The ICSU World Data System as a Global System of Data Systems

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The ICSU World Data System (ICSU-WDS) primary goals are to ensure the long-term stewardship of quality-assessed data for research and education, and the provision of such data and related data services to the international science community and other stakeholders. New technological options opened by today's management, curation and on-line distribution of multi-disciplinary digital data sets make these goals achievable. The WDS is built as an international federated system of long-term data archives and data related services covering a wide spectrum of sciences. It includes 44 members, among which 38 are organizations dealing directly with data curation and data analysis service. It encourages and enables interdisciplinary data activities, but different disciplines (e.g. seismology, oceanography, astronomy, space sciences, biodiversity, health and social sciences) have developed domain-specific efficient answers to their data challenges. Consequently, WDS will have to evolve as a system of data systems and integration of interdisciplinary data will be dependent on implementation of interoperability arrangements. Although the focus of WDS is on the long-term stewardship of scientific data—so that the value of data holdings might actually increase with time—WDS members must share some overarching principles to achieve the system of data systems. This is realized through promotion of close collaboration between members and more importantly through an accreditation process and certification criteria. For example by the development and adoption of, standards and quality control practices, analysis and metadata services, and data publication services that can be recognized across domain boundaries. The latter will require a strong relationship with science publishers and libraries. Another focus point will be to establish a framework to help scientists in developing a data management plan from the very beginning of science projects and programmes, especially in an interdisciplinary and international context.