# Press release

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## International Experts Call for New Approach to Ensure Challenges to Data Access and Management Don't Slow Scientific Progress

***ICSU study considers revolution in data generation and distribution that has transformed science but raised new barriers and inequities***

**Suzhou, China** –- Complex changes in data production, distribution and archiving—and issues they raise regarding who pays for data, who preserves it and who has access to it—should prompt an international initiative that ensures current and future scientists worldwide will have the information they need, according to a new report on challenges to data management and access presented today to the International Council for Science (ICSU).

The report—written by an expert panel appointed by ICSU — was formally presented today at the ICSU 28th General Assembly in Suzhou, China. It calls for establishing an international scientific data and information forum to promote a more coordinated approach to data collection and distribution. Such a forum could also play a key role in ensuring that scientists in developing countries have equitable access to scientific data and information.

"Data gathering, analysis and distribution has been profoundly and positively changed by quantum advances in computer hardware, software and connectivity and the result is that scientists can have access to more high quality data than ever before," said Roberta Balstad, director of Columbia University's Center for International Earth Science Information Network and chair of the ICSU Priority Area Assessment (PAA) on Data and Information.

"But these new data and information technologies bring with them a series of challenges as well," she added. "For example, we don't always have the necessary legal and regulatory frameworks in place to get the full benefit of scientific data. We lack a coherent approach to preserving and archiving the incredible wealth of information being produced. And the more the access to long-term reservoirs of data becomes central to the modern scientific enterprise, the more it exacerbates inequities between scientists in rich and poor nations."

Balstad and her colleagues on the PAA panel believe ICSU, with its international and multidisciplinary membership, "should assume a leadership role in identifying and addressing critical policy and management issues related to scientific data and information and that it create a new global framework for data and information policy management."

The panel examined a range of issues that affect data generation, quality and access. For example, its report notes that while public sector funding of data collection has been "a major factor" driving scientific progress over the past 50 years, decisions regarding data are often fragmented and taken without consultation with the scientific community. The result in "extreme cases" can be actions driven by political, administrative or budgetary factors that do damage to scientifically valuable data series.

Meanwhile, the panel cautions that as the private sector plays a greater role in amassing and disseminating data, there is a risk that market demand, not scientific priorities, will determine what is collected and preserved and who has access. The panel notes that commercial interest in data collections can lead to license and user fees and intellectual property claims on data that become impediments to research.

The report recommends that data produced commercially or through public-private partnership be provided for research and education purposes either free or at nominal cost. Price and other access barriers to scientific data weigh most heavily on researchers in poor countries. They often lack affordable high-speed internet services and state of the art technologies for digitizing data or the resources for long-term data management."

"A major problem for scientists in low-income countries is their lack of access to scientific publications, both as a means of learning about research in other parts of the world and as an outlet for their own research results," the report observes. Scientists are frequently charged not only to view but also to publish articles. The panel notes that these charges hurt both scientists in developing countries and those in wealthier nations as well who would benefit from better information exchange and collaboration.

Other data-related challenges identified by the panel include the need for developing common criteria, structure and models that can guide institutions in the "permanent preservation of scientific data and information" so that what is amassed today will be available for future generations. There is also a need to identify and rescue data that are "at risk," such as data that are not available in digital formats, are stored on faulty media, or are generated by obsolete software, yet another problem which is felt more acutely in developing countries.

Overall, the panel concludes that "by focusing attention on data and information management for the long term, ICSU will be providing a valuable service to the scientific community now and building a lasting foundation for improvements in scientific research and education that will be of benefit to society as a whole."

**Founded in 1931, the International Council for Science (ICSU) is a non-governmental organization representing a global membership that includes both national scientific bodies (103 members) and international scientific unions (27 members).**

**Through this international network, ICSU coordinates interdisciplinary research to address major issues of relevance to both science and society. In addition, the Council actively advocates for freedom in the conduct of science, promotes equitable access to scientific data and information, and facilitates science education and capacity building.**

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**See also http://www.icsu.org/3_mediacentre/GA.html**