



GROUP ON
EARTH OBSERVATIONS

GEO-VII

3-4 November 2010

Report of GEO-VI

Document 4

As accepted at GEO-VII.

REPORT of GEO-VI

17 - 18 November 2009

Washington D.C., USA

1 OPENING OF THE SESSION

1.1 Welcome Address from the United States of America

The Sixth Plenary meeting of the Group on Earth Observations, GEO-VI, was chaired by GEO Co-Chair Ms Sherburne Abbott of the United States of America. She called the meeting to order shortly after 9 o'clock and invited Mr John Holdren, advisor to President Barack Obama for Science and Technology, Director of the White House Office of Science and Technology Policy, and Co-Chair of the President's Council of Advisory on Science and Technology, to make the welcome address.

Mr Holdren stated that the US views GEO as a critically important forum on Earth observation and fully supports the vision of GEOSS. He applauded the critical work achieved so far and emphasized the importance of science-based decision-making. He also stressed the value of open access to data and information as a global public good. Increased international cooperation on science and technology is essential to addressing global challenges such as climate change and food security.

1.2 Opening Remarks

Ms Abbott said that, as a relative newcomer to the GEO process, she was impressed by the talent and energy that governments have brought to this effort. No one nation alone could build GEOSS, but GEO has demonstrated that governments can achieve this goal by working together. The US considers GEO-VI to be a crucially important Plenary that will help set the stage for the 2010 Ministerial Summit.

Ms Manuela Soares, representing the GEO Co-Chair from the European Commission (EC), reiterated the EC's strong commitment to GEO. The EC is deeply engaged in the GEO Work Plan and in the various processes, such as ensuring the long-term operation of the GEOSS Common Infrastructure. She emphasized the importance of demonstrating the real benefits of GEOSS and committing the necessary resources to implement the GEOSS 10-Year Implementation Plan.

Mr Zheng Guoguang, the GEO Co-Chair from China, recalled that the road to GEO had started in Washington DC at the First Earth Observation Summit six years earlier. Governments must build on recent progress and continue to collaborate on strengthening GEOSS implementation. He reconfirmed China's commitment to GEO and highlighted its work on agricultural monitoring, the China Brazil Earth Resources Satellite (CBERS) and the 2010 Ministerial Summit preparations.

Mr Philemon Mjwara, the GEO Co-Chair from South Africa, pointed to governments' success in establishing GEO as a functional organization with operational Committees and a Secretariat. Key elements of GEOSS are starting to become visible, such as GEO BON and the GEOSS Common Infrastructure. He observed that Africa is now beginning to see the benefits of GEOSS. Many challenges still lie ahead, and GEO should maintain its course to ensure success.

Mr José Achache, the Secretariat Director, said that the GEO community can be proud of the speed at which GEOSS implementation is moving. He stressed the importance of delivering end-to-end services and ensuring that the GEOSS Common Infrastructure is made operational and sustainable. He

noted that the private sector and the scientific community are increasingly interested in GEOSS, and that their interests and those of other groups need to be reconciled.

1.3 Administrative Announcements

There were no administrative announcements.

1.4 Adoption of Agenda (Document 1)

The Chair introduced the draft Plenary agenda. She noted the challenge of completing all of the work within the two days available. She explained that some items would likely be taken out of order. There were no amendments and the agenda was adopted.

1.5 Recognition of New Members (Document 2)

The Secretariat Director introduced the item. He reported that Austria became a GEO Member in March, Malta and Guinea joined in May, and Madagascar joined in August. As a result, GEO now has 81 Members. The Plenary welcomed the new Members with a round of applause. The Chair invited them to make statements.

1.6 Statements from New Members

Austria said that, although it was new to GEO, it had contributed to Earth observation for over 100 years at the national level and through the European Union. It also greatly valued its participation in relevant UN and other international bodies and programs. Relative to its size, Austria has particular strengths in space and applications. GEO activities in Austria include mountain areas, the greater Danube region, climate change, energy security and disasters.

Guinea stated that it fully supports the GEOSS Implementation Plan, whose nine Societal Benefit Areas perfectly match the needs and concerns of the people of Guinea and of Africa as a whole. Key areas of interest include the management of anthropogenic disasters, health, water, energy resources, ecosystem and agricultural management, and biodiversity preservation. It invited GEO to contribute further to building capacity in the African region.

Madagascar acknowledged the financial support received from the EC and the Secretariat for participating in the meeting. It expressed gratitude to the International Institute for Geo-Information Science and Earth Observation (ITC) for supporting capacity building on remote sensing. Madagascar expects to benefit greatly from becoming a GEO Member.

1.7 Recognition of Participating Organizations (Document 3)

The Chair reminded participants of the criteria for accepting new Participating Organizations. These include that they can contribute meaningfully to GEOSS and the GEO Work Plan and provide expertise and systems. The also imply that recognition should be limited to cases where it is needed to provide added value.

The Secretariat Director introduced the Executive Committee's recommendations that the Plenary recognize the International Society for Digital Earth (ISDE) and the International Union of Geological Sciences (IUGS) as Participating Organizations. The Plenary accepted the recommendations and welcomed the two new Participating Organizations.

1.8 Approval of GEO-V Report (Document 4)

The Chair introduced the item, noting that the document had been distributed earlier in the year for comments. There were no additional comments from the floor, and the document was accepted.

2 GEOSS IMPLEMENTATION PROGRESS AND HIGHLIGHTS

2.1 National and Regional activities

The Chair invited participants to make three-minute oral presentations about their national and regional activities.

Australia informed the Plenary that it is contributing to the GEO Forest Carbon Tracking Task and assisting neighboring countries with a regional support service for satellite data. It hosted the co-located GEO Committee meetings in September. It expressed concern about the financial challenges facing GEO and pledged an additional contribution for 2010. It also emphasized the important contribution that UN and other intergovernmental bodies can make to GEOSS.

Switzerland highlighted the outcome of the World Climate Conference – 3, which aimed to establish a framework for climate information services. This framework will be building on existing observation programs and will contribute to, and benefit from, GEOSS. It encouraged close cooperation between GEO and the World Meteorological Organization (WMO) in further elaborating the climate services framework.

South Africa applauded the momentum of the GEO Work Plan and announced that it will extend its contribution of a seconded expert to the Secretariat. It said that South Africa is organizing its national space sector to support sustainable development and is establishing a permanent national Earth observation secretariat. It also highlighted the importance of capacity building projects and activities, the data democracy initiative, and the African Resource Management Network (ARM).

Italy has committed to a growing number of GEO activities. It highlighted the importance of climate change and ecosystem services and Italy's contributions to satellite observations and the GEOSS Common Infrastructure. Italy is particularly committed to supporting decision making on climate change in the Mediterranean region. It noted that the G8 and the G20 both made important statements of support to GEO this year.

China informed the Plenary that its Academy of Sciences hosted a workshop on global agricultural monitoring earlier in the year with the aim of developing a system of systems for agriculture. China has also invested in making new satellites operational, including those for meteorology, infrared monitoring, and the free and open dissemination of data in Africa via a new ground station in South Africa for the CBERS program.

The United States noted that the White House and 20 national agencies are actively collaborating through US GEO, reflecting a government-wide commitment to GEOSS. It said the US considers the full and timely access to civil Earth observation data to be a global public good. Some 1 million free images have thus far been downloaded from the Landsat archive. It called on GEO to dedicate more work to marine biology and ecosystems.

Japan reported on its Prime Minister's recent pledge to cut greenhouse gases and emphasized the contribution GEOSS makes to science-based decision making. Progress by Japan includes the launch of the GOSAT satellite for monitoring CO₂ and methane, the organization of the Third GEOSS Asia-Pacific Symposium in Kyoto, the release of the ASTER Digital Elevation Model (DEM) to the public, and contributions to Tasks on climate change, ecosystems and water.

Costa Rica highlighted the importance to disaster management and hydro-meteorological emergencies of high-resolution satellite images. It noted important contributions in this field by the US National Oceanographic and Atmospheric Administration (NOAA). Costa Rica plans to start integrating all relevant organizations in its national GEO activities.

The Chair called for a break in the proceedings and invited all participants to attend the official opening of the GEO-VI Exhibition. The Secretariat Director said that the Exhibition offers a brilliant demonstration of how much progress GEO has made. The thirty exhibits from Committees,

governments, organizations and the private sector showcase a wide range of achievements from systems to community portals to end-to-end services.

On behalf of the host country, Ms Jane Lubchenko, Administrator of NOAA, said that it was a great pleasure to join the Secretariat Director in opening the Exhibition. She observed that interest in participating in the Exhibition had been overwhelming and it had not been possible to accommodate all requests. The logistics company was so impressed by the Exhibition that it planned to showcase it as one of the best it had ever supported in the Ronald Reagan building.

Following the break, Brazil reported that it planned to commit to a 25% reduction in greenhouse gas emissions at the upcoming Copenhagen climate change conference, mostly by reducing deforestation and protecting savannahs. Arriving at this figure was only possible by using space-based and in-situ Earth observation data. Brazil is committed to promoting capacity building in Africa through CBERS and in the Amazon region via a training center for forest monitoring.

India reported that it participates in many GEO activities, including by serving as a co-chair of the GEO Task Force on Data Sharing Principles, contributing to the emerging global agricultural monitoring system of systems, and hosting a workshop on climate change and agriculture. India has recently launched an oceanographic satellite and is planning more missions over the next several years. It also contributes to capacity building efforts.

Canada recently organized a GEO workshop on SAR technologies for over 70 participants to support capacity building and agricultural monitoring. Together with US GEO, Canada is hosting the next meeting of GEOSS in the Americas at its Washington DC embassy later in the week. The meeting will focus on coastal zone management. It is also supporting a capacity building initiative on water resource management in Peru.

Pakistan announced that it has established a national GEO committee that engages many key agencies, including those for environment, geological survey, climate data and national space agency. The committee has met twice and made reasonable progress on promoting data sharing. Pakistan strongly supports GEO and GEOSS implementation.

The European Commission continues to provide extensive support to GEO projects, including personnel, infrastructure and financing. It highlighted a number of European contributions, including the GEOSS Common Infrastructure, workshops, data sets, user communities, the harmonization of data, the interoperability of systems, the EC's Joint Research Center, EBONE, capacity building, and collaboration with the European Space Agency.

Romania expressed its pride in having hosted the GEO-VI Plenary in 2008. It described contributions to various projects in many of the Societal Benefit Areas, including the organization of a summer workshop on information data mining.

The Chair thanked the speakers and applauded the great amount of work revealed by the various interventions, in particular in the domain of capacity building.

2.2 2009-2011 GEO Work Plan Progress (Document 5)

Ms Alexia Massacand of the GEO Secretariat presented the document. She emphasized that GEO's progress was based on the voluntary contributions of its various Members and Participating Organizations.

In 2009, three key trends can be observed. First, many new products and services have been developed. These include the world's largest collection of Land Surface Imagery from a satellite constellation, the 30m-resolution Global Digital Elevation Map, new reanalysis data for climate change detection, the SAFARI fisheries and aquaculture applications, easy access to geological map data, the GEO forest carbon tracking system, universal access to the Charter on Space and Disasters, new high-resolution experiments for improved climate prediction, and the TIGGE global weather forecast database.

The second trend is GEO's increased activity in Africa. Examples include the extension of SERVIR to Africa, the use of decision-support tools for mitigating meningitis outbreaks, the extension to Africa of an information service for siting solar plants, and the 2nd phase of TIGER, which is promoting free and open access to water data. In addition, the GEO Biodiversity Observation Network (GEO BON) is developing Biota Africa, and the CBERS receiving station in Africa is now operational.

The third trend involves engaging users and building Communities of Practice. The past year has seen the launch or strengthening of the Carbon Community of Practice, the Integrated Water Cycle Community of Practice, and the Health and Environment Community of Practice, and the Global Agricultural Community of Practice.

The Secretariat Director said that the report demonstrates the incredible breadth of GEO accomplishments. He emphasized that GEOSS implementation is clearly in the hands of GEO Members and Participating Organizations, with GEO providing the platform for collaboration.

The Chair reiterated the essential contributions that Participating Organizations make to GEOSS and invited them to make statements.

EUMETSAT highlighted its work in the areas of climate and weather. It is contributing to GEOSS through seven EC-funded projects, supporting developing countries and disseminating information on disasters and weather forecasts. It is accessing data in five African countries and has offered to distribute them via GEONETCAST. EUMETSAT fully supports the GEO data-sharing principles, and it aims to promote the data democracy initiative over the coming year.

The Global Spatial Data Infrastructure (GSDI) Association is actively working towards the realization of GEOSS. It urged organizations building spatial data products to register their components with GEOSS; GSDI is encouraging its own members to do so. It advocated developing open-access legal regimes as much as possible and removing restrictions on geographic data over time. It invited participants to attend the GSDI-12 conference in Singapore in 2010.

DIVERSITAS, together with NASA and EBONE, is co-leading the development of GEO BON. It is raising awareness of the benefits of GEOSS and GEO BON amongst scientists. Together with Japan, it gained acceptance of GEO BON as one of the three topics to be considered by the scientific meeting preceding the 2010 conference of the Convention on Biological Diversity. It is also promoting a GEO BON role in the Science-Policy platform on Biodiversity and Ecosystem Services (IPBES).

The Global Climate Observing System (GCOS) recently presented a full report on its activities to the Climate Change Convention's Subsidiary Body on Scientific and Technical Advice (SBSTA), which endorsed and accepted it. With SBSTA's encouragement, GCOS is now preparing a comprehensive update of its implementation plan. It is also working on a strategy for fully supporting the climate information services framework that was launched at WCC-3.

The European Environment Agency (EEA) organized a major meeting in May to explore how to build a sustainable observing strategy to support GEO and other bodies and processes. The EEA hopes that the conclusions of this discussion will be helpful to future GEO activities and will provide a focus for its growing interest in GEO and GEOSS.

EuroGeoSurveys contributed to several GEO committees and provided expertise in the collection and management of in-situ data. It has increased its involvement in GEO Tasks and sub-Tasks, including those for capacity building in Africa. EuroGeoSurveys has made important contributions to OneGeology, a major global initiative that has achieved enormous progress over the past year, and it has supported ongoing work on geohazards.

The Open Geospatial Consortium (OGC) leads the development of the Architecture Implementation Pilot (AIP). The second phase of the pilot is focusing on Landsat images, GBIF data, and data on disaster management and air quality. The third phase starts in January and will address other SBAs. It noted that the AIP was made possible by open standards, and that the Consortium includes private companies as members.

Germany said that the GEO Work Plan Progress report was an excellent document but asked that implementation problems and GEO's added value be emphasized more in future reports. The UK requested an editorial amendment. Italy complemented the Secretariat and said that GEO now seems well positioned to provide excellent examples of achievement to the Ministers next year.

3 CROSS-CUTTING ISSUES

3.1 GEOSS Common Infrastructure Report and Recommendations for Long Term Operations (Document 6)

Mr Ivan DeLoatch, Co-Chair of the GEOSS Common Infrastructure (GCI) Initial Operating Capability (IOC) Task Force, described the work of the Task Force over the past 15 months and presented its eight recommendations for the long-term operation of the GCI.

The recommendations related to (1) the GEO commitment to an operational GCI, (2) the component providers' commitment, (3) the GCI core principles, (4) the establishment of a GCI Coordination Team, (5) registration of high-quality GEOSS content, (6) interoperability within the GCI, (7) the need for a GCI reserve fund, and (8) the establishment of a single GEO web portal and a single clearinghouse.

The Chair informed the Plenary of the Executive Committee's deliberations on the previous day, where it reached a consensus on supporting recommendations 1, 2, 3, 5 and 6. Regarding recommendation 4, the Committee would prefer that the proposed GEOSS Common Infrastructure Coordination Team (GCT) report to Plenary. Regarding recommendation 7, it believed that the nature and definition of the GCI Reserve Fund should be clarified and, if established, the Fund should be administered by the Secretariat. It supported the 8th recommendation of having a single GEO portal and clearinghouse.

The WMO requested that recommendation 3 comply with the basic interoperability standards adopted by the GEOSS 10-Year Implementation Plan. This was both a technical and political issue that needs to be addressed.

The European Space Agency (ESA), which together with the UN Food and Agriculture Organization (FAO) is providing a portal within the GCI, said it will continue to develop and finance this portal through 2010 and possibly 2015. ESA's concerns concur with those of the Executive Committee and include the unclear reporting lines of the GCT, its responsibilities, and the management of the proposed trust fund. The GCT must be inclusive, and in-kind contributions should be recognized.

Australia supported the Executive Committee statement, emphasizing the critical importance of the GCI as a core interoperability mechanism for supporting users. It said that voluntary contributions should form the basis for the GCI. Sound governance and transparency were essential, and the GCI should not introduce new barriers to interoperability.

The UK supported the Executive Committee statement and the single portal/clearinghouse concept. It emphasized the need to build on existing capacity and to focus on content and delivery. Core data sets for the GCI should be identified.

The US reiterated the need for a full and open data policy. Agreed architecture standards and principles need to be adhered to, and more components and systems must be brought into GEOSS. Recommendations 4 and 7 should be explored further and resolved by the Executive Committee. The US supported the idea of highlighting the GCI at the Ministerial.

Canada felt that recommendations 4 and 7 require more information in order to assess their implications. The proposed GCT would require terms of reference and clarity about the process of identifying members. With respect to recommendation 7, Members and Participating Organisations

would need a better appreciation of the cost implications and the consequent obligations. The sustainability of the GCI should be raised at the Ministerial Summit.

South Africa emphasised the need for sustainability, transparency, redundancy and inclusiveness. It proposed that the Plenary establish a drafting group to draft terms of reference for the GCI that could then be considered by the Plenary before the end of the meeting. The Plenary agreed with the South African proposal.

The drafting team reported back to the Plenary on the following day. Italy stressed the need to solicit more nominations to the Coordination Team via the Secretariat. The UK pointed to the need to prioritize and to be realistic about the GCI. ESA and CEOS emphasized the need to make the terms of reference more rigorous.

Following this discussion, the Plenary agreed to establish the Coordination Team. It accepted all of the Task Force's recommendations except for numbers 4 and 7. It requested the Coordination Team to improve both the terms of reference and the GCI recommendations document based on the Plenary discussion. It invited Members and Participating Organizations to submit their comments in written form to the Secretariat. The revised document will be submitted to, and finalized at, the next meeting of the Executive Committee.

3.2 Data Sharing Principles Implementation (Document 7)

Mr Alan Edwards, Co-Chair of the GEO Data Sharing Task Force, presented the document. The proposed implementation guidelines aim to advance the practical application of the data sharing principles; enable the users of GEOSS to reuse and re-disseminate shared data, metadata, and products; ensure that the principles are implemented in a manner that is consistent with relevant international instruments and national policies and legislation; promote pricing policies that are consistent with the principles; reduce delays in making data available through GEOSS; and promote the use of GEOSS data, metadata, and products for research and education.

The European Space Agency (ESA) agreed with the Task Force recommendations. It informed the Plenary that ESA's policy is to establish full and open access to data from its Sentinels series of satellites, contributing to Europe's GMES program; it expects that the European Union will also adopt this joint policy. Data from ESA's Earth explorer missions will also be available on the same basis.

COSPAR informed the Plenary that its upcoming Scientific Assembly in Germany would be highlighting GEOSS. He welcomed the GEOSS data sharing principles and urged that they be used to close data gaps and time delays.

The US welcomed the current draft data sharing guidelines and strongly supported their acceptance. It reiterated the fundamental importance of the principles of free and open access to data with minimum time delays and costs.

France supported the implementation guidelines and data sharing principles but could not support the current wording, particularly the word "unallowable", in section 4.5 of the document.

Canada said that more clarity was required in the sections of the document referring to national policies, which in Canada's view should be overriding. In this regard, it requested that the implications for a country wanting to contribute data, but not adhering to the data sharing guidelines, be clarified. It also requested that the definitions of "research" and "education" be defined within GEO to ensure consistency.

China recommended that the Task Force coordinate its work with Participating Organisations and with GEO elements such as the GCI, GEONETCast and the Capacity Building Committee.

South Africa recognized that making data accessible is a necessary step, but GEO should also focus on the use of data; the Task Force should also work with the Capacity Building Committee in this regard.

India supported the guidelines and requested that GEO develop appropriate definitions of “education”, “research” and “public good”. CEOS suggested that the focus on definitions was misplaced; GEO needed to move forward on data democracy, a concept that emphasizes the use of data. Italy said that it was important to establish and build a specific capacity-building item on data and its use, and that this could be a fundamental message to the Ministerial.

South Africa appreciated and welcomed the principles and the guidelines. It noted that for many developing countries Earth observations are not on their list of priorities. It also said that making data accessible is a necessary but not sufficient condition. Communities must be empowered to use data: this is the only way to make GEOSS a truly global system.

GCOS said that the conference statement from WCC–3 reinforced the idea of climate observations as a global public good and the need for open access to them.

Brazil said that while the data sharing guidelines will take a long time to be fully implemented, the world has nevertheless moved quite quickly on this issue. It reminded the meeting of announcements by Brazil and China, and then the US, and now ESA, on their actions to ensure full and open access to satellite data. Now that many countries have pledged to make their data fully available, the next step is to move forward to data democracy and capacity building for using data, as recommended by South Africa. It urged GEO to move faster rather than to focus on details that are not immediately relevant.

Italy appreciated the document and the work done, including the work on data democracy. A capacity building program for this is needed and could be highlighted at the Ministerial.

The Chair requested that the Task Force consider the comments made during the session and report back to Plenary with an amended text. Reporting back the following day, the Task Force proposed a number of amendments addressing the concerns of the Plenary. It had taken particular note of the interventions on “data democracy” and related capacity building requirements. The Plenary then accepted the document with the exception of the Action Plan, which is to be further developed.

Australia said that the amended text addressed the concerns that had been raised but introduced a new problem by implying that GEO should encourage cost recovery, i.e. charging for data. It suggested rewording the text on pricing and licensing. France said that cost recovery was a more appropriate concept than pricing.

Japan expressed concern about the interpretation of the phrase “without reuse or redistribution restrictions”. It noted the importance of encouraging the wider use of data and the development of a citation system for data.

The chair reminded the Plenary that it had accepted the entire document and that it should not now be reopened. The document should be considered accepted except for the part relating to the action plan.

CEOS said that the revised text did not fully capture his remarks of the previous day and proposed deleting paragraph 6. Regarding Japan’s concern, it noted that this was a subject that GEO has not yet properly addressed. Other communities have established creative commons licenses assigning rights and responsibilities to author and the users of their data. GEO should start to think about the need for some kind of creative commons license program. The Chair said that this is an issue that could be addressed through the Action Plan.

GSDI noted that the document says that GEOSS welcomes all data contributions into GEOSS, which implies the inclusion of data encumbered by restrictions.

The EEA agreed with Japan’s point about citation tracking and suggested that it be addressed through the Action Plan.

ICSU/CODATA said that attribution to authors, which is already mentioned in the guidelines, is an important issue and welcomed the proposal that it be followed up through the Action Plan. ESA said that as a practical and technical matter, traceability can be difficult to implement.

The Chair said that all of these comments will be reflected in the minutes of the meeting and in the Action Plan. Summing up the discussion, the Chair concluded that the document was accepted with the final additions from Australia and France. The Task Force will take the issues raised into account when drafting the Action Plan, which will be prepared over the coming year and presented to the 2010 Ministerial.

4 DATA SETS, OBSERVING SYSTEMS AND INFORMATION SERVICES HIGHLIGHTS

4.1 Forest Carbon Tracking (Document 8)

Mr Gary Richards, Co-Lead of the GEO Forest Carbon Tracking (FCT) Task, made the presentation. He described the significant progress that has been made and the contributions of various organizations and government agencies. He highlighted the need for an operational global network of national forest monitoring systems to support efforts to reduce emissions, the importance of data-sharing arrangements, and the need to integrate satellite and ground data. In 2010, the FCT will focus on outreach and communications for the datasets gathered so far.

The EC welcomed the initiative and recognized the hard work involved. Noting that GEO is a global venture that focuses on integrating cross-cutting data sets, it urged that the forest carbon monitoring capability be fully embedded in GEO's Global Carbon Observation and Analysis System.

Canada, which co-leads the initiative, said that it is making the archive of Canadian radar data open and available to the FCT community as a contribution to this Task. It is also supporting Mexico, which is one of the national demonstrator countries.

Japan is contributing data from the ALOS satellite. The FCT initiative is important for evaluating the absorption of carbon dioxide by carbon sinks. It proposed that this initiative be accelerated and highlighted at the Ministerial Summit.

The US is also participating in the Task by providing imagery, processing, and technical assistance to national demonstrators. It is assisting with the design and implementation of systems and the development of documents. Success will require full access to moderate and high-resolution optical and radar land imagery. It agreed that integrating the initiative with the overall GEO carbon monitoring system is important. The Landsat program can make an important contribution, but there is a need to advocate for the long-term continuity and full availability of Landsat-type datasets.

The Food and Agriculture Organization (FAO) recognized that both CEOS and GEO can play important roles in coordinating satellite data for a wide range of uses, including forest carbon monitoring. It encouraged further dialogue with CEOS, governments and UN agencies to avoid confusion amongst the various approaches to forest mass assessment. Closer collaboration with the UN REDD program and the FAO Global Forest Resources Assessment is needed to ensure the availability of common in-situ measurements for verification and validation in the FCT process.

Brazil stated that it is participating in the initiative as a National Demonstrator and providing CBERS data on the Congo Basin and other National Demonstrator sites.

Cameroon expressed interest in the FCT Task and noted that the Congo Basin countries have been admitted to the Forest Carbon Facility of the World Bank. To fully participate in REDD and position itself in the climate change negotiations, Cameroon needs technology transfer and training for its nationals on using and analyzing satellite imagery and in-situ measurements.

CEOS noted that all the FCT Task leads were willing to work with FAO, which had produced a very useful fourth global Forest Resources Assessment report. However, that it should be recognized that the global community is moving towards the use of "best-effort" data collected through FCT contributors. In the world of the future, past approaches to data assessment will be superseded by assessments that combine satellite and in-situ data. Space agencies committed to full and open data

access are now looking at the next “operational” step. It reiterated the call for data democracy and capacity building. It believed that GEO could build a global forest monitoring system with the level of detail required by the Climate Change Convention and by future political agreements.

Mr Richards responded by acknowledging that the FCT is indeed a large and challenging effort to build an operational system. The system will be based on existing activities and institutions and on filling in the gaps as needed. Identifying user needs, networking and further design work will be critical to progress in 2010.

4.2 Global Carbon Monitoring System (Special Report)

The presentation was made by Ms Beverly Law of the Carbon Community of Practice. She highlighted the importance of developing and integrating observation systems at the local, regional and global levels in order to better understand the global carbon cycle. Current estimates of the role of land-use change are particularly uncertain. There are major gaps in the in-situ networks for the southern hemisphere. Massive improvements are needed in the precision and accuracy of measurements, and the current research network must become operational.

Italy asked about the use of MODIS satellites, which underestimate amounts, and pointed to the need for more high-definition satellite measurements. Ms Law agreed on the need to improve confidence in such measurements.

The US strongly supported the Task and reiterated that various carbon-related sub-Tasks need to be better integrated. He said the carbon Community of Practice provides an important opportunity to connect the carbon community to national needs for emissions tracking and to REDD.

The Secretariat Director acknowledged the US point about the need for the various sub-Tasks relating to the carbon cycle to be linked to one another and to policy needs. He said that the Forest Carbon Tracking Task team has developed a proposal for moving from the demonstration phase to an operational global system based on the Plenary’s earlier support. This work will move forward quickly.

4.3 GEO Biodiversity Observation Network (GEO BON) (Document 9)

Mr Bob Scholes, Chair of the GEO BON Steering Committee, presented the document. He described GEO BON as a 21st century, self-organizing, adaptive network. He explained the role of the Steering Committee, topical Working Groups, regional “BONs”, “early products” and foundation documents. He noted the outpouring of support from key stakeholders, including both data suppliers and data users. GEO BON promises to make an important contribution to the work of the Convention on Biological Diversity and the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES).

Italy noted that the recent G8 and G20 meetings had highlighted the biodiversity issue. It urged GEO BON to address the causes and impacts of biodiversity loss, the linkage between biodiversity and carbon levels, and illegal logging and the wildlife trade.

Switzerland expressed his pleasure in the progress made so far by GEO BON and said that it may be appropriate to highlight it at the 2010 Ministerial. The “early products” are particularly crucial to demonstrating GEO BON’s potential. It noted that Switzerland is supporting the implementation of one of these products.

The EC, too, is contributing to GEO BON implementation through a variety of actions. It noted that the EBONE project, in particular, focuses on strengthening the biodiversity network in Europe.

The Chair invited the representatives of GEO BON to take these interventions into consideration in their future work.

4.4 Towards a GEO Baseline Initiative (Document 10)

Mr Doug Muchoney of the GEO Secretariat presented the document. He explained that the baseline initiative would draw on ongoing GEO activities for assembling interoperable datasets of imagery and derived products for year 2010. Once established, the baseline could support international agreements, the research community, scientific assessments, managers and the public. The Secretariat Director said that the Secretariat would seek to develop this proposed initiative further after collecting feedback and suggestions from the GEO community.

5 PREPARATORY ACTIVITIES FOR THE MINISTERIAL SUMMIT 2010 (DOCUMENT 11)

The Secretariat Director informed the Plenary that the 2010 Ministerial Task Force had been established at the request of the Executive Committee. The Task Force is being co-chaired by Canada, China and the EC.

Mr David Grimes, Co-Chair of the Task Force, introduced the document. The first meeting of the Task Force discussed how to develop messages and products for the Summit and how to develop the draft Declaration. The Ministerial is an opportunity for the GEO community to highlight its achievements and its continued commitment to GEOSS and to inform and engage Ministers. He explained that the GEO Committees will be invited to propose a limited number of “showcases” to present to the Ministers.

The US said the upcoming Ministerial provided the occasion for Ministers to recognize the progress that GEO is making. It encouraged the Task Force to examine a few key areas, including land-use planning, food security and human health, and climate adaptation and carbon. It said that GEO needs to show a marked advance. In 2010 it should already be setting goals for 2013.

Italy thanked the Task Force for its excellent work. It suggested that it also consider sending letters to foreign affairs ministers. All ministerial letters should be signed at the highest possible level and be issued only after the Copenhagen climate change conference. It agreed with the US, which had recommended that no more than three or perhaps four showcases be presented. It pointed to food security as a potentially good choice.

Mr Grimes thanked the speakers for their suggestions and said that, for the sake of transparency, the Task Force would invite and await proposals for showcases from the entire GEO community. The Task Force too has thought that three or four showcases were probably the right number. He also agreed that the first announcement should be sent out in January.

6 GEOSS STRATEGIC TARGETS (DOCUMENT 12)

Mr Greg Withee, Co-Chair of the Target Task Team (T3), presented the document. He explained how the Task Team had conducted its work. It had not generated completely new targets, but rather had distilled the original 241 targets into a smaller, more focused and Minister-friendly set of targets. He then presented each one of the 14 draft revised targets. The Chair reminded the Plenary that the goal now was to accept these revised targets.

Japan stated that the revised weather target had been changed from the original draft and that the language should reflect the comprehensive vision for GEOSS as set out in the 10-Year Implementation Plan.

WMO thanked the T3 and supported the rewording of the weather target. It said that the changes were made so that organizations with mandates in this field could support the target.

Italy said the introduction to the document should be amended to include the most recent G8 and G20 comments. It did not support the position of WMO and agreed with Japan that the scope of the target should not be limited and that it must be consistent with the GEO vision.

GCOS said that all major UN and sponsor agencies had been consulted on the climate target and that the GCOS community was now united behind the current formulation.

South Africa supported the comments of Italy and Japan, adding that the new weather formulation was too reductionist. It said that the 10-Year Implementation Plan included the improvement of forecasts.

The European Centre for Medium-Range Weather Forecasts (ECMWF) agreed with Japan about returning to the original wording, pointing out that the debate went back to the early discussions about whether GEO only dealt with observations. It noted that TIGGE, an important Task in the Work Plan, would not fall under the weather target as now formulated.

Norway applauded the work of the Task Team. He said that the key point now was to make sure that the Work Plan could be aligned with the targets.

CEOS noted that GEO has achieved a great deal over the past five years and that it was not advisable for it to go back and limit itself. It supported the views of Japan.

Russia supported the WMO wording, saying that it reflects the actual situation. It noted that WMO is the main player in the weather Societal Benefit Area.

Argentina called for allowing the representative of Guinea to make an intervention in French despite GEO's reliance on English and asked whether there would be interpretation at the Ministerial. The Secretariat Director confirmed that GEO operates in English and that interpretation has traditionally been provided for Ministers.

Canada noted that the weather target is the only one without an accompanying statement about why the target is important. Weather forecasting clearly exists to serve human well-being. Some further work is needed to ensure that a consensus on the wording can be reached.

Australia supported the explanations provided earlier by Mr Withee about why the wording had been changed. It said that it is important that key participants remain part of the process and that the Plenary should pay heed to WMO's concerns. The targets could be accepted as living document, which would provide time for making revisions later.

The UK supported Norway's view that the key issue now is how to measure progress on the targets and to present this to the Ministers.

The Chair proposed that the Plenary return to this issue the following morning. When the item resumed, WMO proposed a compromise text for the weather target. Cameroon, Japan, Italy, Norway, Russia, South Africa and the US all stated their agreement with the revised text.

The Chair stated that the document was now accepted by the Plenary with the newly formulated target 14 on weather. However, it observed that the discussion revealed a difference of interpretation of GEO's mandate with respect to the weather target. Rather than simply papering over this difference with word-smithing, the GEO Co-Chairs would work actively over the coming year to resolve this issue.

7 GEOS MONITORING & EVALUATION (DOCUMENT 13)

The Chair introduced the item by noting that, in addition to the three previous nominations to the new Evaluation Team Chair, the US has now offered to provide three more members.

Mr Charles Baker, Co-Chair of the GEOSS Monitoring & Evaluation Working Group, presented the document and summarized the history of the process. The full evaluation will be made in 2015. A mid-term assessment based on the Cape Town Declaration will be prepared for the Beijing meeting next year. He stated that the next major step is recruiting the Evaluation Team, which now has six members but is authorized to have up to 15.

Brazil announced that it would like to participate in the Evaluation Team.

CEOS endorsed the document. It said that GEO is the first of many 21st century networked organizations that will consist primarily of an enormous number of participating nodes. The central node needs to be kept as lean as possible, but the GEO Secretariat does need to be reinforced in order to handle the growing amount of work.

Canada said that the upcoming evaluation is important. Given its uniqueness, the nature of GEO's governance needs to be reflected. It offered to provide an evaluation expert to the team.

Germany endorsed the document while noting that issues of financing the evaluation process remain open. The US also endorsed the document and looked forward to receiving the mid-term evaluation report at GEO-VII.

Japan stressed the importance of the evaluation and said that it will enable the GEO community to understand how much it has achieved. It nominated a member for the Evaluation Team.

Italy supported the document and said it would consider providing an expert to the Secretariat.

Pakistan also endorsed the document, and he supported Brazil's call for strengthening the Secretariat.

The International Society for Photogrammetry and Remote Sensing (ISPRS) endorsed the document and proposed an additional member for the team.

The document was accepted by the Plenary.

8 2009-2011 WORK PLAN ANNUAL UPDATE (DOCUMENT 14)

The Secretariat Director introduced the document. He said only minor amendments have been made, including the introduction of two new overarching Tasks and five new sub-Tasks, the relocation of some sub-Tasks, and the updating of the guide to work plan management. These modest adjustments confirm the stability of the GEO Work Plan. He noted that, with the new Work Plan Management System on-line, future changes in Points of Contacts and other details will be made automatically and in real time.

The EC welcomed the update and suggested that one sub-Task be moved to a new location. It also asked that the Secretariat take early action to send letters of acknowledgement to Task leads to ensure that they are officially recognized by GEO.

The Global Terrestrial Observing System (GTOS) proposed some minor editorial changes to one Task.

CEOS highlighted two Tasks that involve major efforts by space agencies to coordinate the acquisition and provision of valuable data. It cited the Virtual Constellation Task being led by Japan and the data democracy Task, which will help developing countries to fully use GEOSS.

The Secretariat Director seconded the statement by CEOS that GEO is truly a 21st century organization. He also applauded the successful coordination that has occurred amongst space agencies. More work will be needed on coordinating in-situ observations in the future, along the lines of what is now occurring on global soil mapping.

GCOS asked whether, now that the revised targets are listed in alphabetical order, the same could be done for the SBAs in the Work Plan. The Secretariat Director agreed that such alignment is probably desirable but would be a major change. In addition, this would not be aligned with the 10-Year

Implementation Plan. Slovenia stated its interest in adding a drought monitoring activity in Central Europe to the Work Plan.

The document was accepted as a living document.

9 EXECUTIVE COMMITTEE MATTERS

9.1 Report of the Executive Committee (Document 15)

Mr Mmboneni Muofhe of South Africa presented the report. He noted that the Executive Committee has met three times since GEO-V to address issues of administration and process management. It has advised the Monitoring & Evaluation Working Group, the T3, and other ad hoc GEO bodies; received reports from the Committees; and prepared for the GEO-VI Plenary meeting. He highlighted the importance of sustainable budgeting and the Committee's view that the Trust Fund requires an annual minimum of CHF 3.5 million in contributions, with an ideal level of CHF 4.5 million. He stressed the importance of promoting GEO success stories, engaging the G8 and G20, and informing decision makers about GEOSS. The Committee has asked the Secretariat to continue working on the issue of private sector engagement.

There were no comments and the report was accepted.

9.2 Executive Committee Membership (Document 16)

The Chair stressed the importance of consensus on this issue and confirmed that any changes agreed at this session would go into effect immediately. The GEO Co-Chair from the EC then presented the report. She reminded the Plenary that at GEO-V the Asia/Pacific caucus had requested that GEO consider increasing the size of the Executive Committee to allow four countries from that caucus to participate. The Committee had evaluated this proposal and explored a number of other options as well. It concluded that its preferred option was to accept the Asia/Pacific proposal, and this was its recommendation to the Plenary.

The Chair, who also serves on the Executive Committee, said that at its meeting the day before the Committee had now reached a full consensus on recommending that the Asia/Pacific proposal be accepted. She opened the floor for any objections. There were none, and the proposal to add a fourth member of the Asia/Pacific caucus to the Executive Committee was accepted. As a result, the Executive Committee now has 13 members.

10 GEO COMMITTEES

10.1 Reports from Committees (Documents 17, 18, 19)

Mr. Ellsworth LeDrew, Co-Chair of the User Interface Committee (UIC), presented the Committee's report. He said that the UIC has developed an activity plan and made major progress. The UIC supports the GEO Work Plan, GEOSS applications, the Societal Benefit Areas and the Communities of Practice. It is focusing on user engagement and increasing participation in GEO in targeted regions. He described the progress on the highly successful CBC/UIC Call for Proposals. He called for more GEO Members to join the UIC and to support the participation of developing countries in the UIC and in Communities of Practice.

Mr Ivan DeLoatch, Co-Chair of the Architecture and Data Committee (ADC), described the ADC's responsibilities. Key issues include the sustained operation of the GEOSS Common Infrastructure, the Standards and Interoperability Forum (SIF) and its work on the standards registry, the user requirements registry, the best practices Wiki, and the Architecture Implementation Pilot-3, which is being launched in time to have results for the Ministerial. He urged participants to register their

systems, services, data and standards in the GEOSS Common Infrastructure. He noted that in 2010 the ADC will address the technical considerations of the GEOSS data sharing guidelines and other issues related to data management.

Mr Alan Edwards, Co-Chair of the Capacity Building Committee (CBC), described the Committee's "I3" strategy, the principles for GEO capacity building, the CBC's meeting schedule and activities, the new capacity-building target developed by the T3, the updated overarching Tasks, the EC's 7th Framework Programme's contributions to capacity building, and the success of the CBC/UIC Call for Proposals. Given the size of the response to the Call for Proposals, he encouraged participants to volunteer as evaluators or advisors for the proposed projects.

Mr Jörn Hoffmann of the Science and Technology Committee (STC) reported that the Committee has developed a roadmap, helped to define and initiate two S&T Tasks for implementing the roadmap, supported the preparation of the IGOS Symposium, supported the review of the CBC/UIC Call for Proposals, convened GEOSS sessions at scientific conferences, and worked to engage science and technology communities in GEOSS. He noted the importance of catalyzing research & development resources and engaging the private sector in strengthening the science and technology dimension of GEOSS.

The IEEE said that, together with ISPRS and the Open Geospatial Consortium (OGC), it is organizing workshops for promoting GEOSS in Africa. It noted the importance of reaching people working in the field and encouraged the CBC to address outreach and awareness-raising.

China noted the great amount of work that the Committees are doing, including their oversight of Tasks. When the Committees identify possible showcases for the Ministerial, it suggested that they highlight Tasks that are building an operational GEOSS.

Brazil expressed his support for the Committees' work. It noted that the large response to the Call for Proposals demonstrates that GEO is reaching out effectively. It endorsed the Committee reports and said that Brazil plans to continue serving as a CBC Co-Chair.

The US encourages participants from all regions to consider joining the UIC to ensure that it reaches a broader user base. It supported the STC's roadmap and its plans to conduct a gap analysis. Noting that there is no pre-established funding source for the Call for Proposals, she encouraged the GEO community to provide advisory and financial support for promising projects.

10.2 Recommendation on Committees and Working Group

The Chair proposed that the Plenary extend the four Committees and the Monitoring & Evaluation Working Group for one year. Hearing no objections, it was so decided.

10.3 Nomination of Committees and Working Group Co-Chairs

The Chair then called for volunteers to serve as Co-Chairs of the Committees. The Plenary recognized the following slate of Co-Chairs:

User Interface Committee: EC, France, Germany, US, and IEEE.

Science and Technology Committee: Australia, Germany, Italy, South Africa, UK, US, and COSPAR. (The EC withdrew as Co-Chair but pledged to continue supporting the Committee.)

Capacity Building Committee: Brazil, EC, South Africa, Spain, and UNESCO.

Architecture and Data Committee: China, EC, Japan, US, and CEOS, IEEE and WMO.

Monitoring & Evaluation Working Group: Canada and US.

11 ROLE OF PARTICIPATING ORGANIZATIONS (DOCUMENT 20)

Mr Muofhe of South Africa presented the document. He reminded the Plenary that concern had been expressed the previous year about the process for assessing candidates interested in joining GEO as Participating Organizations. In response, the Executive Committee has drafted a paper proposing guidelines for improving the process. These guidelines do not seek to alter those set out in the 10-Year Implementation Plan; rather, they aim to ensure that organizations granted the official status of Participating Organization contribute meaningfully to GEOSS by facilitating Earth observations, building capacity, contributing data and information systems, or implementing Tasks. He noted that organizations do not require the status of Participating Organization in order to contribute to GEOSS implementation.

The International Council for Science (ICSU) recognized GEO's concerns and, while agreeing that Participating Organizations should add value and make meaningful contributions, hoped that the new guidelines would be interpreted and applied flexibly. His particular concern was that science bodies be considered eligible even if they are members of ICSU, which is itself already a Participating Organization.

The United Nations Environment Programme (UNEP) spoke on behalf of the Interagency Coordination and Planning Committee for GEO/GEOSS (ICPC). The ICPC includes the UN agencies and ICSU, which together sponsor GCOS, GTOS and the Global Oceans Observing System (GOOS). The ICPC has recognized that the GEOSS 10-Year Implementation Plan presents a unique opportunity for coordination in this field. The ICPC planned to meet later in the day to further consider how the UN agencies can contribute to the 10-Year Implementation Plan. He noted the Australian proposal of creating a mechanism for UN agencies to offer advice via the Executive Committee.

The Secretariat Director responded to ICSU by noting that the acceptance of the ICSU members DIVERSITAS and IUGS as Participating Organizations confirmed GEO's flexibility in applying the rules.

The Plenary accepted the document.

12 FINANCIAL REPORTS

12.1 2008 Financial Statements (Document 21)

12.2 Report of the External Auditor (Document 22)

12.3 Report on Income and Expenditure 2009 (January to September) (Document 23)

The Secretariat Director introduced Documents 21, 22 and 23 together. He invited participants to review the tables in Document 21 summarizing the cash and in-kind contributions of the Members and Participating Organizations. He noted that the cash contributions for 2008 totaled almost CHF 3.2 million. The opening balance for 2008 was CHF 2.26 million compared to a 2009 opening balance of CHF 2.15 million. Contributions for 2009 remain 30% below the CHF 4.5 million budget that the Plenary adopted at GEO-V.

To ensure that it did not overspend actual receipts, the Secretariat reduced staff mission travel in 2009 by 35% and expenditures on outreach and workshops by 50%. It also reduced support to the travel of developing country participants and to Secretariat representation at GEO-related events. The external audit report notes that the Secretariat had reacted well by scaling back expenditures. Contributions for 2009 are expected to total CHF 3.3 million by year end. The Trust Fund reserve, or potential carry-forward into 2010, has declined to around CHF 1.7 or 1.8 million.

12.4 Report of the Informal Finance Review Team (Document 24)

Ms Sue Barrell, Co-Chair of the Informal Finance Review Team, presented the document. She recalled that the Review Team was established in 2008 and has met over the course of the past year to address the difficult situation facing the Trust Fund. The Executive Committee expressed concern at its September meeting and asked the Review Team to present a strong message and inform the Plenary that, without an effective level of contributions, the delivery of GEOSS would be compromised. She noted that contributions have remained at the same level even though membership has increased and a budget of CHF 4.5 million has been recognized as appropriate. The Team's recommendations include increasing cash contributions while maintaining in-kind contributions, improving the flow of financial information to Members in order to motivate them, and demonstrating the success of GEOSS, including at the national level. She emphasized that the Secretariat Director has consistently maintained the level of spending at the level of receipts over the last three years. She added that such a process cannot be continued, and that as GEO evolves into a more mature organization it ought to present a balanced budget.

12.5 Secretariat Operations Budget for 2010 (Document 25)

The Secretariat Director informed the Plenary that the proposed budget for 2010 was in line with the budgets adopted in previous years. It follows the Executive Committee's recommendation that the budget be set at CHF 4.5 million. He noted that the reduced number of seconded staff created a need to hire contractors more frequently, and that the proposed 2010 budget does not make any specific allocation for the preparation of the 2010 Ministerial Summit. Although a number of important contributors have not yet made their pledges for next year, the expected level of contributions for 2010 seems set to fall below CHF 4.5 million unless important changes are made. He recognized that he was asking the Plenary to accept an unbalanced budget, but underlined that this was on the understanding that the Secretariat will not spend more than the actual receipts. While contributions were above CHF 3.5 million in 2006, they have declined since and stabilized at CHF 3.2 million, despite the growth in membership.

The Plenary accepted Documents 21, 22 and 23, and the Chair opened the discussion on Documents 24 and 25.

Italy said that the Finance Review Team's document needed to be more pragmatic and analyze why the shortfall is occurring. It suggested two likely reasons: the global economic recession and the reality that countries are not as committed to GEO as one might wish. It said that the title of the annex to the document should be revised to make it more attractive to politicians. Given the general sense that GEO has made excellent progress, it was important not to simultaneously send an opposite, pessimistic message. It urged that GEO's message to Ministers be one of success and accomplishment. It noted that while the number of GEO Members has doubled, many of the new Members are not large economies.

France agreed with Italy. It also expressed some concern about the annex to the document. It said that he could not agree on the annex unless the fifth paragraph was rewritten.

Norway said that the Plenary had discussed at length the excellent work of the GEO community and of the Secretariat. There is a large discrepancy between the funding that the Secretariat believes it needs and the amount that countries are willing to pay. It did not agree with the statements of Italy and France. While it too did not support all of the wording in the annex, it urged the Plenary not to focus on minor editorial changes but rather to decide whether or not it truly believes that the budget should be CHF 4.5 million. Norway believes that it should be and that the Members should fund it.

Echoing Norway, the US said that if GEO is worth doing it is worth funding. It believed that CHF 4.5 million was a very reasonable budget given the activities and vision of GEO. It congratulated the Secretariat for living within its means and hoped it would not have to reduce its expenditures forever.

Fifteen countries are contributing CHF 3.3 million, leaving 65 countries to share the remaining CHF 1.2 million, which should be possible.

Brazil said that CHF 4.5 million is not a huge amount and should be achievable. Brazil is contributing a seconded expert to the Secretariat.

Italy said that CHF 4.5 million is a reasonable and acceptable budget. The European Union covers over 50% of the budget and others should contribute more. At the same time, he reminded the Plenary that the GNP of all Member countries had declined several percentage points over the past year.

The Chair proposed that the discussion be captured in the minutes of the GEO-VI Plenary and recommended an approach to revising the annex. The Plenary accepted the Informal Finance Review Team document without the annex. It approved the budget document and appended to it a shortened and revised version of the Review Team's annex.

The US pledged USD 650 000 plus two seconded experts from the National Oceanographic and Atmospheric Administration (NOAA) and the United States Geological Survey (USGS). It encouraged other Members to consider increasing their contributions.

The EC said it intends to contribute €650,000. It will also explore whether it can provide travel costs for developing countries to participate in GEO-VII and in meetings of the Capacity Building Committee.

Brazil said that it would support a seconded expert for the next five years.

Argentina said that it would maintain its level of contribution. It also asked the Secretariat to develop figures showing the average level of contribution to give Members a better sense of how they could contribute.

South Africa pledged to increase its contribution from R 1 million to R 1.5 million and to continue seconding an expert to the Secretariat.

Guinea noted that developing countries are the principal beneficiaries of GEOSS and encouraged Members to contribute.

China said that it would maintain its level of contribution and host the GEO-VII Plenary and 2010 Ministerial Summit.

The European Space Agency confirmed that it would maintain a seconded expert until April 2011.

12.6 Transition to the International Public Sector Accounting System (Document 26)

The Secretariat Director introduced the document. He explained that the external auditor recommended that GEO transition to this new, more accurate system. A key reason is that WMO, which administers the GEO Trust Fund, will implement the system from the beginning of 2010. The Plenary endorsed this decision.

13 PRESENTATION OF SLATE OF NOMINEES FOR THE EXECUTIVE COMMITTEE

The Chair invited the Secretariat Director to announce the results of the regional caucus meetings that were held during the week. The results were as follow:

Africa nominated Cameroon and South Africa (GEO Co-Chair)

Asia/Oceania nominated Australia, China (GEO Co-Chair), Japan and Korea

The Americas nominated Brazil, Chile and the USA (GEO Co-Chair)

Europe nominated the EC (GEO Co-Chair), France and Italy

The Commonwealth of Independent States (CIS) nominated Russia

The full slate of nominees was accepted by acclamation. The new members joining the Executive Committee are Cameroon, Brazil, Chile, Italy and Japan.

14 RULES OF PROCEDURE UPDATE (DOCUMENT 27)

The Secretariat Director introduced the document. He described a number of small adjustments, including the establishment of the Monitoring & Evaluation Working Group, the inclusion of its Terms of Reference, and efforts to reconcile inconsistencies between the Rules of Procedure and the Secretariat Performance Indicators regarding time delays for disseminating reports.

Canada said that the proposed extension of the deadline for disseminating Executive Committee reports to the entire GEO community to four weeks was too long. He also stated that the document on the acceptance of Participating Organizations should be available at least two weeks before each meeting of the Plenary, which was not the case at GEO-VI.

The Secretariat Director described the practical difficulties of making Executive Committee reports available more quickly. Canada proposed using language to express the idea of “With minimum delay, not to exceed four weeks”. The US agreed with Canada, noting the importance of transparency. Italy supported the US. The Secretariat Director said that the Secretariat would work with the Executive Committee to accelerate the process. The Chair noted that Executive Committee members do need a certain amount of time to review the Secretariat’s draft report.

The Secretariat Director proposed that a realistic timeframe was four weeks. He agreed that for the Plenary reports the Secretariat should have up to four weeks to distribute the first draft to the GEO Principals, who should then submit their comments within two weeks. The final report should then be released with minimum delay. The Secretariat should make its best effort to ensure that the report is released to the entire GEO community within six weeks.

China noted that the agreed expansion of the Executive Committee to 13 members also now needed to be reflected in the Rules of Procedure.

The Plenary accepted the document with the agreed amendments to sections 2.8, 3.3 and 3.8.

15 ANNOUNCEMENT OF GEO-VII AND 2010 MINISTERIAL SUMMIT (DOCUMENT 28)

China introduced the document. He recalled that one year earlier the Chinese delegation had presented its offer to host GEO-VII and the Ministerial Summit. This invitation had been approved by the government and China had sent a formal letter about its offer to host to the Secretariat. He then presented a short video to the meeting.

The Chair invited the Plenary to approve China’s offer to host GEO-VII and the Ministerial Summit from 3-5 November 2010. The invitation was accepted by acclamation.

Indonesia announced that it will host the 4th GEOSS Asia-Pacific Symposium from 10-12 March 2010 in Bali.

16 16 REVIEW OF SESSION OUTCOMES

The Secretariat Director summarized the draft outcomes of the session, which are annexed to this report.

17 CONCLUDING REMARKS

The US announced that it had signed a letter of intent with the Indian Space Research Organization (ISRO) on collaboration on Earth resources; this is a good example of how GEO encourages successful international partnerships.

Japan announced that it was organizing a GEOSS water cycle meeting in Tokyo from 15-18 December as well as a training course on drought for building capacity.

France announced that the IGOS Symposium would be held on the following day at the Smithsonian museum.

The Chair said that she had enjoyed chairing the meeting and appreciated the openness and collegiality of the Plenary's participants. She noted that a great deal of progress had been made and that the GEO community was clearly energized for the lead up to the Ministerial Summit. She thanked the host government's organizing team for working so hard to make GEO-VI a success.

The GEO Co-Chair from South Africa observed that GEO is transitioning from process to implementation. He noted the need for the right balance between institution building and GEOSS implementation. He was struck by the GEO community's willingness to share and to discuss ideas openly.

The GEO Co-Chair from China said that GEO is on its way to ensuring the successful implementation of GEOSS. He asked all delegates to consider new and emerging issues of importance to the future of GEOSS, particularly in the areas of data sharing and capacity building. He reminded the meeting that data is useless for those who do not know how to use it. He reiterated China's invitation to the GEO-VII Plenary and 2010 Ministerial Summit.

The GEO Co-Chair from the EC described the GEO-VI debates as extremely useful. She thanked the Secretariat for its efforts over the past year and the entire GEO community for its many positive contributions. She congratulated the meeting's Chair and said that the meeting had succeeded in advancing many of the processes critical to GEOSS, including the serious task of preparing the Ministerial Summit. She added that GEO must ensure that the necessary financial resources are available to the Trust Fund to maintain progress.

The Secretariat Director thanked the Secretariat staff and noted that Members are becoming increasingly active during Plenary discussions as GEOSS implementation moves forward. He called this a sign of maturity and concluded that GEO is heading in the right direction.

With this, the Chair adjourned the meeting.

Annex 1: Meeting Outcomes

Tuesday, 17 November 2009

Convene at 09:00

1 Opening of the session

- 1.1 Welcome Address from the United States of America
- 1.2 Opening Remarks
 - Sherburne Abbott, Associate Director for Environment, Office of Science and Technology Policy, United States of America (Chair of the Session)
 - Manuela Soares, Director, Environment (DIR-I), Directorate-General for Research
 - Zheng Guoguang, Administrator, Chinese Meteorological Administration, People's Republic of China
 - Philemon Mjwara, Director-General, Department of Science and Technology, Republic of South Africa
 - Secretariat Director
- 1.3 Administrative Announcements
- 1.4 Adoption of Agenda (Document 1)
- 1.5 Recognition of New Members (Document 2) **Four new members acknowledged – Austria, Malta, Republic of Guinea, Republic of Madagascar**
- 1.6 Statements from New Members
- 1.7 Recognition of Participating Organizations (Document 3) **Two: ISDE, IUGS**
- 1.8 Approval of GEO-V Report (Document 4) - **ACCEPTED**

2 GEOSS Implementation Progress and Highlights

- 2.1 National and Regional activities

*10:30-11:00 Opening of the Exhibition
and Coffee Break*

- 2.2 2009-2011 GEO Work Plan Progress (Document 5) **ACCEPTED**

3 Cross-cutting issues

- 3.1 GEOSS Common Infrastructure Report and Recommendations for Long Term Operations (Document 6) – **Accepted except for Recs. 4 and 7 - Terms of Reference (Doc 29) Coordination Team created to improve document and report to next Executive Committee**
- 3.2 Data Sharing Principles Implementation (Document 7) **ACCEPTED with proposed changes**

4 Data sets, Observing Systems and Information Services Highlights

- 4.1 Forest Carbon Tracking (Document 8)
- 4.2 Global Carbon Monitoring System (Special Report)

12:30 Lunch

Reconvene at 14:00

- 4.3 GEO Biodiversity Observation Network (GEO BON) (Document 9)
- 4.4 Towards a GEO Baseline Initiative (Document 10)

5 Preparatory activities for the Ministerial Summit 2010 (Document 11)

15:30-16:00 Coffee Break

6 GEOSS Strategic Targets (Document 12) **ACCEPTED with a new Target 14****7 GEOSS Monitoring & Evaluation (Document 13) **ACCEPTED******8 2009-2011 Work Plan Annual Update (Document 14) **ACCEPTED******9 Executive Committee Matters**

- 9.1 Report of the Executive Committee (Document 15) **ACCEPTED**
- 9.2 Executive Committee Membership (Document 16) – **Representation of the Asia / Oceania caucus is increased by 1 bringing Executive Committee Membership to 13**

18:00 Adjourn and official Reception

Wednesday, 18 November 2009

Convene at 09:00

10 GEO Committees

- 10.1 Reports from Committees (Documents 17, 18, 19)
- 10.2 Recommendation on Committees and Working Group - **COMMITTEES and WORKING GROUP RENEWED**
- 10.3 Nomination of Committees and Working Group Co-Chairs
ADC: China, EC, Japan, US, CEOS, IEEE, WMO

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

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

UIC: EC, France, Germany, US, IEEE

M&E: Canada, US

11 Role of Participating Organizations (Document 20) ACCEPTED

10:30-11:00 Coffee Break

12 Financial Reports

12.1 2008 Financial Statements (Document 21) **ACCEPTED**

12.2 Report of the External Auditor (Document 22) **ACCEPTED**

12.3 Report on Income and Expenditure 2009 (January to September) (Document 23)

12.4 Report of the Informal Finance Review Team (Document 24)

12.5 Secretariat Operations Budget for 2010 (Document 25) **ACCEPTED with PAGE 2 OF PROPOSED Annex.**

12.6 Transition to the International Public Sector Accounting System (Document 26) **ACCEPTED**

12:30 Lunch

Reconvene at 14:00

13 Presentation of Slate of Nominees for the Executive Committee

Europe: European Commission (Co-Chair), France, Italy

Americas: USA (Co-Chair), Brazil, Chile

Asia/Oceania: China (Co-Chair), Australia, Japan, Korea

Africa: South Africa (Co-Chair), Cameroon

CIS: Russian Federation

14 Rules of Procedure Update (Document 27) ACCEPTED with change in 2.8 and 3.8 and 3.3

15 Announcement of GEO-VII and 2010 Ministerial Summit (Document 28) – ACCEPTANCE of Invitation of China to host GEO-VII and Ministerial Summit

15:30-16:00 Coffee break

16 Review of Session Outcomes

17 Concluding Remarks

17:00 Adjourn

List of Participants
GEO-VI
Washington DC, 17-18 November 2009

Argentina

Conrado Varotto
Laura Frulla

Australia

Susan Barrell
Gary Richards
Roger Dargaville
Alex Held
Stuart Minchin

Austria

Ernest Rudel
Elisabeth Koch
Gerhard Wotawa

Bahamas

Arthur Rolle

Brazil

Gilberto Câmara
Joao Soares
Daniella Araujo
Joao Soares

Cameroon

Valentin Wagnoun
Unusa Haman

Canada

David Grimes
Michael Brady
Michael Crowe
Graham Gibbs
Nicole Gignac
Hugues Gilbert
Ian Jarvis

Kenneth Korporal
Heather McNairn

Central African Republic

Lambert Padou

Chile

Julio Bravo
Mary Mourra

China

Guoguang Zheng
Huadong Guo
Naimeng Lu
Jiacan Wang
Xiaoqing Wang
Binfang Wu
Dake Yang
Jun Yu
Xingying Zhang
Guocheng Zhang

Costa Rica

Werner Stolz
Rodolfo Sanchez

Croatia

Zvonimir Katusin

Denmark

Flemming Jenle
Esben Elbroend-Bek

Estonia

Tiit Kutser

European Commission

Manuela Soares
Gilles Ollier

Alessandro Annoni

Florence Beroud

Laurent Bochereau

Gerard Bradley

Vojko Bratina

Alan Edwards

Stefano Galmarini

Bruno Greco

Astrid Koch

Valere Moutarlier

Francesco Pignatelli

Patrick Vittet-philippe

Finland

Jarkko Koskinen

France

Daniel Vidal-Madjar

Steven Hosford

Francis Bertrand

Claude Boucher

Germany

Paul Becker

Carsten Dettmann

Jens Danzeglocke

Jörn Hoffmann

Michael Nyenhuis

Bernd Richter

Helmut Staudenrausch

Gero Steup

Guinea

Mamadou Bah

India

Ranganath Navalgund

Devi Karnik

Indonesia

Dedi Irawadi

Ireland

Patrick O'Connor

Brendan Kelly

Italy

Ezio Bussoletti

Maria Dalla Costa

Nico Bonora

Alberto Devoto

Roberto Sandulli

Japan

Koichi Morimoto

Takashi Moriyama

Tokunosuke Fujitani

Yukio Haruyama

Masatoshi Kamei

Takero Kasaya

Daisaku Kawabata

Chiyoshi Kawamoto

Toshio Koike

Toshiyuki Nakamura

Ryosuke Shibasaki

Yu Shimmyo

Hiroshi Suto

Tetsushi Tachikawa

Eikichi Tsukuda

Emi Uchida

Minoru Urai

Aska Vanroosebeke

Manabu Yamanaka

Michiaki Yumoto

Jiye Zeng

Korea, Republic of

Hyun-Kyung Kim

Jang-Hyun An

Dong-Ik Hwang

Seung-ho Lee

Madagascar

Samuel Razanaka

Ambinintsoa

Noasilalaonomenjanahary

Netherlands

Roeland van Oss

Ruud Grim

Frank Lantsheer

Niger

Issoufou Wata Sama

Norway

Per Skrøvseth

Bo Andersen

Dag Moldestad

Øystein Nesje

Pakistan

Qamar-Uz-Zaman Chaudhry

Peru

Enrique Pasco

Portugal

Adérito Serrão

Jose Goulart

Carlos Tavares

Romania

Ion Nedelcu

Russian Federation

Alexander Gusev

Alexander Konyakhin

Sergey Kulichkov

Slovakia

Stanislav Jacko

Vlasta Janova

Slovenia

Silvo Žlebir

South Africa

Philemon Mjwara

Mmboneni Muofhe

Valanathan Munsami

Lerato Senoko

Spain

Francisco Cadarso

Ana Casals

Sweden

Stigbjörn Olovsson

Switzerland

Nando Foppa

Veronika Elgart

Thailand

Somchet Thinaphong

Darasri Dowreang

Alongkorn Laow-ngam

Thanomsri Rangasikanbhum

Chaowalit Silapathong

Ukraine

Yurii Kucheriavyi

United Kingdom

Beth Greenaway

Ruth Kelman

Stuart Marsh

Andy Shaw

United States

Sherburne Abbott

Steven Fetter

Thomas Adang

Madelyn Appelbaum

Joan Aron

Grant Aufderhaar

Charles Baker

Arden Bement

Trisha Bergmann

Glenn Bethel

Robert Bewley

Elizabeth Blood

Ken Brewer

Tyra Brown

Jon Campbell

Sarah Carter	David McCabe
Ming Chang	Marcia McNutt
Peter Colohan	Amrit Mehra
Jan Connery	Peter Meister
Bryant Cramer	John Miller
Bruce Davis	David Miller
Phil DeCola	Jerry Miller
Ivan Deloatch	Jami Montgomery
James Devine	Linda Moodie
Craig Dobson	Anna Palmisano
Cheryl Dybas	Bruce Quirk
Fernando Echevarria	Megan Radtke
Wanda Ferrell	Greg Reams
Gary Foley	Daniel Reifsnyder
Kathy Fontaine	Joan Rolf
Mike Freilich	Paul Sandifer
Lawrence Friedl	William Sonntag
Randy Friedl	Courtney St. John
Yana Gevorgyan	Carrie Stokes
Mark Hainsey	Trigg Talley
David Halpern	Kevin Teichman
Jack Hayes	Alan Tessier
Linda Heath	George Thomas
Alice Hill	Duane Tibbetts
Sheridan Hill	Woody Turner
Leonard Hirsch	Joyce Voyles
John Holdren	Pai-Yei Whung
Molly Jahn	Diane Wickland
Sarah Johnson	Peter Wilczynski
Kerri-Ann Jones	Zdenka Willis
Chris Justice	Greg Withee
Reza Khanbilvardi	Helen Wood
Suzette Kimball	Mike Yates
Deborah Lawrence	Shira Yoffe
Jane Lubchenco	Mark Zettlemyer
Martha Maiden	Uzbekistan
Lisa Matthews	Natalya Shulgina

APN

Yukihiro Imanari

CATHALAC

Emilio Sempris

Emil Cherrington

CEOS

Makoto Kajii

Mary Kicza

Satoko Miura

Osamu Ochiai

Brent Smith

COSPAR

David Halpern

Ralph Kahn

DIVERSITAS

Robert Scholes

Anne Larigauderie

ECMWF

Dominique Marbouty

Manfred Kloeppel

ESA

Stephen Briggs

Mirko Albani

Anna Burzykowska

Simonetta Cheli

Evangelina Oriol-Pibernat

EUMETNET

Steve Noyes

EUMETSAT

Paul Counet

Mike Williams

EuroGeoSurveys

Luca Demicheli

FAO

John Latham

GBIF

Gladys Cotter

Thomas Lahr

GCOS

John Zillman

GOOS

Ralph Rayner

GSDI

Bas Kok

Harlan Onsrud

Douglas Nebert

Jean Parcher

Carmelle Terborgh

GTOS

Antonio Bombelli

IAG

Markus Rothacher

Hans-Peter Plag

Ruth Neilan

Michael Pearlman

Susanna Zerbini

ICSU

Gisbert Glaser

Kathleen Cass

Robert Chen

Deliang Chen

Mustapha Mokrane

Paul Uhlir

IEEE

Tom Wiener

Jay Pearlman

James Barbera

Steven Browdy

Conrad Hickok

Maeve Hickok

Siri-jodha Khalsa

Rick Lawford

Ellsworth Ledrew

Russel Lefevre

Stefano Nativi

Françoise Pearlman

Paul Racette

IHO

John Lowell

IIASA

Steffen Fritz

IISL

Joanne Gabrynowicz

INCOSE

Kenneth Crowder

IOC

Keith Alverson

ISCGM

John Donnelly

ISPRS

Ian Dowman

OGC

George Percivall

Nadine Alameh

Roberta Balstad

Hervé Caumont

Jeanne Foust

John Olesak

Robert Thomas

Christopher Tucker

POGO

Kiyoshi Suyehiro

UNEP

Ashbindu Singh

Norberto Fernandez

UNESCO

Robert Missotten

UNOOSA

David Stevens

WMO

Wenjian Zhang

Barbara Ryan

Brian O'Donnell

ESIP

Carol Meyer

Charles Hutchinson

GEBCO

Christopher Fox

GEO Secretariat

José Achache

Hendrik Baeyens

Natasha Brutsch-Dastur

Douglas Cripe

Jinlong Fan

Veronica Grasso

Koki Iwao

Rob Koopman

Alexia Massacand

Douglas Muchoney

Masami Onoda

Fernando Ramos

Sofia Rodriguez

Giovanni Rum

Imraan Saloojee

Gillian Sauter

Michael Tanner

Chloé Tiberghien

Michael Williams