

GEO Bulletin

A Summary Report of the 12th Plenary Session of the Group on Earth observations (GEO-XII) and GEO 2015 Mexico City Ministerial Summit

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SUMMARY OF THE TWELFTH PLENARY SESSION OF THE GROUP ON EARTH OBSERVATIONS (GEO-XII) AND MEXICO CITY MINISTERIAL SUMMIT: 11-13 NOVEMBER 2015

The Twelfth Plenary Session of the Group on Earth Observations (GEO-XII) convened from 11-12 November 2015 in Mexico City, Mexico, followed by the 2015 Mexico City Ministerial Summit on Friday, 13 November. Approximately 410 delegates attended the Plenary and Ministerial Summit, representing 87 entities, including 41 countries, 37 Participating Organizations, two official Observers and eight guests. Side events, working meetings and meetings of the caucuses were held starting on 9 November, prior to the Plenary and Ministerial Summit. The GEO Executive Committee (ExCom) convened on 10 November.

The principal outcomes of these meetings included adoption of the Mexico City Declaration and approval of the GEO Strategic Plan for 2016-2025. Other important decisions include revised criteria for admitting new Observers and Participating Organizations (POs), the lifting of the temporary moratorium on new Observers and POs, revised rules of procedure, and adoption of a transitional work programme for 2016.

A BRIEF HISTORY OF THE GEO

GEO is a voluntary partnership consisting of Members and POs that are coordinating efforts to build the Global Earth Observation System of Systems (GEOSS). GEO Members are the European Commission (EC) and any UN member state that formally endorses the GEOSS 10-Year Implementation Plan. POs are intergovernmental, international and regional organizations with a mandate in Earth observations (EO) or related activities who have formally endorsed the GEOSS 10-Year Implementation Plan and been approved by the GEO Plenary. Currently, GEO consists of 99 Member countries and the EC and 87 POs.

The annual Plenary is GEO's primary decision-making body, while the ExCom guides GEO between Plenary sessions. The other GEO governance components are the Implementation Boards and working groups of the Plenary, and a Secretariat, based in Geneva, Switzerland.

As a "system of systems," GEOSS seeks to link existing and planned observing systems around the world, and support the development of new systems where gaps currently exist, with a view to providing key data to assist decision makers, planners and emergency managers regarding climate change and eight "Societal Benefit Areas" (SBAs): disaster resilience; public health surveillance; energy and mineral



Participants received GEO pins at the start of the session

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resources management; infrastructure and transportation management; sustainable urban development; water resources management; food security and sustainable agriculture; and biodiversity and ecosystem sustainability. Work in many of these SBAs are guided by "Communities of Practice" (CoPs) voluntarily formed by stakeholders, from providers to the final beneficiaries of EO data and information.

WORLD SUMMIT ON SUSTAINABLE
DEVELOPMENT (WSSD): Held from 26 August to 4
September 2002 in Johannesburg, South Africa, the WSSD highlighted the need for coordinated observations relating to the state of the Earth.

FIRST EARTH OBSERVATION SUMMIT (EOS-I): meeting on 31 July 2003 in Washington, DC, US, high-level representatives of 34 governments adopted a declaration establishing the *ad hoc* intergovernmental Group on Earth Observations (*ad hoc* GEO), co-chaired by the European Commission, Japan, South Africa and the US, to draft a 10-Year Implementation Plan.

SECOND EARTH OBSERVATION SUMMIT (EOS-II): Convened on 24 April 2004 in Tokyo, Japan, this Summit of 40 governments adopted a Framework Document defining the scope and intent of GEOSS.

THIRD EARTH OBSERVATION SUMMIT (EOS-III): This Summit convened on 16 February 2005 in Brussels, Belgium. In a resolution, delegations from almost 60 countries endorsed the 2005-2015 GEOSS 10-Year Implementation Plan and established the intergovernmental GEO to implement it.

FIRST PLENARY SESSION OF GEO (GEO-I): GEO-I was held from 3-4 May 2005 in Geneva, Switzerland. GEO-I agreed on the structure and duties of the ExCom to guide GEO between plenaries. GEO-I also endorsed the proposed User Interface Mechanism.

SECOND PLENARY SESSION OF GEO (GEO-II): Held from 14-15 December 2005 in Geneva, Switzerland, GEO-II adopted the GEO Rules of Procedure and approved the GEO Work Plan for 2006.

THIRD PLENARY SESSION OF GEO (GEO-III): GEO-III convened from 28-29 November 2006 in Bonn, Germany. GEO-III accepted, *inter alia*, the Guidance for Recognition of New GEO POs and Observers, and the Guidelines for Additional Contributions.

FOURTH PLENARY SESSION OF GEO (GEO-IV)/
FIRST GEO MINISTERIAL SUMMIT: GEO-IV was held from 28-29 November 2007, followed by the Ministerial Summit on 30 November, in Cape Town, South Africa. The Ministerial Summit supported the establishment of a process with the objective of reaching consensus on the implementation of Data Sharing Principles for GEOSS. The Summit also committed to exploring ways and means for the sustained operation of the shared architectural GEOSS components and related information infrastructure, and to work together to improve the interoperability of and access to observations and associated prediction and information systems.

FIFTH PLENARY SESSION OF GEO (GEO-V):

GEO-V was held from 19-20 November 2008 in Bucharest, Romania. GEO-V created a Data Sharing Principles Task Force and a Monitoring and Evaluation Working Group, reviewed work on Strategic Targets for GEOSS Implementation by 2015, and asked the ExCom to provide options for the Committee's expansion.

SIXTH PLENARY SESSION OF GEO (GEO-VI):

GEO-VI was held from 17-18 November 2009 in Washington, DC, US, and discussed implementation of the Data Sharing Principles and recommendations for long-term operations of common infrastructure. It also approved a revised set of 14 GEOSS Strategic Targets.

SEVENTH PLENARY SESSION OF GEO (GEO-VII)/
SECOND GEO MINISTERIAL SUMMIT: GEO-VII was held from 3-4 November 2010, and the Ministerial Summit on 5 November, in Beijing, China. GEO-VII, *inter alia*, reviewed a mid-term evaluation of GEOSS implementation and accepted a proposal for a Global Forest Observation Initiative (GFOI) relating to the GEO Forest Carbon Tracking Task. The Ministerial Summit Declaration endorsed the refined GEO Targets and committed to: maximizing the number of documented datasets made available on the basis of full and open access; creating the GEOSS Data Collection of Open Resources for Everyone (GEOSS Data-CORE); and developing flexible national and international policy frameworks to ensure a more open data environment.

EIGHTH PLENARY SESSION OF GEO (GEO-VIII): GEO-VIII was held from 16-17 November 2011 in Istanbul, Turkey. GEO-VIII, examined, *inter alia*, reports on GEOSS common infrastructure, data sharing, Data-CORE, GEO Biodiversity Observation Network (GEO BON), the African Water Cycle Initiative, the Black Sea Environment Project, Global Drought Monitor, GEO Global Agricultural Monitoring Initiative (GEOGLAM), and an implementation plan for GFOI.

UN CONFERENCE ON SUSTAINABLE

DEVELOPMENT (UNCSD or Rio+20): Convened in Rio de
Janeiro, Brazil from 20-22 June 2012, Rio+20 recognized: the
importance of space-technology-based data, *in situ* monitoring,
and reliable geospatial information for sustainable development
policy making, programming and project operations; and
efforts towards developing global environmental observing
systems, including GEOSS.

NINTH PLENARY SESSION OF GEO (GEO-IX): GEO-IX was held from 22-23 November 2012 in Foz do Iguaçu, Brazil, and endorsed transforming the GFOI Task Force into a GFOI Steering Committee, began discussions about the future of GEOSS post-2015, and asked the GEO Secretariat to draft a compelling case for ministers regarding GEOSS achievements and the need for continuing GEO and the GEOSS into the future.

TENTH PLENARY SESSION OF GEO (GEO-X)/
THIRD GEO MINISTERIAL SUMMIT: GEO-X convened from 15-16 January 2014 in Geneva, Switzerland, and the Third Ministerial Summit met on 17 January. The principal outcomes of these meetings included a renewed mandate for GEO through 2025 and the adoption of the Geneva Declaration, containing high-level recommendations to guide the development of a detailed 2015-2025 Implementation Plan for GEOSS.

ELEVENTH PLENARY SESSION OF GEO (GEO-XI): GEO-XI was held from 13-14 November 2014 in Geneva, Switzerland. It discussed the 2016-2025 Implementation Plan, supported AfriGEOSS implementation, supported Recommendations on Legal Interoperability Guidelines, extended the mandate of a task force developing the Implementation Guidelines for GEOSS Data Management Principles, and endorsed a moratorium on new PO applications until after GEO-XII.



UN SUSTAINABLE DEVELOPMENT SUMMIT:

The Summit adopting the 2030 Agenda for Sustainable Development took place from 25-27 September 2015 at UN Headquarters in New York. The final package calls for promoting "transparent and accountable scaling-up of appropriate public-private cooperation to exploit the contribution to be made by a wide range of data, including EO and geospatial information, while ensuring national ownership in supporting and tracking progress."

SECOND EYE ON EARTH SUMMIT (EYE ON **EARTH 2015):** Eye on Earth 2015 convened from 6-8 October 2015 in Abu Dhabi, United Arab Emirates. The Outcome Document presents action-oriented statements supporting informed decision making for sustainable development on: data needs of policymakers; capacity building for the sustainable development goals (SDGs); the data revolution; technology support; interregional knowledge sharing; Arab region data needs; small island developing States (SIDS) data issues; polar and cold regions; building knowledge for healthy lives; and the Rio Principle 10 Action Plan. It also announces that the Eye on Earth Alliance will formalize the Eye on Earth Governance Framework and institutional arrangements by the end of 2015 and that the Alliance's five existing members, including GEO, will enlarge the Alliance strategically by inviting other organizations to join.

SUMMARY OF THE GEO-XII PLENARY

OPENING SESSION

Addressing the opening session on Wednesday morning, Rolando Ocampo, Vice-President, National Institute of



Statistics and Geography (INEGI) and GEO Principal for Mexico, welcomed participants to Mexico City.

GEO Co-Chair Jianlin Cao (China) said with the adoption of the Mexico City Ministerial Declaration, GEO will open a new chapter. He noted progress in establishing national and Rolando Ocampo, Vice-President, INEGI and GEO Principal for Mexico within the Asia-Pacific regional GEO infrastructures

region, as well as recent steps taken by China.

As GEO enters its second decade, GEO Co-Chair Kathryn Sullivan (US) urged her colleagues to "act young," be flexible, and focus on action and outcomes that deliver benefits to the globe's societies.

GEO Co-Chair Philemon Mjwara (South Africa) said GEO needs to build on its successes while taking into account changing landscapes, such as the adoption of the SDGs, changes in technology, and a world that requires solutions that cut across the SBAs.

GEO Co-Chair and Plenary Session Chair Rudolf Strohmeier (EC) said the proposed 2016-2025 GEO Strategic Plan offers GEO an opportunity to provide the comprehensive and integrated observations, data and information about the Earth's changing conditions that decision-makers and citizens around the world require. He said GEO's greatest priority should now be to engage with stakeholders, particularly those in developing countries.



GEO Secretariat Director Barbara Ryan noted milestones since GEO-XI, such as the new partnership with the UN Statistical Division (UNSD), GEO membership in the Global Partnership for Sustainable Development Data, and the mention of EO and geospatial information in the 2030 Sustainable Development Agenda. She reminded delegates that, "countries have borders, Earth observations don't."

The Plenary then approved the draft agenda (Plenary Document 1, Rev. 2) with a minor amendment to consider the review of applications to admit new Observers and POs after the agenda item on revised criteria for Observers and POs and a decision on lifting the temporary moratorium on admitting new POs.

The Plenary acknowledged Ecuador, Kenya, Somalia, Viet Nam and Zimbabwe as new Members (Plenary Document 2). In statements to the Plenary, Ecuador said they look forward to coordinating with AmeriGEOSS, and Zimbabwe expressed preparedness to contribute skills and expertise to GEO.

The opening session concluded with the adoption of the GEO-XI report (Plenary Document 4).

MEXICO CITY DRAFT DECLARATION

On Wednesday, Chair Strohmeier presented the draft Mexico City Declaration (Ministerial Document 3, Rev. 1) to the Plenary. He noted that Mexico had requested, and the ExCom had agreed to recommend, the inclusion of a reference to the adoption of the International Open Data Charter in the draft Mexico City Declaration and a call for GEO to explore coordination with the Charter.

MEXICO CITY MINISTERIAL SUMMIT OVERVIEW

On Wednesday, the Plenary approved the Mexico City Ministerial Summit Program (Ministerial Document 1, Rev. 1) and the Mexico City Ministerial Summit Draft Agenda (Ministerial Document 2, Rev. 1).

GEOSS IMPLEMENTATION 2005-2015

Chair Strohmeier introduced this agenda item on Wednesday morning.

SUMMARY ASSESSMENT OF PROGRESS -TARGETS AND TASKS: Chair Strohmeier invited presentations from the Infrastructure Implementation Board (IIB) related to the Summary Assessment of Progress (Plenary Document 5). Ivan B. DeLoatch, Co-Chair, IIB, on behalf of IIB, Institutions and Development Implementation Board (IDIB) and Social Benefits Implementation Board (SBIB), presented on the Final Assessment of Progress against the GEOSS 2015 Strategic Targets, explaining shared assessment results, lessons learned and recommendations, and a summary of successes and challenges.



Responding to a query from Switzerland about the real potential of GEO to overcome structural problems, DeLoatch noted that a paradigm shift is needed and that the new work programme provides an opportunity to look at how activities are organized and supported by resources.

REPORT OF THE SIXTH AND SUMMATIVE **EVALUATION OF GEOSS IMPLEMENTATION: John**

Adamec, Co-Chair, Monitoring and Evaluation Working

Group, presented the findings and recommendations of the Sixth and Summative Evaluation of GEOSS Implementation (Plenary Document 6), which included: there is great value in GEO's convening power; GEO's strategy should include measurable outcomes; internal and external communication should be improved; in situ observations require more focus; and there is



need for more integration of monitoring and evaluation (M&E) practices into the GEO tasks.

China recommended the findings of the evaluation be the basis for the next strategic plan and be considered at different level levels, including the Programme Board.

LESSONS LEARNED FROM GEO'S FIRST DECADE:

Monitoring and Evaluation: Adamec presented lessons learned in 2005-2015 (Plenary Document 7), emphasizing the development of the M&E framework, the completion of six evaluations and successful response to the evaluation reports. He concluded that M&E remains a vitally important part of GEO and recommended: carrying out two evaluations for 2016-2025, at mid- and end-term; embedding M&E in the GEO Secretariat and Boards; building M&E into tasks; setting expectations for M&E to scope and maturity of tasks; and defining measurable outcomes.

Implementation Boards Considerations: Max Craglia, Co-Chair, IIB, presented 'Implementation Boards Considerations' (Plenary Document 8), underscoring that GEO works because it is a voluntary initiative, supported by good will and shared goals.

The Value of Open Data Sharing: Simon Hodson, Executive Director, Committee on Data for Science and

Technology (CODATA), presented 'The Value of Open Data Sharing' (Plenary Document 9), and requested community participation to provide case studies to support GEO's mission.

Noting the useful nature of Document 9, the World Meteorological Organization (WMO) said it was important to publicize the finding that the indirect economic benefits of



open data sharing outweigh those of cost recovery.

Data Management Principles Implementation

Guidelines: David Halpern, Co-Chair, Data Management Principles Task Force (DMP-TF), presented 'Data Management Principles Implementation Guidelines' (Plenary Document 10), outlining the timeline for revisions towards presenting the final version for adoption at GEO-XIII.



Participants during the session

The International Council for Science World Data System (ICSU-WDS) congratulated the DMP-TF, underscoring that guidelines are critical to transform principles into implementation.

China observed the importance of greater impact for end users and of value-added provider services.

PRESENTATION BY THE IMPLEMENTATION PLAN WORKING GROUP (IPWG) OF THE GEO STRATEGIC PLAN 2016-2025: IMPLEMENTING GEOSS AND REFERENCE DOCUMENT

On Wednesday morning, Jörn Hoffmann, Co-Chair, IPWG, presented the 'GEO Strategic Plan 2016-2025:

Implementing GEOSS' (Ministerial Document 4) and corresponding Reference Document (Plenary Document 11, Rev.1). He reviewed lessons learned, identifying what worked well, and areas where there are needs for change, noting the Programme Board is an effort to address a need for change in management structures, and linkages between governance and implementation.



Hoffmann said the Strategic Plan has two parts, the Strategy and the Implementation Plan. He said the Strategy answers why a GEO is needed, sets the strategic objectives of "advocate, engage, deliver" to guide GEO's work over the next decade, emphasizes climate change and its impacts as a cross-cutting area, and strengthens the SBAs to make them more focused on the needs of society. He noted the Implementation Plan outlines how GEO will implement its vision and mission, including evolving the GEOSS Data Sharing and Management Principles, and focusing on engagement.

He identified three levels of activities, with varying levels of commitment, to implement priority elements of GEO activities and to fulfill GEO objectives. Regarding moving forward, he suggested exploring, inter alia, mechanisms to achieve greater financial stability, engaging the private sector with GEOSS, and a legal status that would enable GEO to participate in other international bodies.

All interventions from the floor supported the Strategic Plan and praised the work of the IPWG. Emphasizing the role of GEO in climate change, the EC called for a coordinating mechanism within GEO on climate change and recommended strengthening the engagement of developing countries.

Japan stressed the importance of effectively implementing the Plan. China stated its willingness to support Plan implementation, including at the regional level.



France welcomed the recognition of the ownership of data providers and role of the POs in the Plan and stressed the importance of the "delivery" function of GEO.

Germany called for milestones to be set regarding sustainable financing and engagement of the private sector. Switzerland noted the issue of the GEO legal status as one needing more work and stated its support to the process to explore and develop options for it.

The US, with the Committee on Earth Observation Satellites (CEOS), endorsed the emphasis on the convening power of GEO and, with Italy, supported the flexibility to respond to changes. She emphasized the need for GEO to understand user needs.

South Africa, with Zimbabwe, urged the GEO community to strengthen efforts on climate change and regional coordination and cooperation.

WMO welcomed the intent to strengthen relationships and complementarity. WMO, the European Centre for Medium-Range Weather Forecasts (ECMWF) and the Committee on Space Research (COSPAR)



expressed concern about the Strategic Plan not clearly highlighting the importance of weather and climate change as foundational to societal needs.

Sweden queried how GEO can attract more participation by Ministers.

The European Space Agency (ESA) stressed the role of the private sector in GEO. He noted that climate change cuts across all the SBAs and this is an evidence of its importance.

The Federation of Earth Science Information Partners (ESIP) hoped for flexibility in the evolving framework to enable better partnerships to achieve GEO's aims.

Croatia stressed the need to avoid duplication by creating synergies between key players and roles, and called for making WMO's technical data management and sharing instruments more visible through the WMO Integrated Global Observing System (WIGOS).

Co-Chair Sullivan welcomed the support for the Plan, and, with Chair Strohmeier, suggested the text might be modified

before publishing to make it clear that weather and climate are not merely background considerations.

Providing feedback on comments, Hoffmann stated that, *inter alia*: the absence of a specific climate SBA might be considered a testament to its overarching importance and relevance to all SBAs; and flagship initiatives involving large investments would likely encourage greater ministerial engagement.



On Wednesday afternoon Hoffman presented changes made by IPWG to the text of the Strategic Plan to ensure the importance of climate change is clearly emphasized.

Following some discussion on the proposed modifications, Chair Strohmeier concluded that concerns of whether climate change was adequately addressed within the text had been resolved by the IPWG's modifications, and recommended closing the text as presented.

Plenary approved the Strategic Plan with the modifications suggested by IPWG, and approved the Reference Document.



TRANSITION 2015 TO 2016 AND APPOINTMENT OF THE PROGRAMME BOARD

On Wednesday, Giovanni Rum, GEO Secretariat, presented the Transition Plan (Plenary Document 12, Rev.3), noting the



need to take care of governance transitions, individual engagement and the implementation of GEO activities.

Douglas Cripe, GEO Secretariat, presented on the Appointment of the Programme Board (Plenary Document 13, Rev1), noting the nomination of 15 GEO Members and 9 POs. Cripe said the ExCom recommends the acceptance

of nominees and extending the nomination period to 30 November 2015. Germany suggested including a member with management expertise and Italy requested clarification on the suggestion to include private sector expertise in the Programme Board.

Plenary approved the nominees and extended the nomination deadline until 30 November 2015.

REVISED CRITERIA FOR OBSERVERS, PARTICIPATING ORGANIZATIONS AND MORATORIUM

On Wednesday, GEO Secretariat Director Ryan presented changes made to the 'Revised Criteria for Observers, Participating Organizations and Moratorium' (Plenary Document 14, Rev. 1) on streamlining the review and approval process and criteria of POs and Observers, and the engagement of POs.

Plenary agreed to: the proposed revised criteria for both POs and Observers to include "not for profit associations of commercial entities"; a removal of the temporary moratorium placed by GEO-XI on new PO applications; a streamlining measure allowing the ExCom the authority to review and approve the applications for POs and Observers; and, authorization for the ExCom to reach out to POs directly, in case of waning participation.

Delegates considered the evaluation of new Observers and POs made by the ExCom and its recommendations (Plenary Document 3, Rev.3).

Canada, referring to the recommendation to accept Future Earth as a PO, asked for clarification on the distinction between organizations and programmes and suggested the ExCom review this issue. ESIP suggested introducing a default



sunset clause for the membership of programmes. Chair Strohmeier noted the comments will be considered by the ExCom.

The Plenary accepted the recommendations contained in the document, with five new POs joining: the World Bank; the Permanent Secretariat of the International Commission on the Protection of the Black Sea Against Pollution (BSC PS); Future Earth; the International Research Centre on El Niño (CIIFEN); and the Research Data Alliance (RDA).

GEO ENGAGEMENT WITH STAKEHOLDERS

On Wednesday, Co-Chair Sullivan presented an update on the strategy for stakeholder engagement, highlighting partnerships with users, the commercial sector, UN organizations, NGOs, private foundations and development banks. Recognizing the complexity of engaging with the commercial sector, she suggested a new affiliation category of "Corporate Partner" as a potential approach, based on

mutual benefits, formal partnerships backed by commitments commensurate to size and type of company, and equal opportunities open to all interested partners. She stressed that these ideas are still at an early stage of development.

CANADA

David Grimes, Canada

Canada and Italy requested more information to be

circulated to delegates. France warned against possible conflicts of interest arising from contributions from the commercial sector. Italy suggested a process for geographical groups to prepare positions on this issue.

ESA said partnerships with the private sector are already happening, but noted that exchange of funds requires careful consideration.

Sullivan welcomed the comments and encouraged delegates to exchange experiences and information on successful partnership models.

Ede Jorge Ijjasz-Vasquez, Senior Director for Social, Urban, Rural and Resilience Global Practice, World Bank,



Global Practice, World Bank

presented on 'Global Development Challenges, Geospatial Information and the World Bank.' Noting the Bank is joining GEO as a PO, he emphasized the role of geospatial information for addressing global development challenges such as urbanization, food production, climate change and land management.

Australia highlighted the "major strategic opportunity" before GEO to integrate EO into routine national reporting. Italy, and the International Society for Photogrammetry and Remote Sensing (ISPRS), also supported World Bank collaboration.

Japan observed the convening power of GEO to strengthen alliances between EO communities.

CEOS reported that its members unanimously agree on the need to ensure data is harnessed to support SDGs.

EuroGeoSurveys reported a recent collaboration agreement signed with the Association of Geological and Mining Surveys of Ibero-America and noted a potential trilateral agreement with the World Bank in 2016.

Mexico underscored its commitment to interlinkages with the SDGs and encouraged finding as many sources of integration as possible.

GEO FEATURED INITIATIVES

On Thursday morning, Chair Strohmeier called for presentations by the four featured GEO initiatives.

AmeriGEOSS: Diana Quimbay, Institute of Hydrology, Meteorology and Environmental Studies (IDEAM), Colombia, described AmeriGEOSS's origins and early activities. Eduardo de la Torre, INEGI, Mexico, outlined AmeriGEOSS priority areas: agriculture, disaster risk reduction, water, and biodiversity and ecosystem monitoring. Nancy Searby, NASA, US, said AmeriGEOSS decided on the focus areas because they expect early successes in them. She asked all Plenary participants to consider how their own work might contribute to the regional initiative.

Global Mercury Observation System (GMOS): Nicola Pirrone, Institute of Atmospheric Pollution Research (CNR-



IIA), Italy, described the foundational activities of GMOS over the last five years, the science-policy issues GMOS seeks to address, its components, modelling efforts, and datasets generated. He also discussed GMOS engagement with the UN Environment Programme (UNEP), the Minamata

Convention, the UN Economic Commission for Europe (UNECE), and Global Environment Facility (GEF), and highlighted future activities, including a proposal for a GEO Flagship on Persistent Chemical Pollutants.

GEO Global Agricultural Monitoring Initiative (GEOGLAM): Alyssa Whitcraft, GEOGLAM Secretariat,



Alyssa Whitcraft, GEOGLAM Secretariat described crop monitoring work for the Agricultural Market Information System (AMIS) as an example of what GEOGLAM does, and outlined work on EO data coordination. She also reviewed recommendations from the External Advisory Committee, including *inter alia*: coordinating with CEOS for meeting EO requirements as a top priority; expanding programme emphasis to food security; supporting

implementation of the SDGs; and enhancing South-South cooperation.

GFOI: Douglas Muchoney, US Geological Survey, presented on the GFOI, reporting, *inter alia*: the GFOI office is relocating to the UN Food and Agriculture Organization (FAO) in Rome, Italy; version two of the Methods and Guidance Document (MGD) will be released in June 2016; and an online MGD tool will be available in English, French and Spanish from April 2016.



TRANSITIONAL WORK PROGRAMME 2016

2016 WORK PROGRAMME: On Wednesday, Giovanni Rum, GEO Secretariat, introduced the 2016 Work Programme (Plenary Document 15) as the "tool to achieve GEO's strategic objectives." He noted that the fourth version will be released in mid-December. He highlighted key features of the Programme to include dedicated and focused activities in areas such as Communications and Engagement and Implementation Mechanisms, and noted transitional activities that will start in 2016, such as new governance structures and activating the M&E framework.

He said the proposed role of the Secretariat, as articulated in the Strategic Plan, is to coordinate the different teams in charge of the Foundational Tasks and provide a clear point of reference for other GEO activities.

Regarding resources, he highlighted the identified need to increase the GEO Trust Fund to approximately CHF 4.6 million

in 2016.



China stressed that the Work Programme should include a regional focus, while Canada supported the inclusion of ocean activities, and UNEP said the Programme should address the SDGs. Switzerland suggested holding a "managerial" meeting focused on organizing the transition and implementing

the Strategy.

The Plenary approved the Work Programme.

PROPOSED 2016 BUDGET: On Thursday, John Matuszak, US, on behalf of the Budget Working Group, introduced the Proposed 2016 Budget (Plenary Document 16, Rev. 1), noting GEO's clean 2014 Financial Statements and Report of the External Auditor (Plenary Document 19). He reported that the projected spending for 2015 is significantly less than the approved budget of CHF 4,259,000 (minus CHF 2,000 in-kind expenditure), underscoring that records show GEO has a history of fiscal responsibility and working within its means. He explained that the 2016 proposed budget of CHF 4,642,000 (after in-kind expenditures) is based on the Strategic Plan and its Foundational Tasks, underscoring that the Budget Committee recommends its approval.

The Plenary approved the budget as proposed.

UPDATES TO RULES OF PROCEDURE

On Thursday, GEO Secretariat Director Ryan presented the changes to the Rules of Procedures (Plenary Document 17, Rev. 2) noting they reflect alignment with the new Strategic Plan, particularly on governance. She observed that the composition of the ExCom would now include three additional seats, one each for Africa, Commonwealth of Independent States (CIS) and Europe, and that three POs, who are members of the Programme Board, will be invited to participate as observers in ExCom discussions. The rules now would only reserve one GEO Co-Chairmanship each for developed countries and developing countries, instead of the two chairmanships reserved for each under current rules. She further explained that Implementation Boards, Working Groups and task forces would be discontinued, except for the ExCom's Budget Working Group.

Croatia queried the timing for nominating POs as observers in the ExCom. China questioned the proposed changes in representation by developing countries and developed countries in the ExCom, and suggested reverting back to the "2+2" GEO Co-Chair formula. CEOS welcomed the proposed changes

allowing POs to contribute to GEO's leadership. Norway suggested including ethical guidelines in the Rules of Procedures.

Chair Strohmeier suggested, and Plenary agreed, to adopt the Rules of Procedure with provisos that GEO-XIII will consider the issues raised by China and Norway.



Ivan Čačić, Croatia

FORMAL STATEMENTS BY MEMBERS AND PARTICIPATING ORGANIZATIONS

On Thursday, Members and POs offered formal statements about key events and activities related to GEOSS implementation.

Australia pledged AUD 75,000 to the GEO Trust Fund in 2016. China said the GEO Strategic Plan will be taken into



consideration, particularly with regards to improving EO capability, when China develops its next five-year plan Costa Rica, Australia, Croatia and Slovenia supported the Strategic Plan, and Croatia supported the Reference Document.

Canada and Colombia supported the GEOGLAM initiative. Chile, Colombia

and Mexico welcomed the AmeriGEOSS initiative as a step



towards stronger regional involvement. Colombia supported the BON in a Box, and Germany said GEO BON is very important and deserves more visibility.

The EC supported the implementation of GEOSS, noting that Horizon 2020 will launch an integrated observation system in the Arctic in 2016.

Finland expressed interest in assisting GEO with snow information.

Guinea said more attention should be given to health and polar issues, and capacity building in developing and least developed countries.

Israel suggested GEO include the essential role of soil more explicitly in its key activities.

The Republic of Korea underscored the importance of data sharing to boost job creation and economic growth, observing the commercial value of data to support small- and mediumsize enterprise development.

The Netherlands underscored the importance of publicprivate partnerships to create innovative cost-effective solutions to societal challenges.

The Russian Federation indicated several existing and future national satellite observation initiatives, including Indian Ocean observations to be launched by the end of 2015.

South Africa stated that strengthening AfriGEOSS would facilitate the participation of African member states, and



Humbulani Mudau, South Africa

suggested GEO focus on, *inter alia*, user engagement and clear articulation of the value of GEO.

Spain pointed to the need to develop national and regional GEO groups to improve coordination.

Sweden highlighted a fully developed GEOSS as essential in responding to climate change, and called for

reinforcing political leadership and aligning GEO with policy processes.

US described capacity building workshops in Africa and Mexico and highlighted, *inter alia*, a project to develop arctic mapping by mid-2017.

Zimbabwe announced it will host an AfriGEOSS symposium in April 2016.

Denmark noted their interest in benefits that EO activities could bring to data sharing and collection in the Arctic and the North Atlantic regions.

Mexico expressed particular support for the GEO communication strategy.

Romania highlighted EO capacity building activities for European students and the hosting of major events on the use of EO data.

COSPAR highlighted capacity building activities in Indonesia, Russia and Viet Nam.

ECMWF noted its contribution to GEO in different areas, including research, global analysis and environmental information services.

ESA welcomed the recognition of the POs' contribution as reflected in their participation in the new GEO governance.

ESIP stated its readiness to contribute to the new GEO Implementation Mechanisms.

The Global Climate Observing System highlighted the release of its report 'Status of the Global Observing System for Climate' for endorsement at the Paris Climate Change Conference.

The Global Spatial Data Infrastructure Association endorsed the data sharing principles.

The International Centre for Integrated Mountain Development announced the Himalaya GEO Initiative to foster regional cooperation, capacity development and sharing opportunities.

The Institute of Electrical and Electronics Engineers stressed the need for a focus on oceans.

The International Council on Systems Engineering noted their involvement in GEO through modeling portal performance features and GEOSS software development.

The International Society for Photogrammetry and Remote Sensing reported on preparations to release an international

declaration for interdisciplinary cooperation on imagery data to support the SDGs.

The Open Geospatial Consortium (OGC) welcomed greater involvement of the commercial sector.

Partnership for Observation of the Global Oceans (POGO) discussed the Blue Planet Task, noting an aim to work more closely with GEO BON.



The Regional Centre for Mapping of Resources for Development reaffirmed its commitment to GEO values towards building capacity in Africa.

UNEP spoke on UNEP Live's role in the GEO architecture to disseminate information to the global community.

United Nations Office for Outer Space Affairs noted that the Global Partnership on Earth Observations for Disaster Risk Reduction (DRR) would contribute to meeting the goals of the Sendai Framework on DRR.

The World Climate Research Programme described the Polar Challenge initiative and welcomed further financial contributions.

ICSU-WDS noted a need for greater information sharing across domains, approaches and temporal scales.

The Asia-Pacific Space Cooperation Organization (APSCO) underscored its Data Sharing Service Platform as greatly enhancing the EO capabilities of its member states.

The Global Biodiversity Information Facility (GBIF) praised GEO biodiversity initiatives and encouraged community members to use GBIF information for publishing data.







2015 REPORT OF THE EXECUTIVE COMMITTEE

On Thursday, GEO Co-Chair Mjwara presented the ExCom report for 2015 (Plenary Document 18), highlighting work on: guidance to the Strategic Plan and the IPWG; response to GEOSS evaluations and incorporation of the evaluation recommendation into the Strategic Plan; the GEO engagement strategy; the criteria for selecting and evaluating PO participation and contribution to GEO; the transition of GFOI to the FAO; the 2016 transitional arrangements; and operations of the GEO Secretariat.

The Plenary approved the report.

FINANCIAL REPORTS

On Thursday, the Plenary agreed to approve the 2014 Financial Statements and Report of the External Auditor (Plenary Document 19). Referencing the Interim Report on Income and Expenditure (Plenary Document 20) provided to the Plenary for information purposes, GEO Secretariat Director Ryan reported that the contribution by Switzerland has now been received.

PRESENTATION OF NOMINEES FOR THE **EXECUTIVE COMMITTEE**

On Thursday, GEO Secretariat Director Ryan presented, and the Plenary approved, the composition of the ExCom 2016 as follows: South Africa (Co-Chair), Egypt and Senegal from Africa; US (Co-Chair), Colombia and Mexico from the Americas; China (Co-Chair), Australia, Japan and Republic of Korea from Asia/Oceania; Armenia and Russian Federation from CIS; and the EC (Co-Chair), Finland, France and Germany from Europe.

GEO-XIII ANNOUNCEMENT

On Thursday afternoon the Plenary accepted the Russian Federation's invitation to host GEO-XIII in St. Petersburg from 9-10 November 2016.

REVIEW OF SESSION OUTCOMES

GEO Secretariat Director Ryan presented a summary of the key action points from the meeting. These session outcomes were confirmed and accepted by GEO-XII.

CLOSING REMARKS

GEO Secretariat Director Ryan thanked Members and POs for joining the side events scheduled during the two days before the Plenary, calling them "a clear example of the convening power of GEO," and a highlight of the week.

Calling GEO-XII a success, Co-Chair Cao said GEO has produced "fruitful outcomes in data sharing and application in SBAs" in order to achieve goals for the next stage of the GEO construction.



Co-Chair Mjwara thanked the GEO community for inputs into the IPWG process, noting and thanking the IPWG Co-Chairs for their significant work. He further thanked the GEO community for participating in a variety of GEO governance structures.

Saying the tangible results from the Plenary provide a strong

foundation, Co-Chair Sullivan expressed confidence that the GEO community will succeed and deliver on the grand opportunities and great challenges ahead.

Chair Strohmeier thanked participants for their excellent spirit and positive contributions, saying GEO can move forward with confidence into the decade ahead. He gaveled GEO-XII to a close at 3:48 p.m.



GEO Co-Chair and Plenary Session Chair Rudolf Strohmeier (EC)

SUMMARY OF THE GEO MEXICO CITY MINISTERIAL SUMMIT

OPENING AND WELCOME

On Friday morning 13 November, Eduardo Sojo, President, INEGI, opened the Ministerial Summit and welcomed

delegates, noting that the Summit will decide on the objectives and actions for GEO for the next years.

A short video was shown, presenting the rationale of GEO and its potential to contribute to the global development agenda.

María Eugenia Casar, Executive Director, Mexican Agency for International **Development Cooperation**



(AMEXCID), welcomed ministers, dignitaries and all participants on behalf of the Ministry of Foreign Affairs, affirming that Mexico shares GEO's objectives and underscoring the critical role of scientific, coordinated information to support good decisions and evaluate public policies. She highlighted GEO-related Mexican initiatives such as the launch of the open data platform in Mexico as a



reference point for the GEO community. She emphasized the need to overcome GEO's challenges to respond to the expectations for the global community to address development challenges.

Summit Co-Chair Jianlin Cao, Vice Minister of Science and Technology, China, stated that GEO has become the strongest advocate on EO and has extensive support around



the world. Noting that no country can address environmental challenges such as depletion of natural resources and frequent natural disasters alone, he stressed the role of GEO as a platform for cooperation and for mobilization of action through the new Strategic Plan. He reaffirmed China's support to further strengthening the already solid foundation for GEO regional cooperation in Asia-Pacific in the coming years.

Summit Co-Chair Carlos Moedas, European Commissioner for Research and Innovation, noted the use of Open Street

Map, an open online resource developed by a student using open datasets, as an example of how the world is entering an era of open data that is empowering and even lifesaving. He said the world will have to make many difficult decisions over the next decade, and work together to solve global problems such as climate change, suggesting EO will increasingly be called upon to assist in response to disasters, to monitor unfolding events,



Summit Co-Chair Carlos Moedas, European Commissioner for Research and Innovation

and to measure progress toward achieving the SDGs. He urged the effective implementation of the GEO Strategic Plan and engagement with stakeholders.

Observing that GEO had succeeded in bringing together diverse groups from across the world to work toward a



common agenda, Summit Co-Chair Naledi Pandor, Minister, Science and Technology, South Africa, stressed that the task facing the GEO community to ensure that the GEO Strategic Plan 2016-2025 is both respected and acted upon, stating "we must stand ready to be judged by how we implement the Strategic Plan, and nothing can excuse us from this responsibility." She underscored the importance

of GEO providing the information and tools needed to measure achievement of the SDGs. She warned against "taking science for granted," urging adequate funding for national science and technology programmes, and for international cooperation as exemplified by GEO. She pledged South Africa's "wholehearted commitment" to GEO and to AfriGEOSS.



Summit Co-chair Sally Jewell, Secretary of the Interior, US

Summit Co-chair Sally Jewell, Secretary of the Interior, US, stressed the importance of GEO to the US, and thanked it for all its work to date and for the work that it is committing to over the next decade. She said GEO has championed open data and can take much of the credit for making "open data" a recognized term across the globe. She complimented GEO for "showing us all how to cooperate" across

national borders and demonstrating that science and open data need to be at the heart of every policy decision. She stressed the importance of EO for understanding land and water resources, wildlife movements and climate change. She provided several examples of US cooperation on EO, including its role in AmeriGEOSS, the GEO Water Sustainability Initiative (GEOGLoWS), the US-EU Copernicus data sharing agreement, and the new agreement with Mexico for a direct data download from Landsat 8.

INTRODUCTION

Summit Co-Chair Jewell chaired this session. She announced POGO's video, which shows the vitality of oceans to life on



Earth and reminds viewers of the need for robust EOs, as the first place winner of the video contest.

Rolando Ocampo, Vice-President, INEGI, presented on the vision and principles of GEO, noting objectives and strengths of GEO, including: ensuring data is available and shared; national, regional and global coordination; capacity building; a common infrastructure on policies, and creating standards and quality information.

Within this context, he explained the system of systems in Mexico, coordinated by INEGI, that contribute to GEOSS, saying INEGI coordinates this system and also produces the national statistical and geographical information. Describing the Caribbean Regional Project, aimed to strengthen the Caribbean geospatial infrastructure, Ocampo said it focuses on developing diagnostics, capacity building, and infrastructure.

Danielle Lacasse, IPWG
Co-Chair, presented GEO's Strategic
Plan 2016-2025 to Ministers for
their endorsement, underscoring
GEO as an integral part of the
post-2015 global development
agenda, informing and supporting
decision making across the Sendai
Framework for Disaster Risk
Reduction 2015-2030, SDGs and the
Paris Climate Change Conference
processes. She described tools to
support decision making through the



Danielle Lacasse, IPWG Co-Chair

eight SBAs, including implementation and funding mechanisms.

Jewell stated that the tools presented in the Strategic Plan would contribute to reducing inequality and drive economic opportunity, "setting us on course for a brighter future."



MEXICO CITY DECLARATION APPROVAL

Summit Co-Chair Pandor chaired this session. She congratulated GMOS as the second place video contest winner, and presented a video detailing the work of GMOS in developing the first coordinated global observation system for mercury.

Noting that the EO community would not be able to build GEOSS without support and commitment of the GEO community, Pandor proceeded to read the text of the Mexico City Declaration, underscoring that its endorsement would affirm commitment to achieving GEOSS as well as the full implementation of the post-2015 Sustainable Development Agenda.

Several Members expressed their support for and endorsement of the Mexico City Declaration and the Strategic Plan, and affirmed their commitment to supporting GEO over the next 10-year period and beyond. Noting the level of support, Summit Co-Chair Pandor announced the Declaration as adopted and the Plan as approved.

The EC, emphasizing that collective action is more than the sum of individual actions, especially for countries with

less EO capacity, called for all GEO members to reaffirm their commitments to GEO.

Japan said GEO is moving in the same direction as Japan in finding EO-based solutions to major environmental challenges.

US welcomed opportunities from technological evolution to provide new tools for sustainable management of natural resources and economic development that improves people's lives.

China reaffirmed support to promoting EO and implementing

the Strategic Plan in Asia and the Pacific.

Belgium highlighted the PROBA V satellite to map land cover and vegetation growth and said its follow up will go hand in hand with the extension of GEO.

Norway welcomed the new GEO structure as defined by the Strategic Plan and called for GEO to strengthen partnerships with the





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FINAL TEXT OF THE MEXICO CITY DECLARATION:

The Declaration affirms that GEO and its EO and information will support the implementation of, *inter alia*, the SDGs, the Sendai Framework for Disaster Risk Reduction 2015-2030, the UN System of Environmental and Economic Accounts, and the UN Framework Convention on Climate Change.

The Declaration also, inter alia:

- endorses the GEO Strategic Plan 2016-2025: Implementing GEOSS, and resolves for Members and POs to work together with an increasing number of stakeholders to enable progress to GEO's vision;
- calls on GEO to strengthen its focus on users and stakeholders, and in particular to develop approaches to effectively engage with UN institutions, multilateral environmental agreements, multilateral development banks, additional POs and the private sector;

- calls on GEO to launch a GEO initiative to leverage EO to support the implementation, monitoring and evaluation of the SDGs;
- calls on GEO to convene a stakeholder-driven process to contribute to sustainable solutions to global challenges in the SBAs by identifying observation needs and gaps and developing knowledge and tools to enable delivery of useful services to users. It also calls on GEO to enhance M&E to track the results and benefits of this process;
- reaffirms support for GEO's Data Sharing Principles and the expansion of standards-based open access to data, information and knowledge;
- welcomes the adoption of the International Open Data Charter and calls for the exploration of coordination between GEO and the Charter;
- resolves to collaborate with statistical agencies and others to integrate EO with social and economic data to multiply their collective value and to contribute to solutions that are linked from the global to the local level;
- resolves to strengthen and facilitate the active participation of developing countries in GEO and the GEOSS, including through regional initiatives such as AfriGEOSS, AmeriGEOSS and GEOSS Asia Pacific; and
- resolves to reconvene the Ministerial Summit in 2019 to review and reaffirm GEO's progress.

MINISTERS' DISCUSSION AND PROPOSALS FOR UPCOMING GEO ACTIVITIES TO BE PLANNED IN 2016-2025 AND THE IMPLEMENTATION OF GEOSS

Summit Co-Chair Moedas announced FLOODIS, focused on tools to mitigate flooding, as the third place winner of the video contest. He invited Ministers to provide input on the future GEO Work Programme focusing on achieving the SDGs and addressing challenges such as food and water security at the global, regional and national scales.

Rodolfo Lacy, Ministry of Environment, Mexico, stressed the value of sharing experiences with disaster preparedness activities enabling countries to respond adequately and adapt quickly. He explained an early warning system in Mexico that sends alerts to personal devices, such as cell phones, saying this could be a GEO initiative.

Summit Co-Chair Jewell said EOs can best serve water scarcity needs, noting future GEO work addresses the water, energy, and food nexus. She shared GEO-related activities including on GEO GLoWS, a National Oceanic and Atmospheric Administration integrated water initiative, the US Geological Survey Open Water Data Initiative and the Ocean Observation Initiative.

Noting that they are working with interagency teams to produce spatial information to address populations affected by national disasters, Victor Osorio, Minister of National Assets, Chile, said his Ministry is leading the implementation of a national geospatial infrastructure.

Summit Co-Chair Moedas underscored three key aspects of GEO: its bridging function, enabling horizontal thinking between silos; its spirit, in which spontaneous groupings work together voluntarily; and its knowledge base.

Armenia thanked GEO for endorsing its membership, underscoring the unique opportunity for environmental, social and economic management through access to datasets.

China supported the Strategic Plan and reiterated the importance of an EO data sharing platform, connected to national and PO platforms.





Japan underscored its strong support of GEOSS, noting it will develop, launch and operate new satellites to acquire and share EO data globally.

South Africa welcomed the Strategic Plan and hoped for a clear set of outcomes to concretize the Plan, suggesting beginning with the "weakest first" to increase capabilities and transform the global community.

Romania recognized the important role of GEOSS and encouraged the community to share information and continue efforts to develop regional initiatives.

Australia strongly endorsed the Declaration and Strategic Plan, underscoring GEO's crucial role in maximizing effective responses to major societal challenges.

Colombia, India, Russian Federation and Senegal reported on national initiatives related to EO and emphasized their continued support to GEO.

Croatia emphasized linking existing observation systems and developing new technologies for space- and ground-based observations as way to achieve the GEOSS vision.

Estonia stressed the role of GEO as a flexible platform for access to EO data to address and mitigate risks, and predict behavior of Earth systems.

France called on the GEO community to participate in the SPOT World Heritage programme.

Finland underscored carbon and greenhouse gas observations, atmospheric composition, forests and cryosphere monitoring as deserving more global efforts.

Gabon recognized the benefits received from GEO initiatives and called on GEO to invest in water resources.

Guinea invited more focus on: research on health; prediction of catastrophic events; historical data on climate; and the use of mercury in meteorological stations.

Sweden stressed the role of GEO in climate change and the 2030 sustainable development agenda.

UK recognized GEO achievements in championing free and open data access and exercising its convening power, and noted his country's contribution to data accessibility and discoverability.

Wrapping-up the session, Summit Co-Chair Jewell stressed the value of exchanging experiences related to EO. Lacy said the "onus is on us" to make data free of charge and available when decisions are being made to protect the environment and citizens. Noting the importance of cooperation and collaboration regarding data and tool exchange, Osorio said the current awareness of using EO is paramount to facing current global challenges.

CLOSING

Summit Co-Chair Cao said that the adoption and endorsement of the Mexico City Declaration marks the beginning of a new era for GEO, and invited closing remarks from his fellow Summit Co-Chairs.

Co-Chair Moedas said the future of GEOSS depends on the GEO community, underscoring two preconditions for this success: preserving the GEO spirit; and placing emphasis on the reproducibility of science.

Co-Chair Pandor reaffirmed South Africa's commitment to GEO, saying it must build on the major accomplishments achieved in its first decade by building strategic partnerships with UN organizations and clearly communicating its value.

Co-Chair Jewell noted her great optimism coming out of the Ministerial Summit, pointing to the remarkable worldwide cooperation she had witnessed, and said delegates should be proud that the GEO Ministerial Summit values substance over form

Co-Chair Cao said the launch and implementation of the Strategic Plan elevates GEO's work to a higher level, noting an aim to enhance capabilities and promote a regional GEOSS for Asia-Pacific.

Mexico GEO Principal Ocampo thanked all participants for the success they have built together, underscoring that the hard work must continue since "nature and climate change will not wait for us"

Co-Chair Cao closed the meeting at 4:47 p.m.



The dais during the closing session of the Ministerial Summit



UPCOMING MEETINGS

POGO-17: The 17th annual meeting of the Partnership for Observation of the Global Oceans (POGO) will be hosted by the Japan Agency for Marine-Earth Science and Technology (JAMSTEC). dates: 26-28 January 2016 location: Yokohama, Japan contact: POGO Secretariat phone: +44 1752 633424 fax: +44 1752 633101 email: pogoadmin@pml. ac.uk www: http://ocean-partners.org/pogo-17

2016 GFOI Plenary and Open Forum: Hosted by the ESA Centre for Earth Observation (ESRIN), the 2016 GFOI Plenary and Open Forum will bring together stakeholders to advise on and contribute to GFOI efforts to assist countries with the development of national forest monitoring systems through the application of satellite data using methods and guidance consistent with Intergovernmental Panel on Climate Change (IPCC) guidelines. dates: 22-26 February 2016 location: Frascati, Italy contact: GFOI Programme Office phone: +4122-730-8429 fax: +4122-730-8520 email: office@gfoi.org www: http://www.gfoi.org/2016-gfoi-plenary-and-open-forum/

Global Climate Observation: the Road to the Future:

This conference is being held to allow producers and users of climate observations and other stakeholders the opportunity to discuss the current monitoring of Essential Climate Variables (ECVs) and to highlight possible new areas for ECVs. **dates:** 2-4 March 2016 **location:** Amsterdam, the Netherlands **contact:** GCOS Science Conference Organizing Committee **phone:** +49 6151 807 6740 **email:** GCOS-SC@eumetsat.int **www:** http://www.gcos-science.org/

47th Session of UN Statistical Commission (UNSC): At its 47th session, UNSC is expected to agree on the indicator framework and a set of indicators for the post-2015 development agenda, among other agenda items. The UNSC Friends of the Chair Group on broader measures of progress will prepare and guide discussions on the development and implementation of the framework. dates: 8-11 March 2016 location: UN Headquarters, New York, USA contact: UNSC email: statcom@un.org www: http://unstats.un.org/unsd/default.htm

2016 GEO BON Open Science Conference: Under the theme 'Biodiversity and Ecosystem Services Monitoring for the 2020 Targets and Beyond,' the conference organized by GEO, German Centre for Integrative Biodiversity Research (iDiv), Helmholtz Centre for Environmental Research (UFZ) and the Southern African Science Service Centre for Climate Change and Adaptive Land Management (SASCAL), will: assess progress in achieving the Convention on Biological Diversity 2020 Aichi Targets; seek to foster scientifically sound biodiversity monitoring by in-situ and remote sensing methodologies, monitoring of ecosystem services, and modeling of biodiversity; and show ways forward in biodiversity observation and the development of EBVs. dates: 4-9 July 2016 location: Leipzig, Germany contact: GEO BON Secretariat email: info@geobon.org phone: +49 341 9733141 www: http://conf2016.geobon.org/

EUROGEO Conference 2016: Organized in conjunction with the Royal Geographic Society and hosted by the University of Malaga, EUROGEO 2016 will be held under the theme 'Geographic Information for a Better World.' The conference will consider how to manage the ever-expanding stock of open data. **dates:** 29-30 September 2016 **location:**

Malaga, Spain **contact:** EUROGEO **email:** conference@ eurogeography.eu **www:** http://www.eurogeography.eu/conference-2016-malaga/

GEO XIII: The thirteenth plenary session of GEO (GEO-XIII) will, among other things, consider adoption of the Data Management Principles Implementation Guidelines. **dates:** 9-10 November 2016 **location:** St. Petersburg, Russian Federation **contact:** GEO Secretariat **email:** secretariat@geosec.org **phone:** +41-22-730-8505 **fax:** +41-22-730-8520 **www:** http://www.earthoservations.org

GLOSSARY

CEOS	Committee on Earth Observation Satellites
CODATA	Committee on Data for Science and
	Technology
COSPAR	Committee on Space Research
Data-CORE	Data Collection of Open Resources for
	Everyone
EC	European Commission
ECMWF	European Centre for Medium-Range
	Weather Forecasts
EO	Earth observation
ESA	European Space Agency
ExCom	Executive Committee
GCI	GEOSS Common Infrastructure
GEO	Group on Earth Observations
GEO-XII	Twelfth Plenary Session of the Group on
	Earth Observations
GEOGLAM	GEO Global Agricultural Monitoring
	Initiative
GEOSS	Global Earth Observation System of Systems
GEO BON	GEO Biodiversity Observation Network
GFOI	Global Forest Observation Initiative
GMOS	Global Mercury Observation System
ICSU-WDS	International Council for Science World
	Data System
IIB	Infrastructure Implementation Board
INEGI	National Institute of Statistics and
	Geography
IPWG	Implementation Plan Working Group
M&E	Monitoring and evaluation
PO	Participating Organization
SBA	Societal Benefit Area
SDGs	Sustainable Development Goals
UNEP	UN Environment Programme

United Nations Statistical Division

World Meteorological Organization

UNSD

WMO