribute to the deployment of an Integrated Atlantic Ocean Observing System building on existing capacities on both sides of the Atlantic. He stated further that the Copernicus Programme, including the five Sentinel satellites, will be a unique global space infrastructure contributing to the GEOSS.

The **GEO Co-Chair for Republic of South Africa, Dr Philemon Mjwara**, indicated that South Africa will continue to pursue AfriGEOSS and will work to coordinate activities to contribute to GEOSS under this framework. He noted the need to restore the high political profile GEO enjoyed at its inception. He concluded by thanking his fellow Co-Chairs, the GEO Executive Committee and GEO Secretariat for the collegial environment in which GEO performs its work.

The **GEO Secretariat Director, Ms Barbara Ryan**, noted that Plenary is an event that acknowledges the contributions of hundreds of organizations and thousands of individuals around the world. She indicated there would be opportunity for Plenary to provide guidance for the future of GEO, stating that the more guidance GEO receives, reflective of the successes and failures of the past, the better GEO will be able to chart its future.

### **1.3 Administrative Announcements**

**Conference Coordinator Mr Elhoussiene Gouaini** made several announcements regarding administrative arrangements for the meeting.

### **1.4 Adoption of Agenda (Plenary Document 1)**

**Plenary** adopted the Agenda with no modification.

### **1.5 Recognition of New Members (Plenary Document 2)**

The **Chair** stated that Georgia applied for Membership in early 2013, and since any nation that is a Member State of the United Nations may become a Member of GEO, the application for Georgia's Membership was graciously acknowledged.

The **GEO Principal for Georgia** addressed the Plenary on behalf of the Minister of the Environment and Natural Resources Protection. Georgia expressed its appreciation to Plenary and the GEO Secretariat for endorsing its application to become GEO's 90<sup>th</sup> Member, especially on the occasion of GEO's 10<sup>th</sup> anniversary. Georgia also acknowledged the support of the European Commission's Seventh Framework Programme for Research and of the University of Geneva in funding the EnviroGRIDS project. The country is working to provide public access to data now under the administration of the Ministry of the Environment. Georgia pledged to be active in GEO and will work to establish a single coordinating mechanism within the country to improve data management.

### 1.6 Recognition of Participating Organizations and Observers (Plenary Document 3)

The **Chair** noted that Revision 3 of Plenary Document 3 had been released on 14 January and then recalled the criteria to become a Participating Organization (PO) (i.e., an applicant must be an intergovernmental, international, or a regional organization with a mandate in Earth observations). She noted that the Executive Committee recommended that all applicants listed in Revision 3 be accepted as POs. The Chair indicated that the Secure World Foundation (SWF) had applied to move from an Observer to a full PO. The Executive Committee had recommended that the application for Observer status from the International Committee on the International Global Monitoring Aerospace System (IGMASS) Project Implementation (ICPI) await the results of bilateral discussions between China and the Russian Federation. The Chair indicated that the Executive Committee held a fruitful discussion about the role of, and GEO's philosophy towards POs, focusing on whether GEO wants to be expansive or more restrictive. In agreeing to support the applications for the status of Participating Organisations and Observer, EXCOM determined that a process to review the contributions of all Members and POs to GEOSS. should be developed and implemented The Chair concluded by stating that all of the PO applicants are strong contributors, in some cases more than current POs, and that the Executive Committee recommended all Participating Organization applicants and Observer applicants be accepted by Plenary. The [Executive Summary Report of the 30th Executive Committee Meeting](#) provides a complete list of new Participating Organizations.

Plenary approved the slate of applicants.

### 1.7 Approval of GEO-IX Report (Plenary Document 4)

Plenary approved the document without comment.

The **Chair** recessed the meeting for the official opening of the GEO-X Exhibition.

## 2 GEO TO 2025

### 2.1 Introduction to the GEO Summit by the Ministerial Working Group

The **Secretariat Director** recognized the Ministerial Working Group (MWG) Co-Chairs, **Dr Jose Romero, Switzerland; Dr Stephen Briggs, European Space Agency; Professor Ezio Bussolletti, Italy; and Dr Leonard Hirsch, United States.** The GEO Secretariat staff support was provided by **Dr Giovanni Rum.** The MWG was comprised of approximately 20 members from the GEO community, and was responsible for developing the documents contained in the Ministerial Folder.

### 2.2 Geneva Ministerial Summit Draft Agenda and Content of Ministerial Folder

#### Documents for Ministerial Summit (Document MS 1)

**MWG Co-Chair Dr Romero** noted that the GEO-IX Plenary in Brazil gave the MWG its mandate. He expressed the hope that the Ministers would adopt the draft Declaration and reviewed each document, noting their dual purpose of highlighting GEO's numerous achievements, as well as the work ahead. He pointed out that once the Ministers decide to continue GEO and begin its second

phase, then a number of elements will require guidance from them, including drafting of the new Implementation Plan to articulate the future vision and hoped for achievements of GEO. Dr Romero reminded Plenary that the draft Declaration had been distributed to the GEO Principals and the broader GEO Community on several occasions. He acknowledged that slight changes or modifications to the document may be required, but the MWG felt that the draft achieved a good balance, as the text had been refined several times.

### 2.3 Vision for GEO 2025 - Document for Ministerial Summit (Document MS 2)

The **Chair** explained that this document was the end product of the work of the Post-2015 Working Group (PWG) which consulted closely with the GEO Community. She acknowledged the PWG Co-Chairs (**Mr Gilles Ollier, European Commission; Mr Mmboneni Muofhe, South Africa; and Mr Peter Colohan, United States**), the full PWG, and **Dr Douglas Cripe, GEO Secretariat**, all of whom helped develop the document.

**PWG Co-Chair Mr Muofhe** introduced the document and moved directly to comments from Plenary.

**Plenary** thanked the authors of the *Vision for GEO 2025* and generally endorsed all the Recommendations. Plenary made particular mention of the importance of: the coordination of space-based, airborne and *in situ* networks; forging links with users of networks; providing ongoing support to incubators for business; encouraging adoption of data sharing principles; increasing coordination of networks themselves; and coordinating interaction with other global organizations. Plenary indicated the importance of highlighting the economic benefits of EO to help increase national EO budgets. Plenary also urged that future projects contain concrete and measureable activities and suggested leaving open for discussion the future definition of Societal Benefit Areas (SBAs), noting, for example that a merging of the Ecosystems and Biodiversity SBAs could open up new synergies, and that there were other potential nexuses that could frame GEO's future strategy (e.g., water-energy-food). Plenary also noted that the IP should address increased engagement with the private sector, as well as issues of governance, while still maintaining GEO's intergovernmental character. Plenary agreed to the following modification:

#### 4.3 Engagement with Developing Countries

.....To promote the advancement of Earth observation technologies and the further development of national and regional capacity to absorb and use these technologies *and apply associated data*, GEO will take the lead in mobilizing appropriate resources through partnerships with relevant governmental, non-governmental and multilateral development institutions.

A revised version of *Vision for GEO 2025*, incorporating this modification, was provided to Plenary on Thursday, 16 January.

### 2.4 GEO Progress Report - Document for Ministerial Summit (Document MS 3)

**Mr Robert Samors, GEO Secretariat**, presented the *Report on Progress 2011-2013* noting that it was designed to be a brief, non-technical overview of GEO's progress since the last Ministerial. The report highlights the extraordinary contributions from the GEO community and builds on the 4-page *Highlight Fact Sheet*. The *Report on Progress* will provide the basis for a more comprehensive compendium of GEO's accomplishments in its first decade that will be released at the next Ministerial.

### 2.5 Ministerial Guidance on the Evolution of GEOSS – Document for Ministerial Summit (Document MS 4)

#### Preliminary Guidance for GEO 2025 (Plenary Document 5)

The **South Africa Co-Chair, Dr Mjwara**, expressed appreciation to **Ms Yana Gevorgyan, United States**, and the entire drafting team. He explained that the group interpreted its mandate from the

Executive Committee as examining the evolution of GEO. The Dr Mjwara reminded Plenary that GEO was born out of the 2002 World Summit on Sustainable Development in Johannesburg and, at the time, the concept of GEO had a great deal of political support, which remains the benchmark of the type of political support that should be maintained. At the time, GEO was asked to do two things: first, develop a system of systems to help us understand how the entire Earth system works; and, second, to provide data for informed decisions.

Dr Mjwara reviewed the documents, stating that regarding GEO's political support there are mixed reviews. There have been some successes, but political support has dwindled to a certain degree. For example, GEO was not "at the table" at the United Nations Conference on Sustainable Development Rio+20 talks; the EC, Japan and others negotiated GEO's presence in a Side Event. GEO needs to get back to the main table. On the other hand, GEO has been asked by the G20 Agriculture Ministers to answer questions of food security, and deliver the data necessary to do so. GEO needs to find a way to advocate the value of EO and the need to improve global capacity to observe the Earth. How GEO advocates the added value it brings needs to be articulated carefully. Global initiatives can help with this.

Dr Mjwara then spoke of the importance of data sharing principles, asking, what does this really mean? Data availability has improved, but does the developing world have the capacity to use it to inform decision-making? How do we make sure this data is turned into useful information? He also commented on the rapid evolution of the GEOSS Common Infrastructure (GCI), indicating that it will become a very large system. Yet, has the GEO community fully comprehended the scale of GEOSS and whether we have the capacity, as primarily public sector organizations, to fully develop GEOSS or should we also draw on expertise in other communities? In addition, what are the human resource implications of this infrastructure? What are the financial implications for construction and maintenance of GEOSS? What partnerships with the private sector and others should we be considering?

Dr Mjwara stated that there were three scenarios laid out in the documents, especially regarding resources: 1) stay at the same level of financial, human and other contributions (although he noted this is not in keeping with the vision of GEO he had described); 2) make a moderate increase in resources; or 3) increase contributions to the GEO Trust Fund for a more ambitious scope. The Dr Mjwara asked Plenary to: 1) give the Executive Committee a mandate to think about the idea presented in the document and return to the next Plenary with a narrower set of options and an evolution of additional ideas; and 2) conduct a session where the comfort level of Ministers around these three paths could be tested, as well as allow Ministers to provide a mandate to identify concrete proposals about how GEO should evolve that could be brought forward at the next Ministerial.

**Plenary** noted its appreciation of the documents and referenced again the need to increase GEO's political support across its Member countries, and to raise its profile in the international arena. The emerging Sustainable Development Goals were highlighted as a possible opportunity. Plenary stressed the need for GEO to move forward from gathering data to transforming data into information that decision makers can use. Plenary also emphasized the importance of GEO engaging with the private sector, beginning with defining its value ("value proposition") to this community. Plenary noted that any acceleration of GEOSS implementation will require sustained commitments from Members and POs, more concerted collaborations on a regional scale, and strategic engagement with broader stakeholder communities to identify data gaps and user requirements. Plenary observed that data sharing continues to be an important foundation of GEO, but sufficient attention must also be paid to ensuring developing countries have the capacity to access, analyze and use the data.

## 2.6 GEO Highlights Fact Sheet – Document for Ministerial Summit (Document MS 5)

The **Chair** noted this document is for information.



## 2.7 Preparation of the next GEOSS Implementation Plan (Plenary Document 6)

**European Commission Co-Chair, Dr Strohmeier** explained that the anticipated adoption of the Ministerial Declaration would set in train a process for renewing GEO for a further ten years. The text of the Declaration specifically refers to the need to prepare a new 10-Year Implementation Plan. The design of this process is critical to ensure GEO's success. Translating the outcome of the Summit into reality required prompt action. The Co-Chairs had prepared a proposal tabled at this meeting. GEO Plenary and the Executive Committee needed to move quickly to establish the drafting team. Dr Strohmeier indicated that the cornerstone of the proposal was that the GEO community must be in control of the Implementation Plan development and in control of the process. The proposal is that Plenary (acting in anticipation of the adoption of the Declaration), mandates the GEO Co-Chairs and ExCom begin the process to establish a Working Group immediately following the Ministerial. The group would be composed of 'distinguished experts' from each Caucus and supported by a writing team. The idea is to take advantage of best practices in GEO in the formulation of an Implementation Plan Working Group (IPWG). He requested that Plenary accept that the Executive Committee and the GEO Co-Chairs, on behalf of Plenary, steer and supervise the process, but that the preparation and delivery of the Implementation Plan would be the responsibility of the Working Group. It was intended to ask for nominations immediately following the Ministerial. The mandate of the Working Group would end after the GEO-XII Plenary when the Implementation Plan would be put forward for acceptance. A draft Implementation Plan would be presented to the GEO-XI Plenary.

**Plenary** accepted the proposal for the establishment of the IPWG and urged inclusion of a wide range of experts to reflect the full range of GEO's stakeholders. Plenary noted the Implementation Plan must include three important elements: a clear articulation of the expected outcome at the end of 10 years; recognition that GEO's progress is based, in no small part, on PO contributions and should consider how to better integrate POs into GEO; and determine the most effective membership in the Executive Committee given the current size of GEO community. Plenary discussed the composition of the IPWG and clarified that each Caucus could nominate *up to 3 distinguished experts and up to 2 writing team members*.

**Plenary** approved the document.

## 3 DRAFT GENEVA DECLARATION – DOCUMENT FOR MINISTERIAL SUMMIT (DOCUMENT MS 6)

**MWG Co-Chair, Dr Ezio Bussoletti** introduced the document stating that the draft Declaration had been distributed to the GEO community, but, personally, he still had some concern regarding the sub-title, stating that it did not fully describe what is in the content.

**Plenary** discussed two possible changes to the document: adding *and information* to the sub-title; and substituting *environmental* for *Earth* (Page 1 Paragraph 6). The second modification was withdrawn.

Discussion of the Declaration was held over until Thursday, 16 January.

**Plenary** recessed at 13:00 and reconvened at 14:30.

The **Chair** noted that regarding the development of the next Implementation Plan, there clearly were a number of substantive questions that Plenary needed to consider carefully, including how to incorporate what has been learned from the Monitoring & Evaluation Working Group and other GEO structures, as well as from various delegations. She urged the Caucuses to emphasize identifying distinguished experts who could be from universities, research institutions, etc., to make sure the quality of the debate is of the same caliber as that engaged in by the founders of GEO in 2002. The Chair stated this would be a deep and important intellectual exercise. Plenary will be relying on the Executive Committee as the steering group to orchestrate the various pieces so that they all come together.

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## 4 GEOSS IMPLEMENTATION AND HIGHLIGHTS

### 4.1 Assessment of Progress – Target and Task (Plenary Document 7)

**Dr Stuart Marsh, United Kingdom** presented the report, noting that the Boards made their first assessment in Brazil in 2012, which was very well received. He emphasized the Boards are using the same structure as previously, but the process is evolving and improving, resulting in more information being used for the assessment. He stressed that the assessment is a measure of whether the Board believes a target will be met. A green notation indicates a target will be achieved without major intervention; yellow indicates some intervention is needed; and red signifies that the target will not be achieved without major intervention. Also, red at a lower level in the pyramid does not necessarily translate into problems higher up, and vice-versa. Dr Marsh strongly urged all Task Leads to complete Component Sheets. He indicated that a good deal of information comes from the annual Work Plan Symposium.

**Plenary** noted the usefulness of the report and indicated a need for better indicators of data quality. Plenary discussed whether the Work Plan should include targets that are *aspirational* even if they are not *achievable*. Plenary also discussed the relation between observations and modelling. A Working Group on Data Management was proposed to address data quality issues.

**Plenary** approved the document.

### 4.2 Monitoring and Evaluation

#### Fourth Evaluation of GEOSS Implementation (Plenary Document 8)

**Mr John Adamec, Co-Chair, Monitoring & Evaluation Working Group (M&E WG):** presented the evaluation of the Disasters, Energy and Health Tasks, reminding Plenary that evaluations are conducted by teams comprised of nominations from Members and POs. He indicated that the evaluation was conducted between September 2012 and June 2013. Sources of evidence included interviews and surveys, reviews of documents and literature, and three case studies. Evaluators found some successes, but also gaps in documentation and activities, and disconnects in how pieces would create a unified GEOSS. The evaluation team made five recommendations relating to: 1) missing components in the Disasters and Energy SBAs; 2) improving the system to meet reporting requirements; 3) improving coordination across SBAs, across Tasks and within SBAs (citing GEO BON as a best practice); 4) removing barriers to stakeholder understanding of and capitalizing on GEOSS; and 5) improving documentation of the engagement of users and other stakeholders, and strengthening existing user engagement techniques and practices. The Evaluation team also recommended that the final GEOSS Evaluation begin earlier; that it be provided financial resources to support the evaluation and evaluators; and that Task performance indicators be developed.

**Plenary** heard a Management response from the Executive Committee acknowledging that the M&E WG evaluation highlighted a number of issues GEO needs to examine more closely in preparation for the post-2015 era. The Executive Committee will work with the GEO Secretariat and various components of the GEO structure to address the recommendations. The Executive Committee noted that planning for the final GEOSS Evaluation must begin immediately and acknowledged the need for clearer performance indicators, noting that the Implementation Plan development process will include a review of Strategic Targets and Objectives. Plenary noted the disparity between implementing Tasks and achieving goals, and suggested creating a Disaster Coordination Working Group to prepare inputs into the next IP for disaster management.

**Plenary** approved the document.

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## Progress on Implementation of Recommendations from GEOSS Evaluations (Plenary Document 9)

**Mr John Adamec, Co-Chair, Monitoring & Evaluation Working Group (M&E WG)** presented a recap of evaluations completed to date, noting that 38 recommendations had been made through Plenary IX – 33 rated Positive; and 5 rated Negative. He stated that the ratings are not static or permanent; they will be revisited periodically. The M&E WG hoped that issuing the Report would generate more responses. Mr Adamec outlined the schedule of upcoming Evaluations with the Fifth Evaluation (Water, Weather and Climate) will be completed in May 2014. The M&E WG has tried a new approach with this evaluation, sending a letter to all GEO Principals asking for recommendations of user communities that could be queried for information related to the Tasks. Unfortunately, the WG has not received many responses and Mr Adamec stressed the need for better response rates to make the evaluation process more useful and instructive. He also stated that the final comprehensive Evaluation will occur in 2014-2015, with a call for Nominations in early 2014 and the evaluation process beginning in May 2014.

**Plenary** welcomed the improvements to the document, noting that it was easier to understand and track recommendations. Plenary requested that the rating for the **GEOSS Common Infrastructure (GCI)** be revised upward to reflect the significant progress made during the Sprint to Summit in the latter half of 2013.

**Plenary** approved the document, pending the modification to the rating of the GCI (from red to yellow to reflect the recent rapid progress in the GCI's development, particularly in the last quarter of 2013) as proposed by the European Commission and endorsed by the European Space Agency and the United States.

### 4.3 GEO 2012-2015 Work Plan Update (Plenary Document 10)

**Dr Alexia Massacand, GEO Secretariat**, presented the main changes to the Work Plan as including six new Task Components: two under Blue Planet; one under Land cover for Africa; two under Disasters; and the Global Network for Mountain Environments. Four Task Components have been moved or merged.

**Plenary** approved the document as a living document, pending two modifications requested by POGO and the United States. POGO requested two modifications be made in Oceans and Society: Blue Planet/Services for the Coastal Zone (SB-01-C4): 1) reinstate a priority item regarding the assessment of observational requirements for decadal forecasts of coastal sea-level and the development of a related demonstration forecasting service; and 2) include a more robust statement regarding the assessments of climate change in the Caribbean islands. The United States requested to be listed as a Lead in Global Land Cover/Land Cover for Africa (SB-02-C4); requested to be added as a Lead in Global Carbon Observation and Analysis/Integrated Global Carbon Observation and Analysis System (CL-02-C1); and volunteered to be Lead Point of Contact for Climate Information for Adaptation/Easy Access to, and Use of, Climate Information (CL-01-C4).

### 4.4 GEOSS Implementation Highlights

**Dr Alexia Massacand, GEO Secretariat**, presented the document highlighting GEO's progress over the past year, reflecting the many contributions of Members and POs. She noted that GEO membership is growing, but gaps still exist, most notably in Africa and the Middle East. Dr Massacand indicated that GEO will continue to build connections and synergies among POs to optimize their contributions. She stressed the beginning of a new era in the evolution of GEOSS through the continued improvements made to the GEOSS Portal, further development of the GCI infrastructure, and the capability created by the Discovery and Access Broker (DAB). Through the DAB, users can access entire data systems (clouds) from the public sector. At present, through the GEOSS Portal, the DAB brokers access to more than 20 data systems containing more than 7 million data collections/sets, translating into 65 million data fields. 50 million of these files are tagged as



Data-Core, meaning full compliance with the current GEOSS Data Sharing Principles and, thus, full and open access to the data. She noted that the Data Sharing Working Group is working on clarification of the concept of “full and open” and is constructing a redefinition of the GEO Data Sharing Principles. Dr Massacand noted that the DSWG needs more representation from South America, Middle East and Asia-Pacific regions. She also provided numerous examples of how GEOSS is providing data and information for decision making, including GEOGLAM (Crop Monitoring), EnerGEO (Renewable Energy), EOMiners, GMOS (Mercury/Minamata Convention), Carbon (Global Carbon Budget, GEO Carbon); GFOI (Forest Monitoring and capacity-building), GEO BON (Biodiversity/Map of Life), Health (Malaria/Meningitis), Urban (Urban Supersites), Disasters (Geohazard Supersites), Weather (TIGGE/High impact weather), Climate (Climate change adaptation/GCOS/ESV), Water (Rainfall), Cold Regions (new initiative), and Oceans (Blue Planet). She also noted GEO activities in capacity-building and user engagement, indicating that GEO will seek better coordination of these efforts by developing a capacity building inventory. Dr Massacand also noted the continued success of GEONETCast and discussed the need to mobilize resources for GEOSS development, citing the EU’s contribution of more than EUR 220.000.000 through the FP7 Research Programme. She commented further on the emerging connections of GEO, Future Earth and the Belmont Forum – noting that all of the countries involved in the Belmont Forum are also GEO Members. Dr Massacand concluded by introducing a video produced by Japan and the Water Cycle Community of Practice.

**Plenary** appreciated the presentation and noted the importance of further validation of high resolution global land cover datasets. Plenary heard a brief report on the Data Sharing Working Group which included a request for more Co-Chair participation from underrepresented areas, including South America, the Middle East and Asia-Pacific.

#### 4.5 Featured Initiatives

##### **Global Network for Observations and Information in Mountain Environments (GEO-GNOME)**

**Dr Antonello Provenzale, Italy:** presented the emerging initiative, explaining that mountains are a global environment which provides important resources, including water resources, ecosystems services, global biodiversity, cultural heritage, and food, energy and income to local populations. He noted that mountain regions contain more than 10% of the global population and provide important resources to downstream regions. They have been recognized by international initiatives (e.g., Rio+20) as important areas where sustainable development should be supported and encouraged. Dr Provenzale stressed that mountain regions are sensitive to global climate changes and other environmental changes, and must be better understood through monitoring and modelling. Monitoring mountain regions is difficult, and even the best models contain many uncertainties. Therefore, society needs to invest in measuring more and understanding more, but through application-driven research that is guided by the needs of society. He stated that GEO can make progress by sharing models, data and information; answering specific questions and filling gaps on specific issues, citing existing regional networks (e.g., ICIMOD, Pyrenees), but noted they should be better coordinated through a global network which would support different GEO Targets. GEO-GNOME will capitalize on existing research and make results available through the GEOSS Portal, and develop new initiatives based on data/information gaps, with a special focus on protected areas of international relevance – Mountain Supersites. Dr Provenzale stressed the need to create a network of stakeholders, define important questions and provide support to the development of adaptation measures. He also stressed that capacity building at the local, technical and citizen level is an important aspect of the initiative. GEO-GNOME will create highly visible outputs – websites, documentaries, exhibitions and booklets - that can raise awareness of the importance of these environments and their protection. The first international workshop will be held later in 2014.

### **AfriGEOSS (Plenary Document 11)**

**Ms Andiswa Mlisa, South Africa** (pending her secondment to the GEO Secretariat): made the presentation, noting that the African community within GEO has been taking stock of its current involvement and its post-2015 engagement, identifying both the contributions Africa can make and what benefits Africa can realize from greater participation in the development of GEOSS. The objectives of AfriGEOSS include the coordination of all relevant stakeholders in Africa – the institutions and agencies working within the Earth observation arena – and providing a platform for countries to participate in GEO and contribute to building GEOSS. AfriGEOSS is looking to assist in knowledge sharing and global collaborations, recognizing it must work collaboratively to build sustainable solutions for Africa and contribute to global solutions. Ms Mlisa reminded Plenary it had endorsed AfriGEOSS in 2012. The initiative was launched in November 2013. AfriGEOSS has been incorporated in the agenda of the Africa Union Commission’s African Ministers of Science and Technology which will serve as the coordinating face for all EO activities in Africa. AfriGEOSS has a two-pronged implementation approach: a bottom-up strategy that considers how existing national initiatives informed by country priorities can contribute most to GEO/GEOSS; and a top-down approach looking at GEO global initiatives and how they can respond to Africa’s priorities and needs. Both strategies will focus on infrastructure and service applications, establishing sub-regional roadmaps; and re-establishing strong contacts with GEO Principals and increasing the number of African countries engaged in AfriGEOSS. She added that a Steering/Advisory Committee was being established and would include a range of stakeholders, including GEO Principals, the African Union Commission, African Development Bank and other international partners. The AfriGEOSS Working Group will establish Terms of Reference and, over the next couple of months, work both to strengthen existing, and develop new, relationships with the international community, as well as strengthen the African community itself in order to make AfriGEOSS a reality.

**Plenary** applauded both initiatives, highlighting specific Member and EO contributions to each one, and pledged to support them as much as possible. Plenary noted potential synergies of the initiatives with existing Tasks and the work of various Member agencies and Participating Organizations.

The **Chair** noted the high level of interest from Plenary for both GEO-GNOME and AfriGEOSS and indicated they both go forward with the full support and endorsement of Plenary.

#### **4.6 GEOSS Common Infrastructure Demonstration**

**Dr Guido Colangeli, ESA** presented a demonstration of the GEOSS Portal.

The **Chair** applauded the efforts devoted to the Portal over the past six months and encouraged Plenary to visit the GCI booth at the EC exhibition, participate in testing the GEOSS Portal and provide user feedback. She also noted the Portal can be accessed at [www.geoportal.org](http://www.geoportal.org).

**Plenary** adjourned at 18:00.

**Thursday, 16 January**

**Plenary** convened at 8:30 am.

The **Chair** reflected on the power of the new and improved GEOSS Common Infrastructure and its expanded capabilities in searching and querying, and the increased flexibility of engaging with the interface, all of which will allow much easier and greater access to all of the available GEO resources. The Chair recognized the contributions of ESA, CNR, JRC, USGS and other providers to the GCI. She also reminded Plenary that the success of the GCI relies on the active participation of the GEO community. She urged data providers to increase their efforts to coordinate with GCI providers to make sure resources are integrated into and used through the GCI; and users of EO to actively explore, test and use the GEOSS Portal and give feedback to the GCI team.

### **Administrative Announcements**

**Conference Coordinator Mr Elhoussiene Gouaini** made several announcements.

### **3 DRAFT GENEVA DECLARATION CONT.**

**Plenary** considered and rejected a proposal to include “and information” in the Declaration subtitle, citing the thorough process of selecting the title and the importance of presenting Ministerial with a “clean” document.

**Plenary** approved the Declaration for adoption by the Ministers with no modification.

### **5 2013 REPORT OF THE EXECUTIVE COMMITTEE (PLENARY DOCUMENT 12)**

The **South Africa Co-Chair, Dr Mjwara**, presented the document, highlighting the Executive Committee’s oversight of preparations for the Ministerial Summit and providing guidance to the Post-2015 Working Group and Ministerial Working Group and related activities; substantial engagement in the further development of the GEOSS Common Infrastructure; executive oversight of the special initiatives (GEOGLAM, GFOI, Blue Planet and AfriGEOSS); and active engagement with the Monitoring and Evaluation Working Group. The Co-Chair noted the Executive Committee’s call to create a Budget subcommittee to work in partnership with the Secretariat to prepare a programmatic annex to the Budget (ref. 7.3 Secretariat Operations Budget for 2014).

**Plenary** approved the document pending completion of the Executive Committee’s evaluation of the Secretariat. The final document is available on the GEO website. [http://earthobservations.org/documents/geo\\_x/GEO-X\\_12\\_\(Rev2\)\\_Report\\_of\\_the\\_Executive\\_Committee.pdf](http://earthobservations.org/documents/geo_x/GEO-X_12_(Rev2)_Report_of_the_Executive_Committee.pdf)

### **6 FORMAL STATEMENTS**

**Members and Participating Organizations** delivered Formal Statements to **Plenary** related to GEOSS Implementation. Statements may be found at the following web link <http://earthobservations.org/geo10.shtml>.

The **Chair** noted the significant contributions and accomplishments of Members in the realization of GEOSS. She made particular note of changes in data policies and practices to provide full and open data, including the provision of the SPOT Image archive (France), data from JAXA sensors (Japan), and national hydromet service data from 2014 (Sweden), as well as the establishment of new, national GEO structures in Chile, China and Spain.

## 7 FINANCIAL REPORTS

### 7.1 2012 Financial Statements and Report of the External Auditors (Document 13)

**Luckson Ngwira, Chief, Finance Division, WMO,** made the presentation, noting that WMO provides the financial administration for GEO. He indicated that GEO follows the IPSAS accounting guidelines which require the presentation of various types and categories of information. He further noted the challenge of aligning expenditures and income because of the unpredictable timing of GEO's income. He indicated GEO underspent its budget by 19% in 2012.

**Hakim Hadjeres, Swiss Federal Audit Office,** presented the findings of the audit. The results of the audit were positive; the quality of the financial statements was good; and there were no recommendations beyond those pertaining to the Financial Operations environment that were provided to, and accepted by, WMO. Mr Hadjeres stated that the audit team was well experienced and was satisfied that the audit results are reliable.

**Plenary** approved the document.

### 7.2 Interim Report on Income (Document 14)

**Ms Patricia Geddes, GEO Secretariat,** presented the Interim Report, indicating the information is provisional as the financial records for the year 2013 are not yet closed. She noted that all pledges have been received except two which are in process (Australia support for GFOI and Gabon's contribution to the Trust Fund). The preliminary report is showing an excess of income over expenditure of CHF 424,000.

**Plenary** made no comment on this document which was for information only.

### 7.3 Secretariat Operations Budget for 2014 (Plenary Document 15)

**Ms Patricia Geddes, GEO Secretariat,** presented the proposed budget, noting that the Executive Committee had requested additional details which the GEO Secretariat will provide moving forward. The document is in conformance with IPSAS standards.

The **Chair** stated that the Executive Committee commented very positively with great appreciation on the Secretariat's sound management of GEO's finances over the last year and a half and indicated that the Executive Committee had made the following request of the Secretariat and asked Plenary to concur with the request.

"The Executive Committee (ExCom) appreciates the Secretariat's sound management of the GEO Trust Fund, and recommends the adoption of the GEO budget top line amount and major categories of expenditure for 2014 as prescribed by IPSAS. Plenary is asked to concur with the ExCom request that the Secretariat, with the assistance of a budget subcommittee, develop an annex that provides greater detail of the programmatic elements and strategic directions of the Secretariat's annual expenditures, both planned and actual. The 2014 budget annex should be presented to the Executive Committee at their March 2014 meeting. This budget annex is designed to further build donor confidence in the financial arrangements for, and management of, GEO, and ultimately strengthen GEO's financial position."

The **Chair** explained that the Annex would be a descriptive companion to the budget that would provide Plenary a clearer understanding of the programmatic uses to which finances are being applied, and the link of those program purposes to GEO's Strategic objectives. The Annex would become part of the materials presented to Plenary in the future.

**Plenary** commended the Secretariat's sound management practices and supported the creation of a Budget Subcommittee by the Executive Committee to develop a programmatic analysis of expenditures to accompany future budget reports. Plenary noted that it is important to provide more detail about the budget, including indications of strategic directions and how funds would be used, in

order to present more convincing arguments to support contributions to GEO. Plenary also urged that participation in the working group to develop the Annex be open to Members beyond the Executive Committee.

**Plenary** was advised that China will contribute USD200,000 again in 2014 and will continue support of two secondees in the GEO Secretariat; South Africa will increase its 2014 contribution from ZAR2,000,000 to ZAR3,000,000 and will support one secondee in the GEO Secretariat; Australia pledged AUD50,000, in addition to earlier contributions; and Switzerland pledged investments in Secretariat infrastructure.

**Plenary** approved the 2014 Budget and concurred with the request for additional programmatic detail. The committee developing the Programmatic Annex will be open to Members beyond the Executive Committee.

#### **7.4 Management of GEO Trust Fund (Plenary Document 16)**

**Ms Barbara Ryan, Secretariat Director**, presented the document and described the need to create a **Working Capital Fund (WCF)** of 1M CHF that would be used to fund the day-to-day operations of Secretariat in advance of receiving annual contributions from Member governments. Trends over the last 5 years (2007 to 2012) show that 60% of the funds are received in the latter part of the calendar year. The WCF would be financed through any year end savings, although additional contributions earmarked for WCF would be accepted. Year-end savings would stop being placed in the WCF once the 1M CHF threshold is reached. It is expected that an initial instalment of approximately 200,000 CHF from a 2013 budget surplus would provide the foundation for the WCF.

**Ms Ryan** also discussed a proposal to establish a 10 percent assessment on funds earmarked for **special initiatives** (e.g., Global Forest Observations initiative (GFOI) to cover costs associated with Secretariat support services provided specifically for those special initiatives. The 10 percent assessment rate would be only on expenditures associated with those earmarked funds and apply to Executive oversight, External Relations, Work Plan Coordination, Finance and Administration, and IT Support. She noted that most Members who contribute to GEO Trust Fund contribute to all SBAs so there is a need to be clear about how Secretariat support of special initiatives is being funded.

The **Chair** noted that the special initiatives assessment has been discussed by the last two Plenaries and extensively by the Executive Committee. She stated that the Executive Committee feels the proposal strikes a balance between the interests of all parties, both to support special initiatives and to make sure the special initiatives do not drain the limited resources of the Secretariat and GEO budget generally. ExCom recommends acceptance of assessment for special initiatives.

**Plenary** approved creation of the Working Capital Fund and the assessment on Special Initiative expenditure, and stressed the importance of clarifying the language concerning the assessment.

## **8 RULES OF PROCEDURE UPDATE**

### **Renewal of Implementation Board Membership (Plenary Document 17)**

**Plenary** approved the document.

### **Adoption of Rules of Procedure (Plenary Document 18)**

The **Secretariat Director** presented modifications that would clarify language relating to the timelines of actions, and delete a duplicated reference to private sector engagement. She also described modifications to language regarding Working Groups and Implementation Boards, and clarification of language relating to Participating Organizations.

**Plenary** noted the need to examine the role of POs prior to GEO-XI and approved the document.



## 9 PRESENTATION OF NOMINEES FOR THE EXECUTIVE COMMITTEE

**Plenary** acknowledged the slate of nominees (Appendix 1).

## 10 ANNOUNCEMENT OF GEO-XI

**Plenary** was advised that the country of **Gabon** offered to host GEO-XI in **November 2014**. (Dates have subsequently been identified as Thursday, 13 November and Friday, 14 November 2014).

The **Chair** asked **Plenary** for **Any Other Business**. **Plenary** was reminded of the importance of continued access to radio frequencies crucial to Earth observations and encouraged Members to discuss this issue with their governments.

## 11 REVIEW OF SESSION OUTCOMES

**Session Outcomes** are found in Appendix 2.

## 12 CONCLUDING REMARKS

The **Co-Chairs** and **Secretariat Director** thanked **Plenary** for its contributions and perspective on the important matters facing GEO. The speakers acknowledged GEO's progress to date and potential for further accomplishments, as well as **Plenary's** guidance to the Implementation Plan Working Group on planning the future of GEO. Speakers expressed appreciation to the Swiss Government for its role as host.

**Plenary** adjourned at 15:15 pm.

A list of **Plenary** participants and an historical chart of attendance is found in Appendix 3.

APPENDIX 1

**GEO Executive Committee 2014**

**Africa**

- > Republic of South Africa\*
- > Gabon

**Americas**

- > United States\*
- > Argentina
- > Colombia

**CIS**

- > Russian Federation

**Asia/Oceania**

- > China\*
- > Australia
- > Japan
- > Korea

**Europe**

- > European Commission\*
- > Estonia
- > Italy

\* indicates Co-Chair

APPENDIX 2

**Review of Session Outcomes of GEO-X  
15-16 January 2014  
Geneva, Switzerland**

**Wednesday, 15 January 2014**

**1 Opening of the session**

1.1 Welcome from Switzerland

1.2 Opening Remarks

- Kathryn Sullivan, Acting Under Secretary of Commerce for Oceans and Atmosphere and Acting NOAA Administrator, Department of Commerce, United States of America (Chair of the Session);
- Jianlin Cao, Vice Minister, the Ministry of Science and Technology of the People's Republic of China;
- Rudolf Strohmeier, Deputy Director General Directorate-General for Research and Innovation, European Commission;
- Philemon Mjwara, Director-General, Department of Science and Technology, Republic of South Africa; and
- Barbara Ryan, Director, GEO Secretariat.

1.3 Administrative Announcements

1.4 Adoption of Agenda (Plenary Document 1) *(for approval)*

**Approved.**

1.5 Recognition of New Members (Plenary Document 2) *(for information)*

**One new Member acknowledged – Georgia.**

1.6 Recognition of Participating Organizations and Observers (Plenary Document 3) *(for approval)*

**Approved (Rev 3). Creative Commons Organization (CC), Economic and Social Commission for Asia and Pacific (ESCAP), Federation of Earth Science Information Partners (ESIP), European Union Satellite Centre (EU SatCen), International Astronautical Federation (IAF), Interbalkan Environment Centre (IEC), International Institute for GEO-Information Science and Earth Observation (ITC), International**

**Union of GEODESY and Geophysics (IUGG), The Marine Technology Society (MTS) and Secure World Foundation (SWF) recognized as Participating Organizations.**

**Ecuador and University Corporation for Atmospheric Research (UCAR) recognized as Observers.**

1.7 Approval of GEO-IX Report (Plenary Document 4) *(for approval)*

**Approved.**

## 2 GEO to 2025

2.1 Introduction to GEO Summit by Ministerial Working Group

2.2 Geneva Ministerial Summit Draft Agenda and Content of Ministerial Folder – Document for Ministerial Summit (Document MS 1) *(for information)*

2.3 Vision for GEO 2025 - Document for Ministerial Summit (Document MS 2) *(for approval)*

**Approved, with modification by Australia.**

2.4 GEO Progress Report - Document for Ministerial Summit (Document MS 3) *(for information)*

2.5 Ministerial Guidance on the Evolution of GEOSS – Document for Ministerial Summit (Document MS 4) *(for consultation)*

- Preliminary Guidance for GEO 2025 (Plenary Document 5) *(for information)*

2.6 GEO Highlights Fact Sheet – Document for Ministerial Summit (Document MS 5) *(for information)*

2.7 Preparation of the next GEOSS Implementation Plan (Plenary Document 6) *(for approval)*

**Approved (Rev 1).**

3 **Draft Geneva Declaration** – Document for Ministerial Summit (Document MS 6) *(for consultation)*

## 4 GEOSS Implementation and Highlights

4.1 Assessment of Progress – Target and Task (Plenary Document 7) *(for approval)*

**Approved.**

4.2 Monitoring and Evaluation

- Fourth Evaluation of GEOSS Implementation (Plenary Document 8) *(for approval)*;

**Approved.**

- Progress on Implementation of Recommendations from GEOSS Evaluations (Plenary Document 9) *(for approval)*;

**Approved, with modification by EC, endorsed by ESA and US.**

- Overview of the final Evaluation *(oral presentation)*.

4.3 GEO 2012-2015 Work Plan Update (Plenary Document 10) *(for approval)*

**Approved, with modifications by POGO and US.**

4.4 GEOSS Implementation Highlights (*oral presentation*)

4.5 Featured Initiatives

- Global Network for Observations and Information in Mountain Environments (GEO-GNOME) (*oral presentation*);
- AfriGEOSS (Plenary Document 11) (*for consultation*).

4.6 GEOSS Common Infrastructure (*demonstration*)

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Thursday, 16 January 2014

3 **Draft Geneva Declaration** – Document for Ministerial Summit (Document MS 6) (cont'd)

5 **2013 Report of the Executive Committee** (Plenary Document 12) (*for approval*)

**Approved, pending completion of Executive Committee evaluation of GEO Secretariat.**

6 **Formal Statements from Members and Participating Organizations on key events and activities** (cont'd)

*(Statements limited to maximum 3 minutes on subjects related to GEOSS Implementation)*

7 **Financial Reports**

7.1 2012 Financial Statements and Report of the External Auditor (Plenary Document 13) (*for approval*)

**Approved.**

7.2 Interim Report on Income and Expenditure 2013 (1 January to 26 November) (Plenary Document 14) (*for information*)

7.3 Secretariat Operations Budget for 2014 (Plenary Document 15) (*for approval*)

**Approved.**

- **Creation of subcommittee for programmatic analysis of budget accepted.**

- **Membership open to Plenary; communicate nominees to Secretariat by 31 January 2014.**

7.4 Management of GEO Trust Fund (Plenary Document 16) (*for approval*)

- Working Capital Fund;

**Approved.**

- Management of contributions for Special Initiatives in the GEO Trust Fund.

**Approved, with modification of title (revision 1).**

8 **Rules of Procedure Update**

- Renewal of Implementation Board Membership (Plenary Document 17) (*for approval*)

**Approved.**

- Adoption of Rules of Procedure (Plenary Document 18) (*for approval*)

**Approved.**

- **Executive Committee requested to explore expanded participation in Executive Committee, for presentation at GEO-XI Plenary.**

**9 Presentation of the Nominees for the Executive Committee**

- **Africa:** Republic of South Africa (Co-Chair), Gabon
- **Americas:** USA (Co-Chair), Argentina (2014), Columbia, Mexico (2015)
- **Asia/Oceania:** China (Co-Chair), Australia, Japan, Korea
- **CIS:** Russian Federation
- **Europe:** European Commission (Co-Chair), Estonia, Italy

**10 Announcement of GEO-XI**

**Gabon offered to host GEO-XI in November 2014. (Dates subsequently identified as 13-14 November, 2014.)**

**11 Review of Session Outcomes**

**AOB: Radio Frequency issue.**

**12 Concluding Remarks**

**DRAFT**

**APPENDIX 3**

**LIST OF PARTICIPANTS OF GEO-X**

**15-16 JANUARY 2014  
GENEVA, SWITZERLAND**

**MEMBERS**

**Australia**

Susan Barrell  
Stuart Minchin  
Michael Grundy  
Alex Held

**Austria**

Liane Lippsky  
Michael Staudinger  
Rainer Stowasser

**Bangladesh**

Khondaker Asaduzzaman  
Shamsuddin Ahmed

**Belgium**

Bertrand de Crombrughe  
Pierre Brusselmans

**Brazil**

Leonel Perondi  
Regina Cordeiro Dunlop  
Hilcéa Ferreira  
André Misi  
Joao Lucas Quental Novaes De Almeida

**Canada**

David Grimes  
Luc Brulé  
Danielle Lacasse  
Heather Aucoin  
Mike Gill  
Ian Jarvis  
Michael Ott

**Chile**

Luciano Parodi  
Jaime Moscoso  
Cristián Streeter

**China**

Jianlin Cao  
Xiaohan Liao  
Zhiping Cai  
Zhongxin Chen  
Jun Chen  
Linhao Chen  
Xi Chen  
Hongbing Chen  
Xiao Cheng  
Rui Cheng  
Yan Cui  
Peng Gong  
Huadong Guo  
Guoqing Li  
Deren Li  
Jiahong Li  
Zengyuan Li  
Shunlin Liang  
Chuang Liu  
Jie Liu  
Yi Liu  
Yi Luan  
Ling Shi  
Wei Wang  
Liming Wang  
Lixin Wu  
Jungang Yang  
Xianwu Yang  
Qi Yu  
Huanyin Yue  
Xingying Zhang  
Caisheng Zhao  
Ershun Zhong

**Colombia**

Pablo Vieira Samper  
Edersson Cabrera

Carlos Alfredo Carretero  
Nicolas Avila Vargar

**Cote d'Ivoire**

Kouadio Adjoumani  
Assi Laurent Ebakoue  
Martin Yeboua Kouassi  
Tiemoko Moriko

**Croatia**

Ivan Cacic  
Branka Ivancan-picek  
Vesna Vukovic

**Czech Republic**

Katerina Sequensová  
Radim Tolasz  
Martin Bulánek  
Jana Klanova

**Denmark**

Lars Prahm

**Egypt**

Leila Iskandar  
Amr Elsamak  
Mohamed Nasr  
Ahmed Shehabeldin

**Estonia**

Anu Reinart  
Reet Talkop

**European Commission**

Rudolf Stromeier  
Philippe Brunet  
Volker Andres  
Alessandro Annoni  
Boris Antic  
Yannick Arnaud  
Pierre Bahurel  
Lucy Bastin  
Alan Belward  
Michael Berger  
Noemie Bernede  
Florence Beroud  
Arne Berre  
Maria Betti  
Lorenzo Bigagli  
Palma Blonda  
Jon Blower  
Francesca Borga  
Tristan Brauchli  
Lieven Bydekerke  
Terry Callaghan  
Hervé Caumont

Luigi Ceccaroni  
Fabio Ciravegna  
Massimo Craglia  
Eric Delory  
Daniel Diaz  
Catherine Doldirina  
Mark Dowell  
Alan Edwards  
Pascal Evano  
Mauro Facchini  
Annette Filges  
Elizabeth Gil-Roldan  
Gregory Giuliani  
Yaniss Guigoz  
Christoph Häuser  
Thomas Heege  
Chris Higgins  
Hendrik Huwald  
Tim Jacobs  
Simon Jirka  
Nuria Julia  
Astrid Koch  
Pierre Lacroix  
Philippe Ledent  
Anthony Lehmann  
Stanislaw Lewinski  
Eliana Li Santi  
Hai-Ying Liu  
Roberta Lupis  
Chris Lush  
Victoria Lush  
Gonzalo Carlos Malvarez  
Joan Maso  
Josiane Masson  
Andreas Matheus  
Milosz Mazurek  
Stefania Mazzeo  
Miquel Ninyerola  
Daniel Nust  
Gilles Ollier  
Nicola Osborne  
Florian Pappenberger  
Jean-Daniel Paris  
Roberto Pastres  
Petros Patias  
Juan Pedro Perez  
Andreas Petzold  
Vincent-Henri Peuch  
Daniel Quintart  
Nicolas Ray  
James Reid  
Charles Roberts

Jose Rubio Iglesias  
Peter Salamon  
Hannele Savela  
Dick Schaap  
Manuela Schlummer  
Nadine Schneider  
Michel Schouppe  
Ivette Serral  
Jane Shiel  
Harald Skinnemoen  
Bob Su  
Simon Thum  
Wim Timmermans  
Maud van den Broek  
Kurt Vandenberghe  
Christoph Waldmann  
Kym Watson  
Steven Weijs  
Jamie Williams  
Stuart Wrigley  
Yijian Zeng  
Silvo Žlebir

**Finland**

Mikko Strahlendorff  
Yrjö Sucksdorff

**France**

Dominique Marbouty  
Claude Boucher  
Claudie Carnec  
Daniel Cassard  
Stéphane Chevrel  
Steven Hosford  
Gonéri Le Cozannet  
Lionel Menard  
Thierry Ranchin  
François Robida  
Aurelie Sand  
Florian Thomas

**Gabon**

Tanguy Gahouma Bekale

**Georgia**

Ramaz Chitanava  
Nino Tskhadadze  
Nino Sharashidze

**Germany**

Paul Becker  
Carsten Dettmann  
Andreas Becker  
Thorsten Büßelberg  
Thomas Fitschen

Markus Heene  
Jörn Hoffmann  
Werner Kutsch  
Michael Nyenhuis  
Björn Oriwohl  
Gunter Schreier  
Helmut Staudenrausch  
Adrian Strauch

**Ghana**

Musheibu Mohammed-Alfa  
Daniel Amlalo

**Greece**

Evangelos Livieratos  
Vasileios Tritakis  
Ifigenia Ceramitsoglou  
Eleni Christia  
Dimitris Ioannou  
Haris Kontoes  
Canaris Tsinganos

**Indonesia**

Henry Bastaman  
Laksmi Dhewanthi  
Trizono Wibowo  
Adi Winarso

**Italy**

Ezio Bussoletti  
Maria Dalla Costa  
Maurizio Biasini  
Antonio Bombelli  
Giorgio Boni  
Nico Bonora  
Stefano Bruzzi  
Martina Bussettini  
Sergio Cinnirella  
Paolo Mazzetti  
Sandra Moscone  
Stefano Nativi  
Silvano Pecora  
Nicola Pirrone  
Antonello Provenzale  
Roberto Rudari  
Mattia Santoro  
Amedeo Trambasolo  
Stefania Traverso  
Elisa Vuillermoz

**Japan**

Keisuke Isogai  
Yoshiaki Kinoshita  
Toshio Koike  
Ryosuke Shibasaki



Eric Dupuy  
Masao Fukasawa  
Yukio Haruyama  
Yasushi Horikawa  
Chu Ishida  
Yoshiaki Ishida  
Koki Iwao  
Satoko Kanazawa  
Mariko Kato  
Takeshi Kawano  
Richard Lawford  
Yu Matsunaga  
Tsuneo Matsunaga  
Shijuan Pang  
Shinichi Sobue  
Taro Ubukawa  
Shizu Yabe  
Akiko Yamada

**Korea, Republic of**

Yunhwa Ko  
Won-Tae Kwon  
Chang Sun Cho  
Changwoo Hyun  
Hyun-Ok Kim  
Suho Lee  
Seung Kyun Park  
Chan-Ho Park  
Jae-Gwang Won

**Latvia**

Inita Stikute  
Raimonds Jansons  
Peteris Podvinskis

**Madagascar**

Jean Omer Beriziky  
Frederic Ramarolahivonjitiana  
Annick Andriamampianina  
Ambinintsoa  
Noasilalaonomenjanahary  
Claudia Rakotondrahanta  
Onja Rasamimanana  
Sadiah Irène Razafimandimby  
Solofo Razafitrimo  
Justin Tsofa

**Malaysia**

Che Gayah Ismail

**Mexico**

Enrique Pacheco  
Julio Castillo Urdapilleta  
Balan Gutierrez Herrera  
Raul Heredia

**Morocco**

Faical Souissi

**Netherlands**

Ger Nieuwpoort  
Frits Brouwer  
Ruud Grim  
Frank Lantsheer  
Mark Noort

**New Zealand**

Rob Deakin

**Niger**

Ali Mahamadou  
Ado Alhadji Abou  
Issoufou Wata Sama

**Nigeria**

Ganiyu Agbaje

**Norway**

Per-Erik Skrøvseth  
Øystein Nesje  
Bente Bye  
Dag Anders Moldestad  
Kjersti Sommerset

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Alberto Yanosky  
Isabel Gamarra De Fox

**Peru**

Jorge Pacheco Linares

**Philippines**

Cecilia B. Rebong  
Elizabeth Te  
Marivil Valles

**Portugal**

Miguel De Castro Neto

**Romania**

Tudor Prisecaru  
Marius Piso  
Maria Ciobanu  
Traian Filip  
Ion Nedelcu  
Antoaneta Popescu  
Florin Tudorie

**Russian Federation**

Alexander Makosko  
Valery Zaichko  
Zoya Andreeva  
Vasily Asmus  
Aleksander Davidyuk

Lev Desinov  
Andrey Emeliyanov  
Tamara Ganina  
Alexander Gusev  
Aleksander Konyakhin  
Sergey Kulichkov  
Sergey Mityushin  
Alexander Panfilov  
Oleg Shamanov  
Eugeny Vakulenko

**Serbia**

Vladan Kocic  
Jugoslav Nikolic

**Slovakia**

Vlasta Janova

**Slovenia**

Vojislav Suc  
Andrej Zitko

**South Africa**

Philemon Mjwara  
Lee Annamalai  
Lulekwa Makapela  
Sandile Malinga  
Andiswa Mlisa  
Nurunessa Moolla  
Humbulani Mudau  
Mmboneni Muofhe  
Terry Newby  
Imraan Saloojee  
Lerato Senoko  
Michele Walters

**Spain**

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Carmen Rus  
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Carlos Casanova Mateo  
Julio González Breña  
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Joan Maso  
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Fabio Fontana  
Nicolas Ray  
José Romero  
Gerhard Ulmann

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Ian Davidson  
Katherine Bass  
Ruth Boumphrey  
Ruth Kelman  
Stuart Marsh  
Jim Penman  
Carol Turley

**United States**

Kathryn Sullivan  
Michael Abrams  
John Adamec  
Madelyn Appelbaum  
Ann Bartuska  
Kate Becker  
Inbal Becker-reshef  
Eric Bridiers  
Bart Cobbs  
Peter Colohan  
David Crisp  
John Crowe  
Ivan Deloatch  
Matthew Druckenmiller  
Joy Durkin  
Gary Foley  
Kathleen Fontaine  
Michael Freilich  
Lawrence Friedl  
Yana Gevorgyan  
Steve Graham  
Leonard Hirsch  
Adrienne Hopper  
Winnie Humberson  
Libby Jewett  
Suzette Kimball  
Wendy Lubetkin  
Denise McWilliams  
Tracy Morgan  
Douglas Muchoney  
Douglas Nebert  
Jean Parcher  
Paul Patin  
Debra Peters

Norie Phillips  
David Reidmiller  
Nancy Searby  
Carrie Stokes  
Juli Trtanj  
Zdenka Willis  
Greg Withee

**Uzbekistan**

Sergey Myagkov

DRAFT

**PARTICIPATING ORGANIZATIONS****AARSE**

Olajide Kufonyi  
Tsehaie Woldai

**ACMAD**

Adama Diallo

**CEOS**

Alain Ratier  
Pascale Ultré-Guérard  
Robert Husband  
Kerry Sawyer  
Brent Smith

**CMO**

Tyrone Sutherland  
David Farrell

**COSPAR**

Jean-Louis Fellous  
David Halpern

**DANTE**

John Chevers

**DIVERSITAS**

Anne-Helene Prieur-Richard  
Gary Geller  
Henrique Pereira  
Robert Scholes

**ECMWF**

Alan Thorpe  
Jean-Noël Thepaut

**EEA**

Christian Steenmans  
Tim Haigh  
Mette Muller

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DRAFT

APPENDIX 3 CONT.

**Chart of GEO Plenary Attendance  
Members & Participating Organizations  
GEO-I – GEO-X**

