

GEOSS Data Sharing Principles post 2015
Data Sharing Working Group (DSWG) of the
Group on Earth Observations (GEO)
March 10, 2014

Introduction

Access to data and information by GEOSS users is an integral part of the Group on Earth Observation (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.”¹ The **GEOSS 10-Year Implementation Plan** accepted in 2005 states: “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.” GEO’s activities and availability of data shared through GEOSS should contribute to the economic growth of the GEO members, particularly if GEOSS objectives in areas such as improved management of energy resources, sustainable agriculture and enhanced weather information are realized.

One of the first accomplishments of the GEO was the acceptance of a set of high level principles regarding data sharing as a foundation for GEOSS. The 10-Year Implementation Plan recognizes that "the societal benefits of Earth observations cannot be achieved without data sharing" and sets out three **GEOSS Data Sharing Principles**:

- There will be **full and open exchange** of data, metadata and products shared within GEOSS, recognizing relevant international instruments and national policies and legislation;
- All shared data, metadata and products will be made available with minimum time delay and at minimum cost;
- All shared data, metadata and products being free of charge or no more than cost of reproduction will be encouraged for research and education.

Ensuring the implementation of these principles in an effective yet flexible manner remains a major challenge. In particular, although the first GEOSS Data Sharing Principle establishes the “full and open exchange of data, metadata and products” as the norm for GEOSS, it also recognizes that relevant international instruments and national policies and legislation may place restrictions on some data shared within GEOSS. The compromise that it incorporates was designed to address the needs to protect data, and to allow for limitations regarding sharing that members of the GEO community are obligated to impose and implement.

¹ Objective established during the 2003 GEO Washington Summit, in GEOSS 10-Year Implementation Plan at p.27. Online: [http://earthobservations.org/docs/GEOSS%2010-Year%20Implementation%20Plan%20\(GEO%201000\).pdf](http://earthobservations.org/docs/GEOSS%2010-Year%20Implementation%20Plan%20(GEO%201000).pdf)

Purpose

Since the Data Sharing Principles were adopted in February 2005 within the GEOSS 10-Year Implementation Plan, the situation with regard to data sharing has improved considerably, both within GEOSS and across the EO and environmental data landscape. The 2010 Beijing Ministerial Declaration announced the creation of the GEOSS Data Collection of Open Resources for Everyone (GEOSS Data-CORE), consisting of data contributed by the GEO community that can be shared without any restrictions on use. Since then, the commitment to sharing data as part of the GEOSS Data-CORE has increased, and a growing number of GEO Members and Participating Organisations adhere to and benefit from full and open data sharing without restrictions on re-use. In 2013 the consensus regarding the benefits that full and open exchange of data can bring is strong.² Many governments and organizations have changed their policies regarding re-use of their information, which has resulted in a significant increase of data and information that are easily accessible and openly re-usable. This includes newly adopted legislation in Europe, open data policies in countries like New Zealand, Denmark, Finland, Argentina, Japan and many others, as well as the G8 Open Data Charter adopted in June 2013. GEO has played a part in bringing about these changes in policy and attitude.

Within this changing landscape the Data Sharing Working Group (DSWG) believe that the time is right to revisit the 2005 GEOSS Data Sharing Principles, in particular taking into account the current stage of preparing for the next GEO decade 2016-25 and the work on the new Implementation Plan that will determine the further development of the GEOSS. The aim of updating the principles is not only to clarify and improve the language, but more importantly to ensure that they advance GEO's vision and objectives, just as the current principles did when they were first adopted. The DSWG consider this critical to GEO's relevance and value to society. GEO's core principles for data sharing need to strongly support and indeed accelerate the global trend towards truly open data sharing in support of society.

This document outlines two proposals of new GEOSS Data Sharing Principles and provides the rationale for the proposed changes, as well as the differences and similarities compared to the existing GEOSS Data Sharing Principles.

Proposals

Version 1 – innovative approach:

1. Data, metadata and products will be shared through GEOSS as Open Data³ by default, by making them available as part of the GEOSS Data-CORE without charge, without restrictions on reuse, subject to the conditions of registration and attribution when the data are reused.

² See e.g. The Open Data Barometer 2013 Global Report, T. Davies, online:

<http://www.opendataresearch.org/dl/odb2013/Open-Data-Barometer-2013-Global-Report.pdf>.

³ See G8 Open Data Charter <https://www.gov.uk/government/publications/open-data-charter/g8-open-data-charter-and-technical-annex>

2. Where international instruments, national policies or legislation preclude the sharing of data as Open Data they should be made available through GEOSS with minimal restrictions on use and at no more than the cost of reproduction and distribution.
3. All shared data, products and metadata will be made available through GEOSS with minimum time delay.

Version 2 – semi-conservative approach:

1. There will be full and open sharing of data, metadata and products through GEOSS, recognizing relevant international instruments and national policies and legislation.
2. All shared data, metadata and products should be made available free of charge for any purpose and to any user as part of GEOSS Data-CORE.
3. All shared data, metadata and products will be made available with minimum time delay, at no more than the cost of reproduction and distribution, and with attribution as appropriate.

Explanation

In the first proposed data sharing principle *both versions* substitute “within” with “through”. This replaces the previous more restrictive term and removes potential ambiguities in its interpretation, such as when data are re-used “outside” of GEOSS itself. In addition, it better reflects technical aspects of how GEOSS enable sharing of data.

Version 1

The innovative version of the Principles incorporates the concept of “Open Data” to their wording and links the GEOSS Data-CORE with this concept: the latter is presented as a mechanism or mode of sharing Open Data as it rules out restrictions on use, while keeping conditions of attribution and user registration that per se do not affect re-use. Inclusion of GEOSS Data-CORE in the wording of the default data sharing principle recognizes and emphasizes its value for GEOSS and GEO community.

Open Data was chosen to be reflected in the Principles as it is gaining considerable traction as a simple, transparent concept, in particular with regard to the government-held or -produced data. More and more jurisdictions declare Open Data to be the default principle for sharing these data, which above all excludes restrictions on re-use and charges for access to data for any purposes. In June 2013 the G8 countries signed the “Open Data Charter”. The document lays down five strategic principles for sharing government data. The first and the most important of these is an expectation that all government data will be published as Open Data by default.

The reference to Open Data in the new first principle sets the unrestricted sharing as the default sharing mechanism for GEO as part of the GEOSS Data-CORE. It further includes interpretation of the concept of Open Data and of the GEOSS Data-CORE by specifying

that the data are shared without charge,⁴ with no restriction on reuse, and the possibility to impose only the conditions of registration and attribution when the data are reused.

In order to enable sharing through GEOSS resources with restrictions on re-use, the second principle recognizes that restrictions may be imposed by “international instruments, national policies or legislation”, and welcomes sharing of such data as well. However, as opposed to the current wording of the Data Sharing Principles, it encourages members and participating organisations to keep such restrictions minimal and refrain from imposing charges that exceed cost of reproduction and distribution.

The third principle of both versions puts emphasis on the provision of data through GEOSS with minimum time delay. This part of the Principles does not differ from the current wording.

Version 2

This version of the Principles shows continuity and consistency with the important provisions of the current Principles in that its first principle, while putting emphasis on full and open sharing, retains its original limitation of recognising restrictions on the use of data shared through GEOSS imposed by “relevant international instruments and national policies and legislation”.

The most innovative provision of this version of the Principles is the second principle that encourages sharing of data “free of charge for any purpose and to any user” when the data are shared as part of the GEOSS Data-CORE. This change reflects the current trend towards Open Data in many jurisdictions, including those who are eager to share their data as part of GEOSS Data-CORE. The principle encourages sharing data as part of the GEOSS Data-CORE, which again emphasizes its importance for the success of GEOSS.

The rationale for expanding the second principle is twofold. Firstly, data, metadata, and products should be freely accessible once shared within GEOSS, preferably without cost. The costs associated with implementing a cost recovery system are substantial, and as the cost of media goes down and digital distribution increases, the major portion of the cost of distribution becomes accounting costs. In fact, the incremental cost of anonymous FTP file transfer is close to zero.

Secondly, the existing singular emphasis on no cost data sharing for research and education only should be expanded to other applications for a number of reasons. Most importantly, GEO is concerned with applications that are far broader than research and education. For example, the emergency response community that GEO serves would benefit from a no cost principle. The same holds true for activities in other societal benefit areas. In addition, the economic benefits of data sharing, highlighted above, can best be achieved when data is available beyond the research and education sectors. Lastly, a number of countries that participate in GEO, within their respective legal or

⁴ Ideally the provision of data should be free of charge, see G8 Open Data Charter, Principles 3(20) and 5(13). The recovery of the cost of reproduction and distribution is permissible.

policy frameworks already allow cost-free access of their data independently from the purpose of use (the US Landsat, European Copernicus Member States contributions, etc.) DSWG considers this as a highly positive trend that should be promoted on the level of GEOSS Data Sharing Principles.

The third principle replaces a rather vague term “at minimum cost” with a more straightforward “at no more than the cost of reproduction and distribution”. In addition, it introduces the optional “condition of data use” compatible with the GEOSS Data-CORE – “with attribution as appropriate” – that allows the data provider to obligate the user of the shared data to provide information about the owner of the shared data. This also implicitly brings the Principles closer to the Open Data standards, even though there is no explicit mentioning of it within their wording.

Conclusion

DSWG recommendations regarding strengthening Data Sharing Principles to the Executive Committee and the Working Group on the new GEOSS Implementation Plan.

DSWG strongly encourages that the proposed Version 1 of the new Data Sharing Principles is introduced within the new GEOSS Implementation Plan. The main reasons for this are the following:

1. Asserting that sharing data as part of GEOSS Data-CORE is the default standard for GEO elevates the status of this mechanism, as well as its overall importance for the successful operation of GEOSS and achievements of the GEO goals, including expanded commitment to sharing of Earth observations as emphasised in the Vision for GEO 2025 document adopted by the GEO X Plenary;⁵
2. Reference to the term “Open Data” provides context for the interpretation of the use conditions pertinent to data shared as part of GEOSS Data-CORE, as well as brings GEOSS Data Sharing Principles in line with the relevant international, regional, national and organizational developments;
3. The option of sharing data through GEOSS with restrictions on use is presented as a deviation from the default mechanism, with the emphasis on imposing as few restrictions on the use of shared data as possible. This shift in emphasis better recognizes the motivations for GEOSS: encouraging and facilitating reuse of EO data and products, as well as helping make informed decisions within nine societal benefit areas.
4. The definition of Open Data means that data are shared free of charge, for any purpose and to any user. This reflects the current move by many governments towards Open Data and is in accord with the GEO objectives of encouraging data sharing in order to tackle stated societal objectives and promote economic benefits. The current wording of the third Principle that limits free-of-charge sharing to research and education purposes, is less apt to achieve these objectives.

⁵ Online: ftp://ftp.earthobservations.org/GEO-X/GEO-X_MS2_Vision%20for%20GEO%202025.pdf.

In addition to this main recommendation the DSWG would like to draw attention to the necessity to discuss and resolve the following terms used within the Data Sharing Principles:

1. Formulation of the exact interpretation of the *GEOSS Data-CORE* and its inclusion into the explanatory guidelines to the Data Sharing Principles;
2. Inclusion of the approach towards sharing of data through *GEOSS free of charge* as the underlying principle, while interpreting the level of charges for the data if it is impossible to provide them for free, as the "*cost of reproduction and distribution*";
3. Discussion of the term "*product*" used in the first Principle: the current emphasis of developing more ties with the private sector may necessitate either inclusion of the interpretation of this term or its deletion from the wording of the Data Sharing Principles;
4. Make sure that alignment of the interpretation of the *GEOSS Data-CORE* with that of Open Data is not carried in such a way that data currently shared as part of the *GEOSS Data-CORE* may no longer be qualified as such, as this could discourage (active) participation within GEO of at least some of its members. An example of potential interpretational tension is e.g. the condition of registration that is allowed by the *GEOSS Data-CORE* regime, but discouraged to be applied by the G8 Open Data Charter (Principle 3 (21)).

The DSWG hopes for consideration of the proposed revisions of the Data Sharing Principles and is willing to provide any assistance to properly incorporate the necessary changes into the next *GEOSS Implementation Plan*.