

GD 6 GEOSS non Space-based Earth Observation Resources

1. General description

Analyze the current trends and develop new scenarios for non space-based measurements, coordination, and access to data, which would allow inclusion of new types of data (such as drones, citizens' observatories) and their provenance. The regional scale would be considered as the reference to start.

Promote and coordinate non space-based observing systems (including both in situ and remote sensing airborne, land and ocean-based systems) to provide long-term continuous observations of all components of the Earth System (atmosphere, ocean, terrestrial, ice, solid earth). Identify critical gaps in existing observational networks with a particular focus on: the needs of developing countries, the need for continuity of observations, and the potential benefits of enhanced observing systems. Individual Earth observing systems operated by national, regional and international entities are integral to GEOSS.

Identify data resources needed by GEO (including flagships, initiatives and community activities) to achieve the objectives of the GEO Strategic Plan. Coordinate increased interoperability of non space-based data including new data flows from the private sector and the public, and develop global and regional datasets supporting the GEO community.

Compile global perspectives on existing plans for new non space-based observing networks and develop common strategies and actions to ensure sustained observations. Advocate adequate resources to maintain systems that provide continuity of observations.

Promote coordination of non space-based and space-based observation networks to provide calibration and validation sources, to fill measurement gaps, and to promote technology sharing and infusion between the two communities. Promote communication between the non space-based and space measurement communities by sponsoring workshops, side events, and educational material as needed.

2. Implementation approach

a. Contributors

- i. Cooperate with non space-based operators to promote and coordinate development activities related to non space-based observation infrastructures and networks; build upon ongoing coordination efforts & activities
- ii. Explore and determine how non space-based coordination frameworks put in place for national, regional (e.g. Copernicus, ConnectinGEO, ENEON, AfriGEOSS) and global (e.g. Eye on Earth) levels benefit most effectively the GEOSS objectives
- iii. Improve coordination and facilitate access to non space-based data resources
- iv. Improve global coordination of non space-based atmospheric observations (e.g., instrumented aircrafts, drones, balloons)

- v. Improve global coordination of non space-based ocean observations and promote the development of new and enhanced measurements (e.g., global high-frequency-radar network to measure coastal surface currents)
 - vi. Improve global coordination of non space-based land surface observations and promote the development of new and enhanced measurements
 - vii. Explore how citizen science observation initiatives can contribute to filling non space-based observational gaps
 - viii. Develop a global database of non space-based activities (i.e., regional and global projects), organized by domain (land, ocean, atmosphere) that includes information on the activities, its measurements and data access. Such a database will be essential for non space-based gap assessments and coordination with the space-based observation community. Coordinate the database development with the development of the GEO Knowledge Base.
 - ix. Coordinate increased interoperability among non space-based datasets, between space and non space-based datasets, and new non space-based data flows from private sector and the public, and develop global and regional datasets supporting the GEO community. Coordinate this activity with the global observing systems, including the Global Geodetic Observing System (GGOS).
- b. GEO Secretariat
- i. Overarching coordination with administrative support
 - ii. Promote coordination between space and non space-based observation communities and conduct gap assessments, as needed.

3. Planned activities and outputs in 2016

- a. Develop a plan of activities for the task with defined leadership roles
- b. Publish a report on the status of global non space-based coordination and frameworks. Include content addressing sustainability of existing measurements, investigating new non space-based measurements, facilitating the transition from research to sustained long-term operations, and coordinating the integration of space-based and non space-based observations.