

**Post 2015 Data Sharing Strategy Issues and Discussion
For consideration by the GEO Post-2015 Working Group**

**Submitted by the GEO Data Sharing Working Group DSWG
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Introduction and Purpose

The GEO Data Sharing Working Group, DSWG, appreciates the opportunity to forward this discussion paper to the GEO Post 2015 Working Group. The purpose of this note is to inform the GEO Post 2015 Working Group on some issues that the DSWG considers important for post 2015 GEO. The DSWG hopes that these issues can be adopted for recommendation by the Post 2015 Working Group or at the minimum included for discussion and resolution at a later date.

This short paper outlines briefly issues on:

- A restatement of data principles
- Strengthening the evaluation of the progress of GEO data sharing
- Emphasizing reference data sets and interoperability;
- Consideration of new data sharing issues arising from new emergent observation systems
- Supporting the data sharing component in education and communication

Should the GEO Post 2015 Working Group have any questions on these issues, or want to discuss them further, please contact the DSWG co-chairs.

A restatement of data principles

The societal benefits of Earth observation (EO) cannot be achieved without data sharing. Data management and getting information to GEOSS users are an integral part of the GEO objective “to monitor continuously the state of the Earth, to increase understanding of dynamic Earth processes, to enhance prediction of the Earth system, and to further implement our international environmental treaty obligations”. In 2005, the Scope of the GEOSS Implementation Plan stated: “The vision for GEOSS is to realize a future wherein decisions and actions for the benefit of humankind are informed by coordinated, comprehensive, and sustained Earth observations and information.”

One of the first accomplishments of the Group on Earth Observations was the acceptance of a set of high level Data Sharing Principles as a foundation for GEOSS. Ensuring that these principles are implemented in an effective yet flexible manner remains a major challenge. The 10-Year Implementation Plan says "The societal benefits of Earth observations cannot be achieved without data sharing" and sets out the GEOSS Data Sharing Principles.

The DSWG recommends that the GEOSS Data Sharing Principles for the post-2015 period be strengthened and is presently drafting alternative sets of data sharing principles that will be sent for review and consideration.

Strengthening, through concerted action by the GEO Secretariat, the evaluation of the progress of GEO data sharing

The DSWG continues to recognize the value of evaluating the progress of data sharing within GEO. Specifically, evaluation through regular monitoring should be made of the evolving numbers of data sets effectively contributed to GEOSS, actually retrieved by users and the accounting of Member State data policies regarding data sharing. The efforts could be part of the common GEOSS Information System, currently known as GCI.

DSWG notes that AIP-6 is currently working on testing possible use metrics. This testing is scheduled to be completed by the end of 2013, and to be further tested and made operational in 2014. The DSWG was asked in 2012 for its feedback on the metrics to be captured, and is providing additional input in 2013. The implementation of use metrics is optional for data providers, but can also be applied to GCI components, such as the GEO Web Portal and the GEO DAB.

The DSWG recognizes that usability within the GCI is of critical importance for the successful sharing of data. In particular, registration of data resources in the GCI has been criticized as being too difficult and confusing, to the point that some GEOSS contributors may not be registering their resources. This needs to be addressed. Recognizing that the IIB, via IN-05 and IN-03, is looking into these issues, the DSWG is considering how to reach out to data providers to get feedback on how to improve the situation.

The DSWG recommends that these monitoring functions could be properly done by the GEO Secretariat. However, there is no provision for this effort, estimated at about 1 staff year. The DSWG notes that the Post 2015 Working Group has provided for a stronger Secretariat, but would like to add this monitoring task to the list of GEO Secretariat tasks that should be considered.

An emphasis on reference data sets and interoperability

The GEO Strategic Targets highlight consistency and inter-operability of data and products which are not sufficiently reflected in the current data categories (1. basically all data and 2. GEOSS Data-CORE).

Consideration should be given to a third category, 'Reference Data'. Reference data should fulfill a set of data sharing plus quality requirements such as:

1. only data in the GEOSS Data-CORE can become reference data;
2. reference data must be accompanied with a peer-reviewed publication describing quality characteristics such as heritage, traceability, retrieval scheme, accuracy and resolution;

Inclusion of reference data sets would support traceability and data consistency. Data inconsistency is one of the biggest problems that we are currently facing - between different products and including certain products generated by different agencies for the same purpose. This may support the development of 'reference SBA services' based on referenced data which then can be analyzed vis-à-vis new findings (new sensors and products, improved models, etc.) by the research community.

Consideration of new data sharing implications from new emerging observation systems

In its vision of post 2015 GEOSS, the DSWG envisions a number of new observation systems, both private and public, that GEOSS should try to incorporate. For example, GEOSS could evolve towards a Community of Communities, with a flexible, non-invasive broker middleware technology playing the pivotal role within the GEOSS architecture post-2015. This "community of communities" approach to the GEOSS would include Public Sector Systems, Private Sector Systems, Semi Public Systems, Humanities/Social Science Systems and a new concept: Citizens' Observatories. Such new observation strategies as this raise new issues (e.g., privacy, trust, security, massive amounts of unstructured data) with possible implications for the GEOSS Data Sharing Principles.

The DSWG recommends that the Post 2015 Working Group provide for such new advances in their strategy, and in particular that the DSWG should be charged with examining the data sharing implications of these new observation programs.

Supporting the data sharing component in education and communication

To help achieve the societal benefits of Earth Observations, the GEO Post 2015 Working Group should consider the need to support a strategy for education and communication

that includes concepts and approaches to open data sharing, such as the Strategy of Education and Communication of Earth Observations in the World (SECEOW). The DSWG reinforces that the open sharing of satellite data is an excellent way to educate people about the need to cooperate in managing the environment, including biodiversity, the oceans, ecosystems, agriculture, and the atmosphere, especially in the 9 GEO societal benefit areas. Promoting open sharing and use of satellite data will also help ensure that future generations have the information base they need to understand and manage the environment in the future.