



GROUP ON
EARTH OBSERVATIONS

GEO-VIII

16-17 November 2011

Report of GEO-VII

Document 4

As accepted at GEO-VIII

REPORT of GEO-VII

3-4 November 2010

Beijing, China

1 OPENING OF SESSION

1.1 Opening Remarks

Mr Zheng Guoguang, the Group on Earth Observations (GEO) Co-Chair from China, chaired the GEO-VII Plenary. He opened the meeting by reminding participants of the many issues to be addressed over the course of the two days. These will include the preparations for the 5 November Ministerial, the review of progress on implementing the Global Earth Observation System of Systems (GEOSS), and plans for the future. He noted that GEO has achieved significant progress over the past five years and that the previous Ministerial, in Cape Town in 2007, marked a successful shift for GEOSS from the concept phase to the construction phase.

Ms Manuela Soares, the GEO Co-Chair from the European Commission (EC), highlighted the importance of learning from the first five years of GEOSS implementation so that the GEO community can plan effectively for the next five years. Many GEO Tasks have achieved great progress. The first GEO Work Plan Symposium, held in South Africa in May 2010, confirmed that proper management tools need to be put into place. She proposed the analogy of an automobile, built from many parts; GEO must ensure that it has all the necessary parts to construct GEOSS. She stressed the EC's commitment to building a high-quality GEOSS and to completing the GEOSS 10-Year Implementation Plan.

Mr Philemon Mjwara, the GEO Co-Chair from South Africa, noted that GEO has become a functional organization with a stable Secretariat. Critical data bases, such as the one maintained by the Global Biodiversity Information Facility (GBIF), have been established, the GEOSS Common Infrastructure (GCI) has made progress, external bodies such as the Convention on Biological Diversity (CBD) have recognized GEO's ability to contribute to their goals, and developing countries have started to see the benefits of GEOSS. It is time now for the GEO community to start planning for the post-2015 operations of GEOSS.

Ms Sherburne Abbott, the GEO Co-Chair from the United States, highlighted the important progress that GEO has made on ensuring full and open access to Earth observation data. GEO has laid the cornerstones of GEOSS; now it needs to develop more specific services and applications. The US is focusing in particular on monitoring the terrestrial biosphere, observations of the climate, and developing Earth observation services for public health.

Mr José Achache, the GEO Secretariat Director, observed that GEO-VII is being attended by the largest numbers of participants of any Plenary to date, with 54 delegations and 448 individuals accredited. He noted the important debates that would take place as well as the Exhibition, the video showcases, and the Report on Progress. It is vital that GEO build a cohesive and cross-cutting GEOSS that provides customized applications in the nine Societal Benefit Areas (SBAs).

1.2 Administrative Announcements

The GEO Exhibition was opened during the morning coffee break on the first day of the Plenary. The Secretariat Director introduced the Exhibition by suggesting that while the Plenary represented GEO, the Exhibition represented GEOSS. All aspects of GEOSS implementation were being featured, including the contributions of Members, Participating Organizations, Communities of Practice; the nine Societal Benefit Areas plus the four transverse areas; the GEOSS Common Infrastructure; and various observing, processing and distribution systems.

1.3 Adoption of Agenda (Document 1(Rev2)) (for acceptance)

The Chair introduced the draft agenda. Canada asked when would there be an opportunity to discuss the post-2015 period. The Secretariat Director suggested that this could take place during the discussion of the Mid-Term Evaluation Report, as the management response to this document proposes that the Executive Committee initiate work on the post-2015 issue. The agenda was accepted.

1.4 Recognition of New Members (Document 2(Rev2)) (for recognition)

The Chair announced that five new Members had joined GEO since the 2009 Plenary: Burkina Faso (joined 24 September), Ethiopia (4 October), Gabon (21 June), Ghana (19 October), and the Republic of Serbia (26 October). The GEO membership now includes 85 countries and the European Commission.

1.5 Statements from New Members

The Chair invited the new Members that were present to make a statement. The representative of Serbia expressed his country's gratitude and noted that Serbia is very active in meteorological and climate observation. He stressed the importance of cooperation at the national level and noted that membership in GEO promised greater access to global data on disasters, hydrology, climate and the environment.

1.6 Recognition of Participating Organizations (Document 3(Rev1)) (for decision)

The Secretariat Director presented the Executive Committee's recommendations concerning the applications from prospective GEO Participating Organizations. The Committee advised recognizing the African Centre of Meteorological Application for Development (ACMAD), the Great Lakes Observing System (GLOS) and the Regional Centre for Mapping of Resources for Development (RCMD) as Participating Organizations. It also recommended accepting the Asia-Pacific Space Cooperation Organization (APSCO) as an Observer. The Plenary welcomed the new Participating Organizations and Observer with a round of applause.

1.7 Approval of GEO-VI Report (Document 4) (for acceptance)

The Chair presented the draft report of the GEO-VI Plenary for approval. The United States, which hosted GEO-VI, stated that the Washington Plenary had succeeded in moving GEO forward and called the report an accurate summary of the discussions. The Plenary accepted the Report.

2 DRAFT BEIJING DECLARATION – DOCUMENT FOR MINISTERIAL SUMMIT (DOCUMENT MS 1)

The Chair proposed establishing an open-ended group of all interested Members and Participating Organizations to discuss the draft Declaration in advance of Friday's Ministerial Summit. He also proposed inviting Mr David Grimes, who co-chaired the 2010 Ministerial Task Force that prepared the draft Declaration, to chair the group. Mr Grimes then introduced the draft text, noting that it had been circulated to the GEO community and that several comments had already been received. The draft

Declaration describes the purpose and goals of GEOSS, requests Ministers to endorse the revised strategic targets, urges governments and organizations to sustain and enhance both in-situ and space-based observation systems, creates the GEOSS Data Collection of Open Resources for Everyone (the GEOSS Data-CORE), encourages United Nations bodies to continue contributing to GEOSS, and encourages Members to establish better national coordination mechanisms.

The Chair invited comments from the floor. The United States thanked the 2010 Task Force for its work and said that it would propose some minor changes regarding user engagement. Argentina said it would also provide some comments to the Secretariat. China noted that the draft Declaration had been prepared by China with support from the Task Force and the Secretariat. South Africa proposed strengthening the text concerning the science and technology needed for GEOSS implementation.

On the morning of the Plenary's second day (Thursday), Mr Grimes announced that the group assigned to review the draft Declaration had completed its task. The refined text was distributed to the Plenary, and no further changes were made. The draft text was accepted by acclamation and forwarded to the Ministerial.

Brazil welcomed the Declaration, calling it powerful and important for guiding the ongoing work on GEOSS. He noted with satisfaction the advances that it reflected relative to the Cape Town Declaration, in particular the much stronger language on the Data Sharing Principles and on capacity building. The references to actual activities such as the GEO Biodiversity Observation Network (GEO BON), the Forest Carbon Tracking Task, and the new global land-cover initiative will prove significant for GEO over the coming years.

3 REPORT ON PROGRESS – DOCUMENT FOR MINISTERIAL SUMMIT (DOCUMENT MS 2) (FOR INFORMATION)

The Chair introduced the item by stating that the Report on Progress describes GEO's achievements over the past five years and summarizes the advances made by each of the 44 Tasks in the GEO Work Plan. The Secretariat Director stated that it was an important information document that was complemented by the Work Plan Progress Report. He noted that the Task summaries had been contributed by Task leads from around the world, and that the report had been designed in Geneva and printed in Beijing, which symbolized the international and collaborative nature of GEO.

4 GEOSS IMPLEMENTATION PROGRESS AND HIGHLIGHTS

4.1 National and Regional Activities

The Chair invited participants to briefly describe how they are contributing to GEOSS implementation.

Japan reported that it launched the Greenhouse Gases Observing SATellite, "IBUKI" (GOSAT) in January 2009 and started to distribute data this past October. In 2010 the Advanced land observing Satellite (ALOS) provided observations of the Haitian and Chilean earthquakes. In March Japan contributed funds and support for the Asia-Pacific Symposium held in Indonesia; the Symposium promoted the Asia Water Cycle Initiative, APBON, Forest Carbon Tracking and ocean observations. Japan will host next year's Symposium in Tokyo. The 10th meeting of the Conference of the Parties to the Convention on Biological Diversity, held in Nagoya, provided support to GEO activities. Finally, Japan continues to develop the Data Integration and Analysis System (DIAS).

China is implementing its national GEOSS Plan which will provide services to users. It has launched several Earth observation satellites that will contribute to disaster monitoring and other activities. Data from these satellites have been provided to a variety of domestic and international users. More Earth observation satellites will be launched in the future as a contribution to GEOSS. Another key activity

has involved promoting the developing of an international agricultural and crop monitoring system as part of GEOSS; a management meeting for this effort was held in Beijing on the previous day.

The European Commission highlighted two major contributions to GEOSS. The first one is the Global Monitoring for Environment and Security (GMES) program, which is the European program for Earth observation being implemented by the European Space Agency, EUMETSAT, and the European Commission and its member states. The second is the 7th Framework Program (FP7) for environmental research. Recognizing that GEO provides a unique framework for international cooperation, the EU has supported GEO projects via the FP7 since 2007. Issues addressed by these projects have included the carbon cycle, the water cycle, the GEO Biodiversity Observation Network, data management systems, energy, capacity building and novel and cutting edge technologies.

South Africa reported on the good progress it has made in coordinating national activities. It has established a national space agency and plans to launch a forum to ensure a committed effort on space activities. Earth observation data processes have been developed and will be further improved. South Africa launched a satellite in order to collect data for itself but also for the rest of the African continent. It recognizes the contributions of Global Monitoring for Environment and Security (GMES) and Africa, the China Brazil Earth Resources Satellite (CBERS) programme, and the SensorWeb Task that it is leading together with US National Aeronautics and Space Administration (NASA). South Africa remains committed to working with other countries on Earth observation.

Germany has initiated a national coordination mechanism to improve national research funding. It is also evaluating the data needs of its national agencies. In June the German Aerospace Center (DLR) launched the Tadem-X satellite which over the next two years will produce a global digital elevation model at an unprecedented level of detail.

Chile recognizes that strengthening Earth observations in the nine Societal Benefit Areas will support its national development. It highlighted the benefits of international coordination and the importance of international organizations to increasing knowledge. Chile's Ministry of Economy is promoting through the Chilean Space Agency national space activities relating to science and technology and to emergencies networks. Chile will soon launch a high-resolution optical satellite that will focus on the issues of natural resources, disasters and landscape planning.

The United States noted that the White House and 15 federal agencies are participating in US GEO, reflecting a government-wide commitment to GEO. The US considers Earth observations to be an indispensable foundation for addressing today's challenges. It is launching an important new GEO initiative for developing a 30m global land cover data set to track land use and change. As a contribution the Forest Carbon Tracking Task the US also announced the SilvaCarbon programme for building capacity worldwide for accessing data. Other recent advances include the first unmanned underwater glider crossed the Atlantic, the launch of the AirNOW international system in Shanghai, the expansion of GEONETCast Americas, the development of the Himalayas node of SERVIR, and the recent US GEO report on Earth observations.

Canada highlighted its contributions to the GEO Joint Experiment for Crop Assessment and Monitoring (JECAM), including the Red River watershed JECAM Supersite and the global drought monitoring initiative. Canada is planning to launch three more radar satellites starting in 2017 to ensuring continuity in critical data sets. Most of the data acquired will be publicly available on line, consistent with the GEOSS Data Sharing Principles. Canada is actively supporting the monitoring & evaluation process and will remain fully engaged in GEO.

India is participating in GEOSS activities, including the Joint Experiment for Crop Assessment and Monitoring, which it supports with data from its remote sensing satellites. India is a co-chair of this activity and fully supports GEO's space activities.

The Netherlands has made all of its meteorological data fully available on the internet in response to the GEOSS Data Sharing Principles. It recently organized a workshop on cross-border GEOSS implementation. A Dutch instrument flying on a NASA satellite is measuring ozone, nitrogen dioxide and other gases in the atmosphere as well as air quality. From 2014 another instrument on a European Space Agency satellite will monitor greenhouse gases and other gases. The Netherlands also contributes to the Forest Carbon Tracking Task, including by supporting the production of 50m resolution land cover maps for the Borneo and Guiana demonstrator sites.

Spain has approved a new data policy for meteorological data that will soon ensure that they are freely accessible via the internet. Activities in Ibero-America include training courses for meteorologists, aerial observation, the distribution of EUMETCast devices for improving forecasts, and the Supersite for the Global Atmosphere Watch programme. Other activities include health-related projects for forecasting epidemics in the Sahel.

Norway is providing both financial and political support to GEO, in particular to the Forest Carbon Tracking Task. It also contributes to an observing system for supporting sustainable management of the Barents Sea, and it is leading an international programme partly funded by the European Union that seeks to integrate in-situ, space, water, sea and air-based observations for the Arctic region.

Indonesia hosted this year's GEOSS Asia-Pacific Symposium, which welcomed 220 participants and was supported by Japan and the Secretariat. To assist its response to a series of disasters, including flash floods, an earthquake, a tsunami and a volcanic eruption, Indonesia received vital support and remote sensing data from the Japan Aerospace Exploration Agency (JAXA), the German Aerospace Center (DLR), the International Charter on Space and Major Disasters, and the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER).

Italy continues to support the work of GEO through the contributions of devoted experts and institutions and a national GEO group. It seeks to link its experience to international coordination efforts such as the EGIDA project. Italy also contributes to developing a sustainable process for coordinating the activities of the Science and Technology Committee, and it participates in a number of GEO Tasks and sub-Tasks.

Based in Nepal, the International Centre for Integrated Mountain Development (ICIMOD) focuses on sustainable mountain development. It recently organized an international symposium on key applications for sustainable development and for bringing the benefits of Earth observation to mountain communities. Key GEO-related activities involve snow-cover mapping and the monitoring of land cover, carbon stocks, glaciers and disasters. ICIMOD is also engaging in broader climate issues at the global level.

The member agencies of the Committee on Earth Observation Satellites (CEOS) have completed 30 top priority actions for supporting the space component of GEOSS. They have generated many data sets, most of which are registered in GEOSS and are publicly available, to support GEO Tasks. For example, the continuous provision of 64,000 radar and optical satellite scenes has supported the Forest Carbon Tracking Task, starting with 20 million square kilometers of coverage and expanding by 2013 to annual coverage of the entire globe in order to significantly improve measurements of carbon dioxide emissions. CEOS also contributed to the GEO Carbon Strategy Report, GCI training courses, a study on gap analysis, reprocessing and other support for fundamental data records, and the generation of long-time series of Essential Climate Variables in response to the needs of the Global Climate Observing System (GCOS).

DIVERSITAS highlighted the progress being made by the GEO Biodiversity Observation Network. GEO BON is being implemented by DIVERSITAS, NASA, GBIF, the EBONE project of the European Commission, and many other countries and organizations. The GEO BON implementation plan was released in May 2010. One of the decisions adopted by the Conference of the Parties to the Convention on Biological Diversity that met last week in Nagoya gave a specific mandate to GEO

BON to prepare an evaluation of existing observation capabilities relevant to the new 20 targets for 2020. This is an exciting development that demonstrates how GEOSS can contribute to addressing major global political issues.

4.2 2009-2011 Work Plan Progress (Document 5) (for acceptance)

Ms Alexia Massacand of the GEO Secretariat presented the document. She highlighted progress in three main areas: the increase in data sharing and capacity; expanded efforts to engage users, and the availability of new products, information and services. The GEOSS Common Infrastructure has advanced well and more data sets have become available on the basis of full and open access. New and existing Communities of Practice have been strengthened. The Work Plan has generated decision-support products and services in such fields as disasters, dust storm warning, air quality, energy exploitation, geological mapping, climate change reanalysis, oceans monitoring, seasonal weather prediction, forest carbon tracking, land-cover mapping, early drought warning, global agriculture monitoring, phenology products, and ecosystem classification and modeling.

Germany supported the Report but suggested that certain sections may be overly optimistic. CEOS thanked the Secretariat and stated it would continue to support the Supersites and other GEO initiatives. Italy complemented the immense efforts underlying the Work Plan but agreed with Germany that difficulties with implementation should be highlighted more in the document.

China announced that FENYUNGCast has now been updated as CMACast. The World Meteorological Organization (WMO) thanked the Secretariat for acknowledging the role of Members, Participating Organizations and Committees and suggested that future activities should reinforce efforts at the regional level.

Brazil noted with great satisfaction how much GEO has progressed. When compared to the Cape Town report, the Report on Progress prepared for Beijing revealed how much has changed over the past three years.

Australia applauded the achievements that have been made and highlighted that GEOSS is not just about research. To become sustainable, GEOSS needs to become an operational observation system of systems.

The Food and Agriculture Organization of the United Nations (FAO) congratulated the Secretariat and welcomed the progress that has been achieved towards making GEOSS an operational system. The FAO remains committed to supporting Work Plan Tasks and the construction of GEOSS, which will contribute to benefits in the agriculture, forestry and fisheries sectors. FAO will also continue to co-lead (with the European Space Agency) the development of the GEO Portal.

The document was accepted.

4.3 Mid-Term Evaluation of GEOSS Implementation (Document 6) (for acceptance)

Ms Yana Gevorgyan, Co-Chair of the Evaluation Team that was established by the Monitoring & Evaluation Working Group, presented the report, which had been requested by the 2007 Cape Town Ministerial. The Team, consisting of volunteers from GEO Members, reviewed literature, conducted case studies of selected Tasks, and conducted interviews and surveys.

The mid-term evaluation concluded that, over all, the Earth observation community is optimistic about and supportive of the GEO initiative. GEO has brought increased attention to Earth observation and provided new opportunities for partnerships and networks. GEOSS implementation is aligned with high-level Ministerial priorities. Via the Data Sharing Principles GEO has provided a path towards the full and open sharing of data. Other accomplishments include GEONETCast and GEO BON.

At the same time, GEO has not adequately communicated the evidence of its progress to show the value-added results unique to GEOSS and to prove unequivocally that there is positive return on investment. In general there is a neutral view of the progress made by GEOSS and of the GEOSS

Common Infrastructure. Early expectations that GEO would serve as a new funding mechanism were disappointed, and some believe that GEO co-opts the achievements of others. GEO needs to address sustainability beyond 2015 and focus in the short term on measurable and achievable objectives. GEO's role as a supporting and enabling platform that fosters coordination amongst existing systems should be clarified. GEO needs to improve communication and outreach, engage a wider audience of users and stakeholders beyond those already directly involved in GEOSS, and give full attribution to contributors.

Mr Mmboneni Muofhe of South Africa delivered the management response from the Executive Committee. He noted that GEO remains a voluntary body as concerns contributions to the Trust Fund. The new Work Plan is now fully aligned with the strategic targets. The role of GEO has been communicated through the Work Plan. The Committee concurred with the recommendation that GEO needs to improve understanding of its goals and approach.

Switzerland agreed with the recommendations in the report and offered some suggestions for strengthening communication. It also appreciated the Executive Committee's response, particularly concerning resources, and it did not support the introduction of a membership fee. On the other hand, government commitments for multi-year contributions would be useful for planning.

Canada recognized the significant amount of work that went into the mid-term evaluation, which can serve as an effective tool for guiding future progress. More effort must be made to communicate the added value of GEOSS to stakeholders and to engage users. The Executive Committee should follow up over the course of 2011 on how GEO responds to the report's recommendations.

The United States thanked the Evaluation Team for an objective and valid review and largely concurred with the recommendations in the report.

Japan said that the Secretariat should support Members and Participating Organizations in following up on the evaluation and offered to contribute by providing a management tool it has developed for identifying achievements.

The United Kingdom congratulated the team for an excellent report and concurred with the other comments made so far and with most of the response of the Executive Committee. More imagination may be needed for thinking about alternative methods of funding, for example how end-users and beneficiaries of GEOSS might contribute. As for communications, GEO should focus on the added value and synergies of GEOSS as a whole, and not just on individual systems. Reaching out to the wider community is essential.

Germany suggested the need to engage relevant United Nations organizations more fully.

Australia thanked the team for an excellent and timely document that offered useful guidance on planning for the future. Getting the message out to the broader community is vital. The sustainability of GEOSS and the level of commitment to GEO are critical issues. GEO should focus its messaging on the real value added of GEOSS. While there are concerns about the voluntary nature of GEO, this should not be seen as an obstacle, as many other intergovernmental bodies are also voluntary. National coordination mechanisms are very important to spreading the GEO message.

Brazil congratulated the team but disagreed on the need for more communications, noting that the opening of the Landsat archive by the US Geological Survey (USGS) had a great impact without the need for a major communication effort. The team's terms of reference did not include the real impact of GEOSS, which is making data available, and this is the key to success. GEO needs to maintain the momentum of releasing more data and to make sure that the contributors are recognized. The data need to be organized and made available through the GEO Portal and then awareness will follow.

Argentina said that the report shows the need to return to GEO's original concept of an integrated system, a concept that has been lost.

Italy agreed with the UK that more imagination may be needed regarding funding strategies and, while sympathetic to Brazil's argument that communication should not be overemphasized, suggested it may be too optimistic to believe that GEO's added value and successes will be automatically recognized without communications efforts.

The UNESCO Intergovernmental Oceanographic Commission (IOC) stated that it is an enthusiastic participant in GEO. It welcomed the evaluation and broadly concurred with the results. The number of survey respondents and other procedural details about how they represent the broader community should be made clearer in the report.

The Global Climate Observing System (GCOS) acknowledged that, while there had earlier been issues over GEO acknowledging its contributions, this concern has been largely resolved. GCOS is now happy with the level of credit it receives, for example in the Report on Progress. Regarding the need for a gap analysis, GCOS has already carried out such an assessment in the climate SBA, as reflected in the updated GCOS Implementation Plan.

The International Society for Photogrammetry and Remote Sensing (ISPRS) said it would like to continue to send experts to GEO bodies and agreed with some of the Evaluation Team's recommendations. GEO needs to develop a long-term strategy on what it wants to achieve. ISPRS is working with China and the United States on a number of GEO projects and has benefited from GEO's role as a platform for collaboration.

China appreciated the report and said that the proposed gap analysis should be enhanced. The issue of capacity building for developing countries requires more attention.

The Secretariat Director said that the Secretariat will respond to the key findings. He agreed that coordination is the key value added of GEO; synergies and cross-fertilization, and not new funding, had always been the driving force behind GEO. He did not agree that GEO communications were ineffective, noting the growth in the GEO community and the increase in users of GEO products, such as REDD-plus Partnership and the Convention on Biological Diversity. He agreed with Brazil that making more data available was the key to GEO's future success.

The Chair concluded the agenda item by recognizing that there had been a good discussion. The document was accepted and the Evaluation Team was asked to take note of the comments made during the discussion.

4.4 GEOSS Data Sharing Action Plan 8 (Document 7) (for acceptance)

Mr Alan Edwards, Co-Chair of the Data Sharing Task Force, presented the Action Plan. He explained that, based on the Executive Committee discussions of the day before, some revisions had been made to the text. He reminded delegates that the Data Sharing Principles are a major GEO achievement and that the Action Plan had been drafted to respond to the Cape Town Declaration's call to strengthen the principles. The GEO-VI Plenary had concluded that "full and open" exchange means that data and information are made available through GEOSS with minimal time delay, with as few restrictions as possible, on a nondiscriminatory basis, and at a minimum cost of not more than the cost of reproduction and distribution. He emphasized, however, that GEO welcomes all data contributions to GEOSS. When registering data, contributors should explain any restrictions applying to them; when no information about usage rights and restrictions is provided, the presumption within GEO is that the data are fully and openly available with no restrictions on use and dissemination.

The Action Plan establishes the GEOSS Data Collection of Open Resources for Everyone, or GEOSS Data-CORE, a distributed pool of documented datasets contributed on the basis of full and open exchange and unrestricted access. It calls for maintaining the GEOSS Common Infrastructure as the architectural framework essential to implementing the Data Sharing Principles, encourages GEO Members to take leadership in establishing national coordinating mechanisms for promoting and monitoring engagement with the implementation of the Principles, and advocates for flexible policy frameworks that can ensure the implementation of a more open data environment. GEO Members and

Participating Organizations should maximize the number of documented datasets made available on the basis of full and open access and promote with data providers within their territories the benefits of full and open access to data. The Action Plan further explores the issue of how to categorize the datasets in GEOSS based on such issues as custom licenses and cost recovery over and above that of reproduction and distribution; discussions will continue over the course of the coming year.

The Data Sharing Action Plan confirms that the Data Sharing Task Force will continue for one more year. It will monitor the use and impact of the resources made available through GEOSS on the basis of full and open access.

The United States said that data access and utilization were critical to the success and societal benefits of GEOSS and should be a priority for all GEO Members. GEO needs to move forward to make policies and changes to enhance the use of GEOSS data without reuse restrictions. The US supported the amended Action Plan, the reference to it in the Declaration, and the Data-CORE concept. US contributions to the Data-CORE will be announced at the Ministerial. The US supported continuing the Data Sharing Task Force for an addition year so that it could provide recommendations to the 2011 Plenary.

The Global Spatial Data Infrastructure Association (GSDI) stated that it takes part in the GEO activities on data sharing. Its legal and social committee plans to focus on the issue of licensing, which is important for supporting publishing. GSDI continues to exchange views with GEO and with experts from ICSU/CODATA on this issue.

Germany supported the Action Plan. It would have preferred, however, that the continuing work be conducted through the Architecture and Data Committee rather than through an extension of the Data Sharing Task Force.

France agreed with the four categories of data, noting the advantages of not providing a definition of “minimum cost” in order to accommodate the variety of approaches used around the world and to respect the view that pricing policy is not necessarily a restriction.

Italy applauded a very balanced document that takes into consideration the various sensitivities and differing realities that exist within the GEO membership.

Canada endorsed the Action Plan and welcomed the recognition that attribution and registration are not restrictions. Like the US, Canada was not convinced that the Task Force needed to remain in force, and its continuation beyond the next Plenary should be evaluated. The Action Plan should be mainstreamed into all GEO activities.

Japan supported the Action Plan, which will help to accelerate GEO’s further development. CEOS also supported the document.

South Africa said that the establishment of the Data-CORE was an important step forward and would support the data democracy Task. South Africa also supported the continuation of Task Force.

The European Environment Agency (EEA) suggested that the Task Force also look further into the issue of data tagging.

The Netherlands recognized the Task Force’s efforts and fully agreed with the revised document. It called on all countries to provide as many data sets as possible to the Data-CORE.

The Committee on Space Research (COSPAR) said that the space research community is not fully comfortable with some of the language in the Action Plan, such having as few restrictions as possible or with set of Essential Environmental Variables. However, it understood the tradeoffs that have been made relating to the quality and accuracy of data. COSPAR would like to see a reference in the document to data validation.

The European Space Agency (ESA) suggested that the word “conditions” should be used rather than “restrictions;” it has a more positive connotation and prices can indeed be seen as a condition rather than a restriction.

Argentina proposed that a reference to the Forest Carbon Tracking Task in Annex 5.4 be modified to reflect the fact that the forest carbon issues are still being negotiated under the Climate Change Convention.

The Chair thanked the Task Team for its work and declared that the document had been accepted with the additional minor editorial adjustments and the change to Annex 5.4 that had been proposed during the debate. The mandate for the Data Sharing Task Force was extended for one year.

4.5 GCI Coordination Team Report (Document 8) *(for information)*

Mr Ivan Petiteville, Co-Chair of the GEOSS Common Infrastructure Coordination Team, presented the report. He described the Initial Operating Capability phase of the GCI, the functional and usability testing, and the criteria that had been agreed for selecting a single Clearinghouse and web portal in order to assure GCI operations through 2015. Based on these tests and criteria, the Coordination Team recommended that the US Geological Survey (USGS) operate the Clearinghouse and that the European Space Agency (ESA) and the Food and Agriculture Organization (FAO) jointly operate the GEO Web Portal. The Executive Committee endorsed these recommendations last July. The Team is now focusing on how to enhance the GCI, including by increasing the number of registered resources and strengthening linkages to the community portals.

The Chair observed that the long-term operations of the GCI are extremely important to the future of GEOSS. The United States thanked the GCI team and called on the newly launched second evaluation team to collect user and stakeholder inputs and to document those requirements that may not be fully satisfied by the current GCI approach. Brazil supported the US statement and requested that a new review of the architecture and data consider the GCI’s long-term operations as well as the impact of technology evolution and of advances in how information is handled on the internet.

4.6 2009-2011 Work Plan Annual Update (Document 9) *(for acceptance)*

The Chair opened the agenda item by observing that GEO’s three-year Work Plan is a living document that is updated on an annual basis. The Secretariat Director presented the Annual Update, remarking that only minor changes have been introduced. Several Tasks have been merged, several have been moved within the document, some descriptions have been improved, and the concept of mentors has been introduced.

South Africa expressed its interest in contributing to Task EC-09-02. The updated Work Plan was accepted as a living document.

5 PREPARATIONS FOR THE 2012-2015 WORK PLAN

5.1 Process and Schedule (Document 10) *(for acceptance)*

The Chair said the 2012-2015 Work Plan will offer an opportunity to build on the achievements of GEO’s first five years and on the outcome of the Beijing Ministerial Summit. In presenting the document, the Secretariat Director noted that the next Work Plan will conclude the 10-Year Implementation Plan. Drawing on the lessons and recommendations of the Mid-Term Evaluation, the Data Sharing Action Plan, the first Work Plan Symposium, and other reports and meetings, the development of the next Work Plan needs to highlight user engagement, coordination, resource mobilization and data access. He invited further inputs over the coming weeks, after which a zero version of the future Work Plan will be distributed to the entire GEO community. In mid-2011 a revised version will be considered by the Executive Committee and by the second Work Plan

Symposium. Based on all the feedback received by this point, a further revision will be submitted to the GEO-VIII Plenary.

Canada said that it was important to reiterate that this Work Plan should include a process for considering what needs to be done beyond 2015. The Secretariat Director confirmed that the Executive Committee will address this issue and that if specific activities for preparing the post-2015 period need to be conducted through the Work Plan, they will indeed be included. The document was accepted.

5.2 Preparations for 2011 GEOSS Evaluation (Document 11) *(for information)*

Craig Larlee, Co-Chair of the Monitoring & Evaluation Working Group, presented the document. Now that the first, mid-term, evaluation has been completed, the second GEOSS evaluation will begin right away based on the framework document prepared by GEO-VI. A series of yearly evaluations will be conducted by a series of evaluation teams consisting of experts nominated by Members and Participating Organizations. “Lessons learned” from the first evaluation include the importance of having a good balance between professional evaluators and experts from the relevant scientific and technical disciplines. A good geographic balance is also important; the second team, which is responsible for the 2011 evaluation, consists of experts from nine countries in five continents. Members and Participating Organizations are still welcome to nominate additional experts. While the Mid-Term Evaluation was broad and somewhat superficial, the follow-on evaluations will be more focused and detailed. The revised schedule calls for reviewing two transverse areas in 2011 and then three SBAs and one transverse area per year in 2012-2014. The second evaluation will focus on architecture and data management and will also address the concerns raised during GEO-VII on data availability and the evolution of the GCI. The evaluation for 2015 will remain as originally proposed, a final comprehensive review covering the full scope of GEOSS.

Japan expressed its appreciation that architecture and data issues will be amongst the first issues to be evaluated and said it will provide an expert for this effort.

5.3 Forest Carbon Tracking and the Global Forest Observation Initiative – GFOI (Document 12) *(for acceptance)*

Gary Richards, Co-Lead of the Forest Carbon Tracking Task, presented the document. He recalled the progress that the Forest Carbon Tracking Task has made towards achieving its four objectives of establishing a framework for coordination, a number of national demonstrators, better access to data, and a set of methods and protocols for ensuring comparability and interoperability. CEOS has provided tremendous support to the Task in the form of data, and others have contributed to data processing. Data and products are starting to become available, and the proof of concept for global wall-to-wall monitoring is being demonstrated. Systematic observations will support governments in obtaining analyses and reporting information. The role of the proposed Global Forest Observation Initiative (GFOI) is to ensure the systematic coordination of this effort and of the resulting information and map products. The GFOI will investigate how to improve the provision of satellite and ground data for forest monitoring. It will also support continuing research and development as well as national capacity building. The team proposes to establish a GFOI Task Force and a Planning Team to carry out this work.

Japan welcomed the report, noting that space observations are essential and that GEO should play an important role in REDD-plus.

The United Kingdom strongly supported the development of the plan and the need to interact with the Climate Change Convention, REDD-plus and FAO; developing a truly integrated system that takes into account benefits to biodiversity and climate will require sufficient expertise in these domains.

The United States supported the development of the GFOI and accepted the concept document. The US has joined the Task as a co-lead and is contributing its new SilvaCarbon programme, which will

build capacity around the world by drawing on a network of US scientists and experts. SilvaCarbon will also support national demonstrator sites, provide data and contribute to the comparability of methods and approaches.

Switzerland emphasized the value of ecosystem services provided by forests. It welcomed the goals of GFOI, which has the potential to support the emissions reduction goals of the Climate Change Convention as well as REDD-plus. He looked forward to a more detailed proposal on how to make the initiative operational.

Canada supported the initiative and recommended that the Task team consider how it might serve as an umbrella for other forest-related activities in order to ensure that they are all mutually reinforcing and non-duplicative. The forests Community of Practice should be engaged in this activity. Commercial data acquisition needs to be examined as it seems unlikely that the operational phase can be built on the generosity shown by commercial providers during the demonstration phase.

Italy also supported the initiative and recommended more emphasis on forest degradation. Efforts to combat illegal logging could also benefit from GFOI. GEO should be more explicit about the ability of this initiative to contribute to the Climate Change Convention and to REDD-plus.

Norway said it would continue to support the Forest Carbon Tracking Task and, in order to move forward and sustain this effort, the GFOI. He said that commercial providers will continue to play a role and this issue needs to be further addressed. He confirmed that Norway will support the Planning Team

The European Space Agency congratulated the team for its work and asserted that this activity would not have existed without GEO. It demonstrates the value of GEO by linking the technical capabilities of GEO contributors with important political issues. While the scientific and technical issues still to be resolved should not be underestimated, it is vital to build bridges to World Bank initiatives and to the political and financial process.

Peru welcomed the progress that has been achieved and expressed its interest in continuing to engage with the initiative. In addition to hosting a demonstration site Peru contains a high level of biodiversity.

The European Environment Agency also congratulated the team and highlighted the link to certification of forest products, where sustainability criteria are important.

The Food and Agriculture Organization welcomed the GFOI in its current revised form and emphasized the importance of facilitating access to satellite data on forests and agriculture. In situ data should also be urgently enhanced for the purposes of validation. FAO will participate as a member of the GFOI Task Force and welcomed the announcement of support by the US. FAO will explore options for hosting the GFOI forest planning team in Rome.

The Committee on Earth Observation Satellites said it is working on the definition of a data coordination strategy based on publicly available data sources. It strongly supports the GFOI and is willing to support the proposed Task Force.

DIVERSITAS welcomed the progress made and noted that a great deal of biodiversity occurs in forests. REDD-plus includes all of the benefits in addition to carbon, suggesting the potential for synergies between the FCT and other Societal Benefit Areas, including biodiversity. GEO BON commits itself to interacting with FCT to realize these benefits.

The Global Climate Observing System (GCOS), on behalf of its Steering Committee, expressed strong support for the GFOI, which corresponds to a clear need expressed in the GCOS plan and can benefit from several actions in that plan. Consistency checks provided by flux inversions have a role to play. The emphasis on in situ observations in addition to space is important, and uncertainties in the models need to be reduced.

The IEEE welcomed the FCT and GFOI. It underlined the importance of standards and best practices for the Task, and it is prepared to provide support in these areas.

The Chair concluded the discussion by noting the Plenary's strong support for the Task and the progress that it had made to date. The GFOI Task Force and GFOI Planning Team will be established and all interested contributors are invited to participate. The document was accepted.

The Secretariat Director thanks the Plenary for its unanimous support of the Task. Great progress has been made in bringing the various communities and organizations together, and the Task promises to contribute to a range of forest benefits.

The United States said that land cover is a major data set that supports all SBAs, including the current Task, and that it will launch an initiative to generate 30m, global, and decadal land cover data sets. The US recognized the contribution that Brazil and China have made via CBERS and thanked them for their leadership in this area.

6 GEO COMMITTEES

6.1 Reports from Committees and Working Groups (Documents 13, 14, 15, 16, 17) (for information)

Ms Barbara Ryan presented the report for the Architecture and Data Committee (ADC). She highlighted the process for selecting a single Portal and Clearinghouse for the GEOSS Common Infrastructure (GCI) and the success of the Architecture Implementation Pilots (AIP) in demonstrating how interoperability works. Critical next steps include building more content for the GCI, adopting and using the GEOSS interoperability arrangements, increasing user community engagement, and implementing the Data Sharing Principles. While much has been achieved, much more remains to be done if GEOSS is to be truly operational by 2015.

Ms Andiswa Mlisa presented the report for the Capacity Building Committee (CBC). Together with the UIC, the Committee is following up the Call for Proposals for decision-support projects. Of the 71 full proposals that have been selected, 25% are in the field of agriculture, 55% in water, 17% in health, and 3% in energy. They include new applications, application improvements and demonstration projects. The next phase will involve putting the selected project teams in contact with relevant resource-providing organizations. Plenary participants were encouraged to support this effort by volunteering their technical expertise. The Committee has also been working on an analysis of the capacity-building components of the various Work Plan Tasks.

Mr Stuart Marsh presented the report for the Science and Technology Committee (STC). The Committee has developed a strategy and a roadmap. The EGIDA project, which is supported by the European Commission's 7th Framework Programme, provides dedicated resources for helping to implement the roadmap via Tasks ST-09-01 and ST-09-02. Five highlights of the Committee's work are the scientific review of the GEO Work Plan (four SBAs have been reviewed so far), a review of the scientific needs and priorities of Tasks, the development of the GEO label concept, the development of GEOSS quality and continuity indicators, and outreach to the scientific community.

Mr Francesco Pignatelli presented the report for the User Interface Committee (UIC). The Committee continues to encourage new Communities of Practice and has developed guidance documents to assist this process. Its main focus remains on user engagement, for example through research conducted during the first Work Plan Symposium in May. The UIC coordinates with other Committees, for example with the CBC on the Call for Proposals. It supported a workshop on the value of information entitled Methodological Frontiers and New Applications, and it is exploring the concept of creating GEOSS Professorships. The key challenge is how to make Earth observations valuable to users. The Committee invited Members and Participating Organizations to continue to support the Communities of Practice by volunteering new participants.

Mr Craig Larlee presented the report for the Monitoring & Evaluation Working Group. The Working Group will focus on the future FEOSS evaluations and in improving the process based on the experience of the first evaluation. It will also focus on developing performance indicators as proposed in the 10-Year Implementation Plan; the approach will be to use the strategic targets and their statements of expected outcomes as the basis and analyze their potential measurability and the availability of relevant data.

The European Commission stressed the need to accelerate the work on defining performance indicators. Germany recommended limiting the establishment of new working groups and task forces.

The Secretariat Director encouraged participants to visit the Committee booths in the Exhibition. He highlighted the Call for Proposals, an innovative effort that has built expectations for funding.

6.2 Recommendation on Committees and Working Group

The European Commission thanked the Committees for their work over the course of the year. It also supported the call for Members and Participating Organizations to contribute experts for reviewing the Call for Proposals. The M&E Working Group was requested to release the performance indicators as soon as possible.

Japan said it was pleased with the work of the Committees and that the Task management tool developed by the Japan Aerospace Exploration Agency (JAXA) was available.

UNESCO expressed strong support for the work of the Capacity Building Committee and for reinforcing the capacity-building component of the Declaration. Increased capacity building and education are vital for attracting the younger generation to study science and technology.

Germany said that the Committees are very important and that GEO should avoid the inflation of temporary task forces outside these permanent GEO structures.

Argentina enquired about how much money was implied by the Call for Proposals. The speaker said that the proposers had been invited to keep the range of USD 150,000 to 1 million but that some had exceeded this amount. Argentina highlighted the risks should the effort fail. The Secretariat Director said that the team will approach banks and others institutions and that it was important to try and to learn the lessons; the proponents understood the limitations of the exercise when they engaged.

China appreciated the work of all the Committees and the Working Group. Regarding the ADC's statement that the GCI would be operational by 2015, he said that the system should in fact be operational as soon as possible and recommended that the GO community focus on the long-term and sustainable use of the GCI.

The Secretariat Director reported that the Executive Committee recommended that the four Committees and the Working Group be extended for one more year, and the Plenary accepted the recommendation. Based on the Summit deliberations, GEO may need to review the functions of the Committees more intensively at the next Plenary.

6.3 Nomination of Committees and Working Group Co-Chairs

The following nominations of Co-chairs were announced from the floor:

ADC: EC, China, IEEE, US, CEOS, Brazil, WMO, Japan

CBC: EC, Spain, Austria, Brazil, South Africa, UNESCO

STC: Italy, UK, US, South Africa, Australia, Germany, EuroGeoSurveys

UIC: US, Germany, France, EC, IEEE,

M&E: Canada, US

COSPAR announced that it would step down from co-chairing the STC and would like to join the Data Sharing Task Force.

7 REPORT OF THE EXECUTIVE COMMITTEE (DOCUMENT 18) (FOR ACCEPTANCE)

The GEO Co-Chair from the United States presented the report, which summarized the outcomes of the three Executive Committee meetings that were held in 2010. Much of the focus during this time was on preparing the Ministerial Summit by interacting with China and guiding the 2010 Ministerial Task Force. The Committee also monitored the work of the Evaluation Team, prepared a managerial response to the Team's report, provided recommendations on the development of the Data Sharing Action Plan, monitored and endorsed the selection of the GCI component providers, and encouraged GEO Members to increase their contributions to the GEO Trust Fund.

8 PROCESS TO APPOINT THE DIRECTOR OF THE GEO SECRETARIAT FOR THE PERIOD 2012-2014 (DOCUMENT 19) (FOR ACCEPTANCE)

The GEO Co-Chair from the European Commission presented the document. According to the rules of procedure, the current secretariat director will have served two terms by end-2011, so a selection process based on an open competition needs to be established, with a decision taken by 30 June 2011. The Plenary endorsed the process proposed by the Executive Committee.

9 FINANCIAL REPORTS

9.1 2009 Financial Statements (Document 20) (for acceptance)

The Secretariat Director presented the document. After a decreasing trend in contributions for the years 2006, 2007 and 2008, the total level of contributions increased in 2009. In addition to these regular contributions, several Members and Participating Organizations provided direct support to developing country experts for their travel expenses. In addition, the Sloan Foundation contributed directly to the preparations for the Global Forest Observation Initiative. The United States made an in-kind contribution in 2009 by hosting the GEO-VI Plenary. The Director noted that the financial rules of the World Meteorological Organization require that at the start of each financial year the GEO Trust Fund must contain sufficient funds for all staff salaries plus an additional ten percent of estimated expenditure as an operating cash reserve. This working capital is estimated to be CHF 2 million.

There were no comments from the floor and the document was accepted.

9.2 Report of the External Auditor (Document 21) (for acceptance)

The Secretariat Director presented the document that had been prepared by the external auditor. The document discusses the 2009 financial results, the implementation of the new IPSAS accounting system, and the response to the 2008 audit recommendations. The report concludes that GEO remains financially strong and that the transition to IPSAS was successful. No errors or faults were found in the GEO accounts.

There were no comments and the report was accepted.

9.3 Report on Income and Expenditure 2010 (January to August) (Document 22(Rev1)) (for information)

The Secretariat Director presented the report. He explained that to date the cash contribution to the Trust Fund by Members totaled CHF 2.67 million, with a projected level of CHF 3.6 million for the entire year. This marks a further increase in contributions compared to the two previous years, which

the Director considered an indication of GEO's growing success. The Secretariat Director also mentioned that the increased income for 2010 resulted from a significant additional contribution from the United States. The Trust Fund is denominated in Swiss Francs, so the strong and rising franc has had a negative impact on contributions denominated in other currencies. In-kind contributions include the seconded experts and the provision of office space by WMO. The combined cash and in-kind contribution, including the opening balance, is therefore CHF 7.8 million.

Expenditures from the Trust Fund to date total CHF 3.9 million. To match receipts and expenditures, the Executive Committee had recommended that the Secretariat produce budget revisions over the course of the year. A revision was produced in July, which set expenditures at CHF 5.7 million. With such a value, most key activities will be implemented and a working capital of CHF 2.3 million will remain at the end of the year. The financial situation of the GEO Trust Fund remains healthy.

There were no comments and the document was accepted.

9.4 Secretariat Operations Budget for 2011 (Document 23) (*for acceptance*)

The Secretariat Director presented the document, which sets out expected contributions and pledges from Members. The opening balance for 2011 is projected to be above CHF 2.3 million, i.e. larger than the required working capital of CHF 2 million. The budget for expenditures has been adjusted to CHF 3.45 million.

Australia said that it has already committed to contributing up to AUD 35,000, which might be increased.

Canada said that it would continue its contributions.

China said that it will continue to contribute to the Trust Fund. By hosting the Plenary and Ministerial it had made an in-kind contribution of USD 500,000 in 2010.

The European Commission pledged €600,000 for 2011. It will also provide travel support directly to developing country participants for next year's GEO-VIII Plenary and Capacity Building Committee meetings.

South Africa will contribute R1.5 million for 2011.

Argentina asked if the level of secondments was expected to remain the same in 2011. The Secretariat Director confirmed that this was the case. A new seconded expert had just arrived from Korea, and he expected most secondments to continue or to be replaced. To reduce expenditures the number of support staff has been reduced from three to two. As of December the Secretariat will operate with 18 staff, including secondments.

The Chair concluded the discussion by emphasizing that the next five years will be extremely important for GEO and that additional resources and continued support from GEO Members was essential.

The document was accepted.

10 PRESENTATION OF SLATE OF NOMINEES FOR THE EXECUTIVE COMMITTEE

The Secretariat Director presented the slate of nominees for the Executive Committee as forwarded by the regional caucuses. The nominees were Niger and South Africa (as GEO Co-Chair) from Africa; Brazil, Chile and the United States (Co-Chair) from the Americas; Russia from the CIS; the European Commission (Co-Chair), Germany and Italy from Europe; and Australia, China (Co-Chair), Japan and Korea from Asia/Oceania. The slate of nominees was accepted by acclamation.

11 RULES OF PROCEDURE UPDATE (DOCUMENT 24) (FOR ADOPTION)

The Secretariat Director presented the document. He explained that there is an ambiguity in Annex E concerning the process for appointing the secretariat director. Bullet 6 had been revised to clarify that the final selection is to be made no later than six months before the end of the director's term. The updated rules of procedure were adopted.

12 ANNOUNCEMENT OF GEO-VIII AND PROPOSALS FOR GEO-IX

Turkey offered to host the GEO-VIII Plenary in October 2011. The offer was welcomed by acclamation.

Brazil invited the Plenary to hold GEO-IX in Rio de Janeiro in 2012, a year that will mark the 20th anniversary of the Rio Earth Summit. The offer was welcomed by acclamation.

The Executive Committee will conduct a technical review of the offers and inform the GEO community of the results.

13 REVIEW OF SESSION OUTCOME

The Secretariat Director provided a summary of the session outcomes. The United States asked for a correction to indicate that it will continue to provide a co-chair for the ADC and reiterated its continuing commitment to GEOSS. Japan said that its name had been included on the list of CBC Co-Chairs by error.

14 CONCLUDING REMARKS

The GEO Co-Chair from the European Commission thanked China, the Secretariat, and all of the organizers of the meetings. She said that the GEO spirit, a spirit of compromise and friendship, is clearly alive and flourishing.

The GEO Co-Chair from South Africa said that GEOSS implementation is going reasonably well but there are challenges ahead, as indicated by the Mid-term Evaluation. GEO needs to communicate its activities, its goals and its value added. Advances such as the forest carbon and GEO BON Tasks provide good evidence of GEO's value. It is time now to look forward to 2015 and ensure that GEO meets the expectations for an operational GEOSS.

The GEO Co-Chair from the United States remarked that GEO is making progress towards its goal of establishing GEOSS. The Data Sharing Action Plan in particular is a vital step forward, as is the Global Forest Observation Initiative. The communications products that have been developed for the Summit by the Secretariat are impressive. Many other areas of progress can also be seen.

The Secretariat Director expanded on the metaphor advanced at the beginning of the meeting by the GEO Co-Chair from the EC of an automobile being built out of parts. GEO is in fact building an entire fleet of cars that need to travel together.

The GEO Co-Chair from China said that he looked forward to the next day's Ministerial. He welcomed the many positive outcomes of the Plenary session. Having served as a GEO Co-Chair for five and a half years, and seeing that GEO was well on its way to success, he announced that he was stepping down. However, China would continue to support GEO, and he would be succeeded as GEO Co-Chair by Vice Minister Cao Jianlin of China's Ministry of Science and Technology.

The GEO Co-Chair from South Africa, on behalf of all current and previous Co-Chairs, thanked Mr Zheng for his long service and praised his contributions to GEO.

With this, the Chair adjourned the meeting.

GEO-VII Plenary Draft List of Participants

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