

## Data Policy for the IGBP

Data policy has become an increasingly important topic for the IGBP as more of its Core Projects and Framework Activities move from planning to implementation stages. As a program of the International Council of Scientific Users (ICSU) various principles and guidelines already apply implicitly to the IGBP.

Since the International Geophysical Year (1957/58), the International Council of Scientific Unions (ICSU) has maintained a World Data Centre (WDC) system, which serves to collect, store, process as appropriate, and redistribute data. ICSU lays down responsibilities on its constituent programs to ensure the free and open international exchange of data: in summary these are as follows.

ICSU programs shall include data management plans that provide details on which data, and in which formats, shall be submitted by participants to the WDCs so that all data may be shared not only by participants but by all scientists.

It is implicit in the agreements by adhering bodies to the ICSU that national participation in an ICSU program includes the agreement to submit data according to the data management plan.

In 1990, in accordance with established ICSU policies on open and unrestricted data and information exchange, data policies were proposed for the IGBP-DIS. These include the statements:

**"The IGBP places high priority on establishment, maintenance, validation, description, accessibility, and distribution of high-quality, long-term global data sets, including the synthesis or generation of new global data sets," and, "Full and open sharing of the full suite of global data sets, and other data sets needed for global change studies, is the primary objective of the IGBP-DIS" (IGBP Report No. 12).**

Relying on the ICSU and WDC principles the following more detailed data policy principles were proposed and accepted at the IGBP's Scientific Committee in Australia in December 1994.

The IGBP requires an early and continuing commitment to the establishment, maintenance, validation, description, accessibility, and distribution of high-quality, long-term data sets.

Full and open sharing of the full suite of global data sets for all global change researchers is a fundamental objective.

Preservation of all data needed for long-term global change research is required. For each and every global change data parameter, there should be at least one explicitly designated archive. Procedures and criteria for setting priorities for data acquisition, retention, and purging should be developed by participating agencies, both nationally and internationally. A clearing-house process should be established to prevent the purging and loss of important data sets.

Data archives must include easily accessible information about the data holdings, including quality assessments, supporting ancillary information, and guidance and aids for locating and obtaining the data.

International and where appropriate suitable national standards should be used to the greatest extent possible for media and for processing and communication of global data sets.

Data should be provided at the lowest possible cost to global change researchers in the interest of full and open access to data. This cost should, as a first principle, be no more than the marginal cost of filling a specific user request. Agencies should act to streamline administrative arrangements for exchanging data among researchers.

For those programs in which selected principal investigators have initial periods of exclusive data use, data should be made openly available as soon as they become widely useful. In each case the funding agency should explicitly define the duration of any exclusive use period.

IGBP needs to adhere to principles of open access to data sets and availability at low cost, because it is part of ICSU and because if it inhibits the availability of its own data, this could seriously undermine the arguments used to obtain data at lower than normal costs from others.

Data sets falling under the above principles will likely include a wide variety of products including field data, processed remotely sensed data and model outputs. This places major responsibilities on IGBP scientists in terms of making data sets accessible.

The IGBP with the assistance of DIS is considering the following issues in assessing the full implications of these policies:

How will Core Projects decide which data sets will be made available and in what the form they will be distributed?

What are the cost implications of making data available? It would be prohibitively costly for any Core Project or Framework Activity to make literally all of its data available.

What mechanisms will be used to ensure adequate data distribution?

How will long term archiving be achieved? This includes not merely technical issues but also those concerned with how responsibility is assumed and maintained

What will be the relative roles of IGBP-DIS and the Core Projects in these activities?

What other agencies/organizations might be involved to take on some of these responsibilities (e.g. World Data Centre System, WMO Data Centre System etc.).

What are the responsibilities of IGBP with respect to data supplied by others which have usage or copyright restrictions.

There may be significant problems associated with IGBP projects and activities using data whose distribution may be restricted by copyright: specifically to what extent can IGBP carry out its scientific program if it has to rely on data, which can not be freely distributed to substantiate the scientific conclusions.

What should be the privileges of IGBP scientists and programs with respect to any periods of exclusive use for data collected in the name of IGBP?

What will be the process by which we obtain agreement from the IGBP community that they agree to and will adhere to these principles and policy?

In DIS we have been taking steps to address these questions, but clearly it will be a long-standing responsibility of IGBP-DIS to make sure that the IGBP's data policy principles are implemented. Currently IGBP-DIS is conducting a analysis of IGBP's activities to assess the implications of these data policies.

John Townshend