2007-2009 WORK PLAN

DRAFT OUTLINE

COVER NOTE

The GEO-II Plenary requested that the Secretariat begin, in early 2006, to develop the 2007 Work Plan for GEO on a multi-year time-scale. The following is an outline for a three-year plan, 2007 to 2009. The sections below provide a preliminary indication of the content that could be included.

The Secretariat notes that a significant number of tasks may be carried over from 2006, and further tasks could be developed and recommended by the community. However, the task-based approach has not yet permitted the GEO community to define any priority or longer-term objectives, apart from the broadly worded goals of the of the nine societal benefit areas (currently supported by 241 targets and 97specific tasks). To facilitate convergence among the large number of independent tasks, the Secretariat proposes that GEO take the opportunity of this three-year plan to define a few cross-disciplinary objectives (Some proposed examples are provided in Section 2).

Finally, to monitor the gradual realization of GEOSS, it seems necessary that this new plan initiate the development of performance indicators, as required by Section 7.2 of the GEOSS 10-Year Implementation Plan.

The review and comment of the GEO community is invited.

1 Tasks for 2007 to 2009

In each societal benefit area and transverse area, the list of tasks is composed of (1) tasks from 2006 for which activities are expected to continue in 2007 and beyond, and (2) new items which may lead to additional tasks to be initiated during the period 2007 to 2009.

The list of continuing 2006 tasks in each area is based on a preliminary assessment by the Secretariat experts, and more detail is provided in the 2006 Task Evolution Table at Annex I. In a few cases, (e.g. Energy, Ecosystems) a reorganization of some tasks has been proposed. This assessment of 2006 task evolution will, of course, be modified throughout 2006 to reflect task progress and take account of the review process conducted by the GEO Committees.

The new items for 2007 to 2009 have been introduced to accomplish two objectives:

- Ensure completion of the two-year targets, as well as initiation of the six and ten-year targets, identified in the GEOSS 10-Year Implementation Plan;
- Provide opportunity for new ideas to complement and refine the existing targets and tasks.

Note: Additional proposals for New items *invited. These should be broad in nature to avoid proliferation of highly specialized tasks in the work plan.*

1.1 Disasters

To be continued from 2006: DI-06-01; DI-06-02; DI-06-03; DI-06-04; DI-06-08; DI-06-09; DI-06-10; DI-06-11; DI-06-12; DI-06-13; DI-06-14

New items:

- Evaluate the impact of data availability on drought prediction systems.
- Investigate early warning of slowly developing disasters

1.2 Health

To be continued from 2006: HE-06-01; HE-06-02; HE-06-03; HE-06-04; HE-06-05

New items:

- Strengthen health observation systems and health data and information distribution systems.
- Improve modeling of health information for disease trends.

1.3 Energy

To be continued from 2006: EN-06-04

New items:

- Investigate benefits of Earth Observation in the management of uncertainties related to fluctuations and intermittency of renewable energy sources.
- Examine observation needs for impact monitoring and prediction of the environmental effects of energy resource extraction, transportation and/or exploitation.
- Support earth observation for informed energy-policy planning in developing countries.

1.4 Climate

To be continued from 2006: CL-06-01; CL-06-03; CL-06-05; CL-06-06

New items:

- Contribute to the development of an "International Weather, Climate and Earth-system Science Initiative".
- Integrate climate risk management into climate-sensitive development processes.

1.5 Water

To be continued from 2006: WA-06-01; WA-06-02; WA-06-04; WA-06-05; WA-06-06; WA-06-07

New items:

- Improve global water quality monitoring for drinking water and recreation.
- Improve *in situ* monitoring systems for water resource management (especially in developing countries).
- Combine use of satellite data for water measurements with better accuracy and global coverage.

1.6 Weather

To be continued from 2006: WE-06-01; WE-06-02; WE-06-03; WE-06-04; WE-06-05

New items:

- Develop weather warning systems and severe-weather-related natural disaster prevention and mitigation.

1.7 Ecosystems

To be continued from 2006: EC-06-01; EC-06-02; EC-06-03; EC-06-04; EC-06-05; EC-06-06; EC-06-07.

New items:

- Improve tools for space-based and *in-situ* ecosystems observations (*New task based on EC-06-04 and EC-06-05*).
- Develop a global sampling frame for ecosystems to target Earth observations.
- Implement production of a high-resolution global land-cover change dataset and report. *(Formerly AG-06-03, reclassified under Ecosystems)*
- Initiate an international assessment effort on forests and forest change monitoring (formerly AG-06-04, reclassified under Ecosystems).

1.8 Agriculture

To be continued from 2006: AG-06-02; AG-06-03; AG-06-04; AG-06-05; AG-06-06; AG-06-07

New items:

- Further explore the utility of current Earth observations within the fishery and aquaculture sectors, especially in developing countries.

- Secure commitments to sustain the acquisition of key land cover datasets and data products for the agricultural, and fisheries sectors.
- Develop new applications of Earth observation data.

1.9 Biodiversity

To be continued from 2006: BI-06-02; BI-06-04; BI-06-05

New items:

- Develop coherent biodiversity observation strategies within the context of an agreed upon ecosystem classification system, especially for species and ecosystems of merit.
- Apply Earth observation to the characterization, mapping and monitoring of global protected areas consisting of World Heritage sites, natural areas, sites of cultural, geological and archaeological significance.

1.10 User Engagement

To be continued from 2006: US-06-01; US-06-02; US-06-03

New items:

- Further develop user engagement through the communities of practice, both existing and new ones (Renewable Energy, Forestry, Air and Health, Coastal Zones, and Geohazards).

1.11 Architecture

To be continued from 2006: AR-06-01; AR-06-02; AR-06-03; AR-06-04; AR-06-05, AR-06-06; AR-06-07; AR-06-08; AR-06-09; AR-06-11

New items:

- Advocate the "virtual constellation" concept for space-based observations.
- Expand dissemination of numerical model outputs.
- Strengthen ocean and marine observation networks and data management.
- Facilitate data transfer networks (may be an extension of GEONetcast).

1.12 Data Management

To be continued from 2006: DA-06-01; DA-06-02; DA-06-03; DA-06-04; DA-06-08

New items:

- Explore the possibility for developing linkage among large science and technological facilities or initiatives (e.g., Earth Simulator, NASA Columbia system, CERN etc) and networks (e.g., GEANT, APAN, Abilene etc).
- Develop a data dissemination/access and analysis prototype system that will allow Ecosystem and Biodiversity researchers and managers to overlay their data with remote sensing and other geospatial data.
- Pursue the development of a data quality assurance strategy enabling the harmonization of space based data and the extension into in-situ observations.

1.13 Capacity Building

To be continued from 2006: CB-06-04

New items:

- Enhance the capability of developing countries to participate in GEONetcast, through improved communication link, data collection and dissemination products and integration methods.
- Advocate for funding for the implementation of the GEO capacity building strategy defined in 2006.
- Develop and facilitate acceptance of methodologies to evaluate the efficacy of capacity building initiatives.
- In partnership with developing countries, assist in building national capacities to better respond and participate in GEO and benefit from GEOSS.
- Conduct study tours for high-level decision makers within developing countries to observe advanced Earth observation techniques and applications.

1.14 Outreach

To be continued from 2006: OR-06-01; OR-06-02; OR-06-03; OR-06-04; OR-06-06

New items:

- Implement a sustained outreach campaign plan of targeted communication activities to the seven target audiences in the Reference Document, culminating in the Fourth Earth Observation Summit in late 2007.
- Develop outreach to non-profit foundations as a potential source of funding for GEOSS implementation projects.
- Develop the membership of GEO.

2 Cross Disciplinary Objectives

In order to facilitate convergence among the numerous identified tasks, the following preliminary list of cross-disciplinary objectives (specifically linking two or more societal benefit areas or tasks) is proposed.

- Health-Biodiversity-Climate
- Energy-Water-Agriculture
- Linking geohazards and hydrometeorological disasters (for a multi-hazard approach)
- Linking GEONETCast with the GEOWeb Portal
- Earth observation and socio-economic development

3 Coordination Activities

Part I of the GEO 2006 Work Plan described a series of "organizational activities," which were explicitly or implicitly accepted by the Plenary as activities of the GEO Secretariat. In addition, some 17 specific tasks within Part II (the 2006 Work Plan itself) were designated as activities to be led by the Secretariat. A review of these tasks indicates a strong correspondence with the organizational activities assigned to the Secretariat.

For the sake of clarity, in the next plans, a distinction will be made between GEOSS Implementation tasks and activities, to be led by GEO Members and Participating Organizations, and Coordination activities, which will be the responsibility of the Secretariat. These activities will be described in a separate section of the plan and will fall under one of the following categories: Prepare; Negotiate; Advocate; Monitor and Report, described below. The Secretariat tasks of the 2006 Work Plan that are ongoing in 2007 to 2009 will be reassigned to one of these activity categories.

- **Prepare** - The Secretariat will be active in initiating groups, initiating discussions in new areas. It will engage with the global scientific research and technological community, discussing new applications in existing and emerging fields. The culmination of this work is the preparation of the GEO Work Plans by collecting inputs, in particular user requirement outcomes, from GEO Committees and workshops and establishing priority, high-visibility tasks within these Work Plans.

  Continuing tasks from the 2006 Work Plan that will be grouped under this activity include: DI-06-10; DI-06-11; HE-06-05; EN-06-04; US-06-01; DA-06-01

- **Negotiate** - The Secretariat will facilitate agreement on coordination issues among GEO Members and Participating Organizations, define relationships between GEO and existing coordinating mechanisms, and harmonize Earth observation planning, reinforcing synergies among national and/or regional Earth observation planning efforts and enhancing alignment of these efforts with the GEOSS 10-Year Implementation Plan

  Continuing tasks from the 2006 Work Plan that will be grouped under this activity include: DI-06-04; DI-06-10; HE-06-04; US-06-01

- **Advocate –** The Secretariat will define and apply instruments for promoting GEO value, and advocate agreed GEOSS priorities (such as the strengthening of networks and closing gaps in developing countries) in the context of budgetary and fiscal cycles of GEO Members and Participating Organizations. Moreover it will endeavour to mobilize resources by establish high-level relationships with key international funding agencies, and exploring the creation of donor mechanisms for funding activities in targeted areas.

Continuing tasks from the 2006 Work Plan that will be grouped under this activity include: DI-06-04; HE-06-02; CL-06-05; US-06-03; AR-06-08; DA-06-03; OR-06-01; OR-06-02; OR-06-03; OR-06-04; OR-06-05; OR-06-06; OR-06-07

- **Monitor –** The Secretariat will define and apply instruments for monitoring GEO progress, including the development of methodologies and analytical tools of assessment for GEO.

Continuing tasks from the 2006 Work Plan that will be grouped under this activity include: HE-06-05; CB-06-01

- **Report –** The Secretariat will report on GEOSS implementation and Work Plan progress, including in ongoing coordination activities, through a regular quarterly reports, and annual report, and special reports on specific aspects of GEOSS implementation as needed.

Continuing tasks from the 2006 Work Plan that will be grouped under this activity include: HE-06-05; CB-06-02

4 Performance Indicators

To be developed

Annex I

2006 Task Evolution Table

The following table is provided as a preliminary assessment of the evolution of 2006 prepared by the Secretariat expert staff. This assessment of 2006 task evolution will, of course, be modified throughout 2006 to reflect task progress and take account of the review process conducted by the GEO Committees.

Task No.	Title	Status & Remarks
DI-06-01	Encourage in-situ and space agencies to (i) systematically record data over coastal regions subject to tsunami risk, and (ii) archive data in a form easily accessible to all countries.	**To be continued in 2007**
DI-06-02	Facilitate improvement of capabilities for global seismographic networks such as GSN, FDSN, DAPHNE, and sharing of data and event products among GEO members.	**To be continued in 2007**
DI-06-03	Support the improved integration of InSAR (Interferometric Synthetic Aperture Radar) technology for disaster warning and prediction.	**To be continued in 2007**
DI-06-04	Promote and facilitate free and unrestricted exchange of all Earth observation data relevant to Tsunami Early Warning Systems.	**To become an ongoing coordination activity**
DI-06-05	Building on existing techniques, create a plan for the production in coastal zones of high resolution (i) near-shore bathymetric maps (ii) land use/land cover maps and (iii) Digital Elevation Models.	**To be further developed in 2007**
DI-06-06	Harmonize existing efforts towards the preparation of a "global tsunami hazard map" to support coastal zone monitoring and infrastructure planning & investment.	**To be completed in 2006**
DI-06-07	Conduct an inventory of existing geologic and all-hazard zonation maps and identify gaps and needs for digitization.	**To be completed in 2006**

Task No.	Title	Status & Remarks
DI-06-08	Promote the cooperation of national and international agencies towards a multi-hazard approach to address more effectively and systematically coastal risks (e.g. from tropical cyclones, storm surges, tsunamis, land slides, volcanic eruption).	**To be further developed in 2007**
DI-06-09	Expand the use of meteorological geostationary satellites for the management of non-weather related hazards.	**To be further developed in 2007**
DI-06-10	Initiate and maintain a dialogue between GEO, the Board of the International Charter on Space and major Disasters and relevant UN agencies to identify mechanisms for strengthening the scope and mandate of the Charter.	**To become an ongoing coordination activity**
DI-06-11	Explore possibilities for the development of an international charter on telecommunication systems and disasters, building upon the experience of the International Charter on Space and Major Disasters.	**To become an ongoing coordination activity**
DI-06-12	Initiate a knowledge-transfer programme to developing countries, to ensure basic capacity to utilize Earth observations for disaster management.	**To be continued**
DI-06-13	Initiate a globally coordinated warning system for fire and monitoring for forest conversion, including the development of improved information products and risk assessment models.	**To be further developed in 2007.** Forest conversion monitoring removed and developed as a new Ecosystems task
DI-06-14	Support the design of multi-media training modules to communicate the levels of risk from hydro-meteorological hazards to the public to enable them to make informed decisions.	**To be extended or further developed in 2007.** A workshop to organize a risk communication strategy and plan for development of training modules will occur in the latter part of 2006. The development of training modules, dissemination of these modules and their evaluation will be extended to 2007
HE-06-01	Consult with scientists and experts from the health, environment, and Earth observation communities to define the requirements and priorities of the Health communities regarding environmental observations.	**To be completed in 2006**
HE-06-02	Organize a workshop in Geneva in 2006 with the external support of WHO on human health issues, and their relations with Earth observations, environmel and disease outbreak modelling, building upon 2005 events (EC workshop on Human health and Global Change, NIEHS/EPA workshop on Human health and Air quality, EPIDEMIO workshop, Wengen meeting on seasonal forecasts for health, etc).	**To become an ongoing coordination activity**
HE-06-03	Facilitate the formation of international consortia and coordinate, besides advocating funding for, the implementation of major demonstration pilot-projects integrating Earth observations, health and epidemiological as well as socio-economic data. As a priority, a project initiated by THORPEX will focus on the use of advanced weather and climate ensemble forecasting methods to develop and improve the predictability of major health hazards and impacts in developing countries (e.g., West Africa).	**To be extended and further developed in 2007.** Progress on Thorpex, the biodiversity and health

Task No.	Title	Status & Remarks
HE-06-04	Organize bi-lateral meetings with major health organizations and associations at national and regional levels and representatives of GEO, to raise awareness of potential uses of GEOSS for health.	**To become an ongoing coordination activity**
HE-06-05	Building on the existing work of WHO, perform an assessment, with emphasis on developing countries, of existing capacities for the integration of Earth observation and health data (in terms of data collection, processing and integration). Identify gaps, and explore funding as well as existing projects to close gaps and build capacity.	**To be extended or further developed in 2007** The development of a 5 year action plan in 2007. To become an ongoing coordination activity
EN-06-01	Consult with scientists and experts representative of the energy sector (including the private sector) to develop a set of priorities for GEO activities.	**Merged into EN-06-04**
EN-06-02	Conduct a survey and assessment of energy management needs in terms of Earth observations (in-situ, airborne, and space-based) and products in cooperation with national energy agencies and associations, focusing on gaps and requirements for new observations.	**Merged into EN-06-04.** Will be partly implemented in the framework of EN-06-04 Workshop
EN-06-03	Initiate and maintain a dialogue between decision-support tool providers and energy production & distribution managers to identify requirements for the development of improved and/or new tools.	**Merged into EN-06-04.** Will be partly implemented in the framework of EN-06-04 Workshop
EN-06-04	Organize a major workshop in 2006 to identify and define the main elements and orientations of a strategic 5-10 Year Plan for the optimum exploitation of the enhanced capabilities offered by the forthcoming new generation of observing systems and forecasting modeling techniques (e.g. ensemble-based techniques developed by ECMWF and others).	**To be completed in 2006 or early 2007**
EN-06-05	Facilitate the formation of an international consortium to initiate the implementation of a demonstration project utilizing advanced ensemble forecasting techniques to improve energy management – particularly those linked to hydro-power.	**Merged into EN-06-04.**
EN-06-06	Participate in major energy fora and roundtables organized by international organizations, energy associations, and business councils.	**Merged into EN-06-04**
WA-06-01	Organize workshops on water observations, encompassing space-based, airborne, and in-situ observing systems, and focusing on (i) water quality, including fresh, estuarine, and marine water quality, (ii) ground water, (iii) precipitation, soil moisture, surface water, and (iv) hydrological ensemble-based prediction and new observing techniques and products.	**To be extended and further developed in 2007**

Task No.	Title	Status & Remarks
WA-06-02	Facilitate the development of one (or more) demonstration-project that points to the added value of hydrological ensemble forecasts in water resource-management.	**To be further developed in 2007.** Hydrological ensemble forecasts should be developed for use by hydrological services throughout the world. The necessary hydrological data should be determined, the data from hydrological and meteorological services should be pulled together and the systems should be made interoperable. Existing proposals will be reviewed and pilot capabilities will be developed for hydrological ensemble prediction that could be used by hydrological services. These projects will be developed through international collaboration and advocacy for funding to support transition of forecasting systems to operational status.
WA-06-03	Organize a side-event at World Water Forum IV (March 2006, Mexico), highlighting the benefits of global and coordinated Earth observations for water resource-management.	**Completed in 2006**.
WA-06-04	Facilitate the development of a global dataset that maps catchments to the first and second order stream level for use in applying land cover data to management of catchments and monitoring the hydrological cycle.	**To be further developed in 2007.** A global catchment mapping data set will be made available and products on land cover within catchments will be developed.
WA-06-05	Initiate the creation of a coordination mechanism within GEO for global in-situ water observations, including ocean observations, and advocate synergy and sharing of infrastructure among observing systems.	**Ongoing activity**
WA-06-06	Promote best practices in Earth observation application for integrated water resource management in developing countries by supporting a series of workshops in South America, Asia, Africa, and a Small Island nation.	**To be extended or further developed in 2007** Task to be integrated with WA-06-01 Some workshops will take place in 2007 and the issue of free and open data exchange will be raised at appropriate committees meetings (GTN-H, GCOS, GTOS, etc.).
WA-06-07	Initiate a capacity building program in Latin America to develop tools for using remote sensing data in support of water management, and to show the value of Earth observations generally in water resource management.	**To be extended or further developed in 2007** A capacity building program in Latin America, focused on the use of Earth Observation data for water resources management, will be running for the next years.
CL-06-01	Ensure the initiation of international mechanisms to coordinate and maintain sustained climate data reprocessing and reanalysis efforts.	**Ongoing.** To consolidate and ensure the sustainability of ongoing efforts and propose an international coordinating mechanism.
CL-06-02	Establish actions securing the provision of key data for climate studies and forecasting from satellite systems.	**To be completed in 2006.**
CL-06-03	Consolidate the role of existing intergovernmental mechanisms for terrestrial observations needed for climate studies and forecasting. Develop a framework for the preparation of guidance materials, standards, and reporting guidelines for terrestrial observing systems for climate and associated data, metadata, and products to expand the comprehensiveness of current networks, facilitate exchange of data, and provide strategic direction to the terrestrial climate sector.	**To be extended or further developed in 2007.** Will build on the outcome of Task CL-06-02.

Task No.	Title	Status & Remarks
CL-06-04	Identify lead international entities and national focal points for ocean observation efforts that can articulate national goals for their ocean observing sector and coordinate national activities with other designated national entities in order to evolve toward a truly global system of ocean observations.	**To be completed in 2006.**
CL-06-05	Coordinate with the International Polar Year (IPY) to enhance the utilization of Earth observations in all appropriate realms (including, but not limited to, sea and land ice, permafrost, coastal erosion, marine and terrestrial ecosystem change, biodiversity monitoring and impacts of increased resource exploitation and marine transport).	**To become an ongoing coordination activity**
CL-06-06	Enhance and improve coordination of coastal and marine climate observations.	**Postponed to 2007**
WE-06-01	Advocate a complete and stable surface-based (in-situ and airborne) Global Observing System (GOS). High priority should be given to a stable and fully functional World Weather Watch Upper Air Network and the further development of the Aircraft Meteorological Data Relay (AMDAR) programme.	**Ongoing. The calendar is Q2 2006-Q4 2008**. Advocate the observing data originally within WMO to meet requirement of across diverse all 9 SBAs under GEO
WE-06-02	Advocate a stable and improved space-based Global Observing System (GOS) including operational geostationary and polar components. Support WMO efforts related to (i) increased spatial and temporal resolution for geostationary imagers and sounders and (ii) a broader availability of polar Doppler wind profiles for initial operational testing.	**To be completed in 2006 with output of an action plan for endorsement, so it will be extended.** Improvement of the space-based GOS is a long-term task. The main targets of the task originally within WMO should be broadened to meet requirement of across diverse all 9 SBAs under GEO.
WE-06-03	Facilitate the development and maintenance of a prototype global operational multi-model ensemble prediction system (e.g. through THORPEX) incorporating easily accessible databases.	**Ongoing.** This task will be continued and developed into a large and high-attractive activity.
WE-06-04	Support the development of Advanced Dissemination Methods (ADMs) within an operational Integrated Global Data Dissemination Service (IGDDS), as a component of WMO Information System (WIS) and a contribution of the WMO Space Programme to GEO-Netcast.	**To be completed in 2006 with output of recommendations for endorsement, so will be extended.** The target is to support the development of Advanced Dissemination Methods (ADMs) within an operational Integrated Global Data Dissemination Service (IGDDS), as a component of. It is a contribution of the WMO Space Program to GEO-NETCast. Relations of IGDDS and WIS with GEO-NETCast, which is for all SBAs under GEO, should be made clear. And a clear coordination of data provider, GEO-NETCast operators and users across divers SBAs should be developed.
WE-06-05	Co-organize a series of regional capacity building workshops with major numerical weather-prediction training centres to assist developing countries in their utilization of currently available forecasts; building in particular upon WMO programmes for developing countries.	**To be extended or further developed in 2007**

Task No.	Title	Status & Remarks
EC-06-01	Support the Integrated Global Carbon Observation (IGCO) development of a global carbon-observing system, in particular improved global networks of in-situ CO2 observations.	**Continuing 2006 - 2009**
EC-06-02	Establish an ad hoc Ecosystems Classification Task Force, covering terrestrial, freshwater, and ocean ecosystems, with a mandate to create a globally agreed, robust, and viable classification scheme for ecosystems.	**Began in 2006, to be completed 2007**
EC-06-03	Initiate the harmonization of observing-methods and create synergies between ecosystem observing activities and those of other existing groups and mechanisms for terrestrial, freshwater and marine systems.	**Continuing 2006-2009**
EC-06-04	Explore techniques for up-scaling in-situ ecosystem observations.	**Continuing 2006-2009**
EC-06-05	Complete a survey of the research community involved in in-situ observations and modelling for new platform and sensor needs, or for suggestions for better use of existing systems.	**Combined into new task for 2007**
EC-06-06	Conduct an inventory of archived data for ecosystems, identify data gaps, identify data at risk, and evaluate costs of data rescue. In complement, conduct a workshop to define a data archiving strategy taking into account data types, processing levels and supporting media.	**Combined into new task for 2007**
EC-06-07	Build upon existing initiatives (e.g. ANTARES in South America for oceans and GOFC-GOLD regional networks for terrestrial domains) to develop a global network of organization-networks for ecosystems, and coordinate workshops to strengthen observing capacity in developing countries.	**To be extended or further developed in 2007** Deliverables will span 2006-2007. Linkages with terrestrial ecosystems will be developed in 2007
AG-06-01	Initiate the creation of a 5- to 10-year strategic plan: define specific objectives for 2007 and create a plan of action for GEO in agriculture.	**Completed 2006**
AG-06-02	Consult with scientists and experts from the fisheries, aquaculture, coastal zone management and Earth observation communities at international and regional levels to identify opportunities for enhanced utilization of Earth observations in fisheries and aquaculture.	**To be completed 2007**?
AG-06-03	Utilizing global and regional high-resolution land-cover datasets (e.g. GLOBCOVER) and earlier 1-km resolution land cover data sets (e.g. Global Land Cover 2000), implement production of a high-resolution global land-cover change dataset and report. Propose mechanisms for regular analysis and reporting on land cover change building on current efforts and promulgate the use of these products, especially in developing countries.	**Ongoing** This task and concept has been moved to the section on Ecosystems

Task No.	Title	Status & Remarks
AG-06-04	Initiate an international assessment effort on forests and forest changes utilizing ongoing land cover mapping projects (e.g. GLOBCOVER). Ensure application of standardized classifications and harmonization of existing datasets.	**Continuing in 2007**
AG-06-05	Facilitate the implementation of a demonstration project, initiated by THORPEX and AMMA, on the use of advanced weather and climate ensemble forecasting methods integrating Earth observations, agricultural data and socio-economic data, to develop and improve the predictability of food-supply hazards in Africa.	**Continuing in 2007**
AG-06-06	Advocate funding for demonstration projects to produce global irrigated area/crop production datasets and promulgate sustained monitoring efforts utilizing the validated methodologies	**To be extended or further developed in 2007** Secretariat to request from drafters of task sheet:1) Further clarification/elaboration of Project2) That other contributing organisations be identified and included
AG-06-07	Initiate the design of training modules to demonstrate the usage of Earth observation data and products for the agricultural sectors in Africa, Asia, Latin America, Central and Eastern Europe, and in Small Island States.	**To be extended or further developed in 2007** Development of training modules in 2007
BI-06-01	Ensure participation of the biodiversity community into the Ecosystem Task Force (see Task EC-06-02) in order to ensure that the ecosystem classification system developed as part of this task is compatible with biodiversity observational requirements.	**To be completed 2006.**
BI-06-02	Building on the framework adopted for monitoring biodiversity trends in the UN Convention on Biological Diversity, conduct a series of workshops and meetings to (i) define the needs and requirements of the biodiversity information users sector, (ii) delineate available methodologies and (iii) identify the adequacy of current and past observational strategies.	**Continuing in 2007.**
BI-06-03	Initiate the development of a strategic plan for capturing historical biodiversity data from natural history collections and the research community.	**Completed in 2006**
BI-06-04	Initiate the development of a strategic plan for periodic global assessment of status and trends for species of merit, taking into account the Millennium Ecosystem Assessment and CBD 2010 targets. Include the remote sensing community in this discussion to determine the applicability of remote sensing to this topic.	**Begun in , continuing 2007.**
BI-06-05	Facilitate the interoperability of the multi-institutional biodiversity observation network and ensure that it links to data sets of ecological and other related observation systems.	**Begun 2006, continuing 2007 – 2009.**
US-06-01	Establish a GEO process for identifying critical Earth observation priorities common to many GEOSS societal benefit areas, involving scientific and technical experts, taking account of socio-economic factors, and building on the results of existing systems' requirements development processes.	**To become an ongoing coordination activity**

Task No.	Title	Status & Remarks
US-06-02	Initiate pilot communities of practice to identify and further refine users' needs, in particular on cross-cutting areas, building upon the initial experience of community of practice and on information provided by national, regional and project-level surveys.	**Ongoing**
US-06-03	Promote interactions, in the form of fora, between data providers, scientists, industry, international governmental and non-governmental organizations, decision- and policy- makers to identify requirements for new or improved data, products and services.	**To become an ongoing coordination activity**
AR-06-01	Establish and maintain a process for reaching interoperability arrangements, informed by ongoing dialogue with major international programmes and consortia. That process is to be sensitive to technology and accessibility disparities among GEO Members and Participating Organizations, and must include mechanisms for upgrading arrangements.	**To be completed in 2006 and maintained in 2007 and beyond.** It is also necessary to consider in detail how varisous existing interoperability projects (e.g., GMES, INSPIRE, EC related, and other international and national) could be part of GEOSS. Some more techonology aspects should be considered such as like Grid, Ontology, Semantic Web, SensorML and so on.
AR-06-02	Produce practical strategic and tactical guidance document on how to converge disparate systems to a higher degree of collaboration and interoperability under GEOSS including its roadmap and using existing efforts wherever possible.	**To be completed in 2006 and maintained in 2007 and beyond.**
AR-06-03	Reach consensus on how the GEOSS architecture will link the components of GEOSS and allow for growth potential.	**To be further developed in 2007**
AR-06-04	Establish a process for GEO Members and Participating Organizations to commit component systems to GEOSS, and advocate specific initial commitments of contributed systems and other components, including agreement to accept GEOSS interoperability specifications as defined to date, and allowing for growth.	**To be further developed in 2007**
AR-06-05	Initiate development of a publicly accessible, network-distributed clearinghouse, subject to GEOSS interoperability specifications to date, and including an inventory of existing data, metadata, and pre defined common products.	**To be maintained in 200 7and beyond.**
AR-06-06	Facilitate interoperability among Digital Elevation Model (DEM) data sets with the goal of producing a global, coordinated and integrated DEM.	**To be further developed in 2007.** Beginning with DEM guidance of 2006, this task may enhance to develop more interoperability guidance for other generic data sets (e.g., NDVI, Hot Spot, SST etc). DEM guidance of 2006 would need to maintain if necessary.
AR-06-07	Produce an inventory of existing in-situ observation networks (including airborne), beginning with the networks of GEO Members and Participating Organizations, and associate them with societal benefit areas as appropriate.	**To be further developed in 2007** Also, state-of-art technology such as SensorWeb should be taken into account to estimate how it will be useful or easy to implement.

Task No.	Title	Status & Remarks
AR-06-08	Advocate additional resources for the maintenance and expansion of in-situ observing systems in cooperation with major national and international organizations and programmes.	**To become an ongoing coordination activity**
AR-06-09	Advocate establishing continuity for near real-time, 30-m (or better) resolution, multi-spectral remote-sensing coverage everywhere on the Earth's surface, including support for the launch of a Landsat-equivalent follow-on mission.	**To be further developed in 2007**
AR-06-10	Advocate and facilitate the timely implementation of the Global Precipitation Measurement (GPM) mission and encourage more nations to contribute to the GPM constellation	**To be completed in 2006**
AR-06-11	Prepare a series of appropriate advocacy activities, including representations to the International Telecommunication Union. For example, evaluation of challenges presented by the industrial development of automobile anti-collision radar and the implications for the use of radio frequencies essential for tropospheric sounding.	**On-going**. GEOSS should work to identify the specific action from 2006 outcomes (e.g., Microwave sounders, SAR (Ka, Ku, X, C, L band), etc) and need to coordinate with appropriate agency or organization (if necessary through ITU). This task should keep continuing for the protection of radio frequencies critical to the Earth Observation
DA-06-01	Invite experts to identify steps required to further the practical application of the agreed GEOSS data sharing principles.	**To become an ongoing coordination activity**
DA-06-02	Develop a GEO data quality assurance strategy, beginning with space-based observations and evaluating expansion to in-situ observations, taking account of existing work in this arena.	**To be extended in 2007.** It is important to develop the quality assurance strategy of in-situ observations data based on satellite observation data quality assurance strategy from 2006 outcome.
DA-06-03	Facilitate the development of demonstration projects promoting the wider use, in other disciplines, of ensemble-based techniques originally developed for weather forecasting.	**To become an ongoing coordination activity**
DA-06-04	Facilitate the development, availability and harmonization of data, metadata, and products commonly required across diverse societal benefit areas, including base maps, land-cover data sets, and common socio-economic data.	**To be further developed in 2007**
DA-06-05	Develop a guidance document for basic geographic data (including format, precision, accuracy, etc.), taking into account relevant national, regional and global initiatives.	**To be completed in 2006**
DA-06-06	Advocate use of existing Spatial Data Infrastructure components as institutional and technical precedents, where appropriate, including standard protocols and interoperable system interfaces, among other components.	**To be further developed in 2007** Evaluate the possibility of merge to tasks of AR-06-01 and -05

Task No.	Title	Status & Remarks
DA-06-07	Define a model web portal system for access to all Earth observation data, based on existing portals and systems, designed to increase use, quality, and accessibility of existing information, tools, and networks. Particular attention will be given to the coordination of networks in specific societal benefit areas to enable reuse thereby to achieve synergy and leverage.	**To be completed in 2006**
DA-06-08	Develop learning tools (based on existing tools) to improve technical capability to (i) create common geo-referenced maps, (ii) merge socio economic data using geographic information systems (GIS), and (iii) combine geo-referenced maps with application tools to yield basic information systems.	**Postponed to 2007 for re-evaluation** .
DA-06-09	Establish GEOSS Best Practices Registry by a request for proposals from GEO organizations willing to maintain/update GEOSS Best Practices Registry. The registry should also include existing cost-benefit sharing mechanisms and examples (data sharing, cooperative data acquisition, joint development, joint flight, collaborative sciences, etc).	**To be completed in 2006, maintained in years beyond**
CB-06-01	Perform a review of capacity-building initiatives in GEO Members and Participating Organizations, taking into account results of existing surveys, to identify existing and planned capacity-building activities and gaps.	**To be completed in 2006** **To become an ongoing coordination activity**
CB-06-02	Perform an analysis of existing documentation of Earth observation infrastructure requirements essential to the implementation of GEOSS in developing countries, and document commonly identified gaps.	**To become an ongoing coordination activity**
CB-06-03	Perform a review of existing education and training initiatives for Earth observation utilization in developing countries, and promulgate the use of best practices in cooperation with specialized UN agencies and other organisations.	**To be completed in 2006**
CB-06-04	GEO-NETCast, an operational service delivering data and products based on the use of communication satellites	To be further developed in 2007
OR-06-01	Develop a comprehensive list of major international conferences and workshops relevant to GEOSS (UNFCCC COP, sustainable development fora, etc.) in each societal benefit area and ensure GEOSS participation and visibility in selected events.	**To become an ongoing coordination activity**
OR-06-02	Engage in a series of presentations and briefings to technical audiences in each societal benefit area, with an emphasis on emerging fields of health, energy, water resources management, and ecosystems.	**To become an ongoing coordination activity**
OR-06-03	Promote awareness of successful communities of practice activities, advancing awareness of potential applications for Earth observations.	**To become an ongoing coordination activity**
OR-06-04	Implement a sustained outreach campaign plan of targeted communication activities.	**To become an ongoing coordination activity**

Task No.	Title	Status & Remarks
OR-06-05	Complete preparation of outreach campaign communication tools begun in 2005, including a GEOSS logo/visual identity; an engaging website; an umbrella message and sector-specific messages; multi-media and press tools; and standard PowerPoint briefings.	**To become an ongoing coordination activity**
OR-06-06	In coordination with the outreach campaign, engage in a series of regular media roundtables and briefings and occasional well-timed press conferences and special events.	**To become an ongoing coordination activity**
OR-06-07	Establish a network of press & media representatives for all GEO members and participating organizations to advance outreach objectives.	**Completed in 2006**