

US EPA ARCHIVE DOCUMENT

Title of the Achievement

Improved global land cover observations and assessments

Brief description

- 1) Completion & presentation of the **Integrated Global Observations for Land (IGOL)** document to the IGOS-P plenary as first comprehensive and integrated observation strategy for the land domain.
- 2) **Release of ESA's GLOBCOVER product** based on 2005/06 ENVISAT MERIS data as highest resolution (300 m) consistent global land cover map (see mosaic "Tapisserie de Montreux" to the right) fully compliant with international standards for land cover characterization (UN Land Cover Classification System) and validation (CEOS best practices). Additional progress can be reported for national and regional high-resolution land cover mapping programs including CORINE/GMES service, US National Land Cover Database, and new products evolving in countries like Canada and China, and as part of the UN Global Land Cover Network.
- 3) **Developments towards high-resolution (Landsat-type) land cover change dataset:** NASA and the U.S. Geological Survey have been making progress acquiring high resolution imagery for the Mid-decadal Global Land Survey that will provide a consistent, preprocessed, global, free-of charge Landsat data for 2005 that extends the 1990 and 2000 Geocover Landsat global dataset. This should be highlighted as major contribution of basic data support for any global and regional land mapping activity where nearly all user communities are asking for land change information at least every 5 years.
- 4) **GEO global land cover dataset:** the international community has produced a first "best available" global land cover dataset that could evolve to a "GEO global land cover product". Starting with existing moderate resolution global land cover datasets, the community harmonizes existing data to derive the best land cover estimate for each location worldwide.

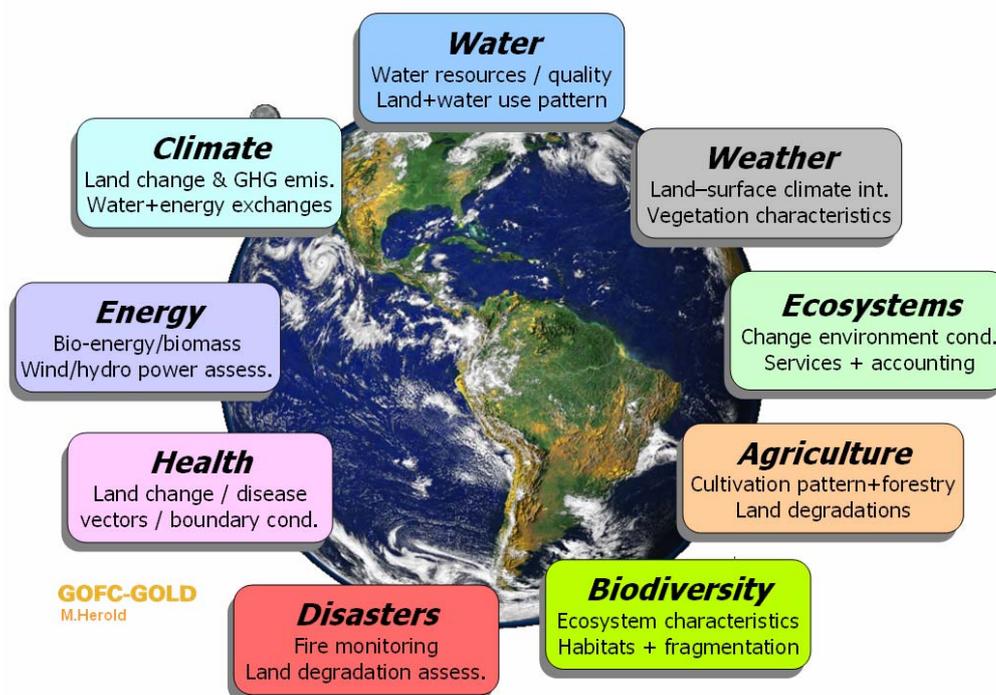
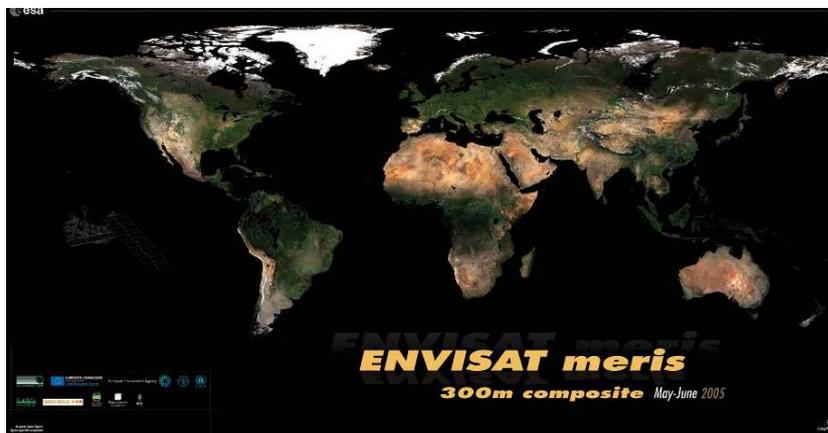


Figure: Information needs and observation requirements for all GEO SBA's emphasize the multitude of benefits from continuous and consistent global land cover observations

Added value

GEO has been the one of the main drivers for achieving the progress reported; GEO has:

- Highlighted the societal needs and relevance of land observations,
- Provided the forum for advocating global land cover and change observations as key issue,
- Fostered integrated perspectives for continuity and consistency of land observations,
- Helped to evolve and apply international standards for land cover characterization and validation,
- Improved a shared vision within the land observation community and involved global actors,
- Advocated joint participation in ongoing global mapping activities, regional networking and capacity building in developing countries ,
- Helped to develop international partnership involving producers, users and the scientific community to better produce and use existing datasets

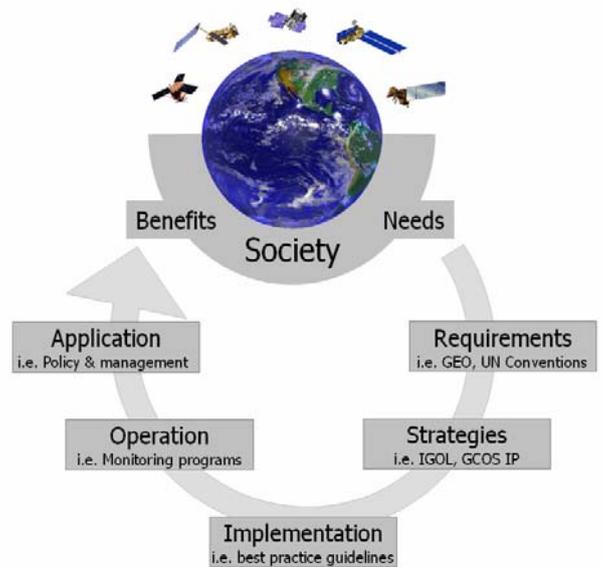


Figure: Framework highlighting GEO's role for defining requirements and fostering improved observation strategies and implementation guidelines towards operational land cover observations

Relevance to GEO

SBA's and 10 year work plan

On page 119, the GEO 10 year reference document states that all areas of societal benefits require land cover observations. The figure below links the GEO SBA's key land cover observation needs. The 10 year reference plan recognizes the importance of the IGOS-P Land Theme (IGOL), the Land Cover Classification System, and Global Observation of Forest and Land Cover Dynamics (GOFC/GOLD) to provide guidance and observation plans for GEO implementation.

GEO task reference

The progress has been achieved as part of the GEO task DA-07-02 dealing with "global land cover". The overall goal of this task is to provide a suite of global land cover datasets, initially based on improved and validated moderate resolution land cover maps and eventually including land-cover change at high resolution.

Participants

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Current status and next steps

Linking IGOL and GEO

The completion of the IGOL document necessitates the integrating the strategies into specific GEO implementation, i.e. individual GEO tasks. This process is ongoing.

Decadal survey (2010)

For 2010, the availability of Landsat data is tenuous and the community is asking GEO to help with ensuring that the decadal global high resolution satellite mosaic will be produced. There is no lack of observation since many countries have Landsat-type satellite assets and it would be an international coordination task to ensure this global mosaic is produced – this could be a major GEO achievement.

Operational land cover observations

GLOBCOVER and version 1 of the GEO global land cover map could be presented at the ministerial level meeting. Following the overall goal of GEO task DA-07-02 to develop new global high-resolution (change) product, it is important to emphasize that an operational land cover observation and validation system is needed to fully achieve the societal benefits. Emphasizing progress made at the ministerial summit would likely get more people/countries to sign up for this process and jointly participate in continuous and consistent global land cover observations based on achievements with GEO involvement