

Guest editorial

Antarctic data management

Antarctic science is inter-disciplinary in character, multi-national in execution, and globally relevant. Data management in this environment must be examined from political, scientific and economic perspectives. The Antarctic Treaty calls on parties to exchange and make freely available scientific observations and results from Antarctica, so establishing the political context for addressing data management. The scientific context arises from the increasingly large and complex issues being addressed, including environmental monitoring and global change programmes, while the economic context considers data and information as the primary assets derived from Antarctic expenditure.

The SCAR-COMNAP *ad hoc* Planning Group on Antarctic Data Management, formed in 1992, has commenced development of a new framework for data management to ensure access to and comparability of multi-disciplinary, multi-national and multi-type Antarctic data. The scientific requirements include knowledge of data existence, availability of meta data, standard data transfer formats and data dictionaries, and provision for data access. Political and economic requirements include the commitment and participation of all parties, and the provision of adequate funding.

The Group has defined a two-stage process: development of an Antarctic Data Directory System (ADDS), followed by the establishment of an Antarctic Database System. The existing International Directory Network established by the US, Japanese and European space agencies provides a suitable technology platform. A key element of the ADDS will be the identification and establishment of 'National Antarctic Data Centres' with responsibility for compiling, maintaining and disseminating 'Antarctic Directory Interchange Format' records. SCAR Working Groups will also have a key role in the process. The use of spatial data as a fundamental organizing parameter in the Directory should enable linkage with the SCAR Antarctic digital topographic database. The implementation plan includes extensive consultation with the Antarctic scientific community, through circulation of a draft ADDS specification later this year, and a workshop in 1994. The current objective is for the ADDS to be operational by late 1994.

The proposal for an ADDS creates a number of issues for the Antarctic community. In addition to the content and technology of the directory, the following questions must be addressed: 1) to what extent should funding for core scientific programmes be diverted to building, maintaining and operating the directory (how should the cost-benefit be measured in political, scientific and economic terms)? 2) who should (or perhaps could) fund ADDS development — SCAR or COMNAP through their members, or a particular country or grouping prepared to make the investment? 3) from where should the directory be managed — a 'neutral' group such as SCAR or an ATCM secretariat, or again from wherever the resources are contributed? 4) will it be necessary (or possible) to go beyond the directory to the second stage of building a database system? Antarctic scientists should contribute to this debate through their SCAR and COMNAP representatives.

Data management is not a very exciting topic when compared to Antarctic science in general. However, a new Antarctic data management framework has the potential to realize significant scientific and economic benefits, notwithstanding the political imperatives. Whilst the scientific and technical aspects will be difficult enough, experience in similar initiatives indicates that the political and economic aspects will be even more challenging.

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