

## **ICSU Committee on Freedom and Responsibility in the conduct of Science (CFRS)**

### **Advisory Note<sup>i</sup> “Sharing Scientific Data, with a Focus on Developing Countries”**

#### **Setting the Context**

In upholding the Principle of the Universality of Science, ICSU promotes full and open access to scientific data, especially when the research is publicly funded. Scientists should carry out research and disseminate their results with integrity and openness to maximise the benefits and minimise the possible harms of science for present and future generations.

This Advisory Note is concerned with the rights and responsibilities of scientists and the world scientific community with regard to sharing data with developing countries, and thereby supports other endeavours and initiatives to enhance data sharing.<sup>ii</sup> It also aims to help scientists in developing countries contribute effectively to scientific progress and reduce global inequality and the brain drain of scientists from developing to developed countries. To do so requires access to shared data.

Although the Principle of the Universality of Science should not be restricted to publicly funded research, this note concerns, primarily, publicly funded scientific data developed or used for non-commercial purposes. CFRS recognises, however, that the issue of private-sector research and data needs further examination and discussion. Scientific data is part of a continuous cycle, in that research results typically constitute or include data that contributes to further research. Sharing data therefore facilitates and stimulates further scientific enquiry and research, whereas a protective attitude may hinder it.

#### **Data Sharing with Developing Countries: Rights and Responsibilities**

##### *Global legal context*

Article 27 of the Universal Declaration of Human Rights affirms that: “Everyone has the right to (...) share in scientific advancement and its benefits”. This includes universal and equitable access to scientific data, which international organisations should strive to ensure for scientists, notably in developing countries.

##### *Legal restrictions*

In exceptional circumstances, national governments may need to restrict such openness for reasons of security, privacy or legal provisions. Such restrictions must be kept to the minimum necessary and justified explicitly. Where possible and appropriate, steps should be taken to balance competing interests, e.g. by anonymising data to protect confidentiality or by developing “public use” versions of data to enable research. In general, data should consistently be shared openly, unless the potential for harm to society is greater than the anticipated benefits.

##### *Internet*

Scientific institutions, governments and other organisations should support initiatives to enhance Internet connectivity with high bandwidth and high performance at affordable prices throughout the developing world, and to provide commensurate access to hardware, software and applications to ensure successful access to and use of data. At the same time, scientific organisations should define structures applicable to setting up databases, so that scientists in countries with low bandwidth Internet on their digital networks can access them

at a reasonable speed. Governments should not hinder the use of the Internet to share scientific data.

### *Data management*

Research funders should provide for full and open access to data at the lowest possible cost, preferably free and online, so that scientists and other users in developing countries can afford to access it and share their own data. The funders should also support the organisation of data in an easily readable and interpretable form as well as the preparation of suitable documentation to maximise appropriate data reuse and, when warranted, long-term access to and preservation of important data.

Research funders in developing countries should, where possible, require that all proposals include provisions for data management and sharing, as well as a specific budget item for this purpose.

### *Capacity building*

Scientific institutions and other organisations should support capacity building for scientists in developing countries to increase their capabilities to develop, manage, disseminate and archive their own data to the fullest extent possible.

Scientists in developing countries should increase their efforts to share data to enhance co-operation in publicly funded research worldwide. Building linkages and networks with counterparts in other developing countries may be especially valuable in terms of capacity building and addressing pressing issues of science and sustainable development.

### *Data visibility and attribution*

Indexing organisations and international networks should work with scientists and institutions in developing countries to improve the visibility, accessibility and usability of their data and related resources to the widest possible extent.

Scientists worldwide should develop more complete data attribution and citation practices to promote better recognition and rewards for data work, and to stimulate disclosure of scientific data, in and from developing countries in particular. Special consideration should be given to the needs of scientists in developing countries in the implementation and evolution of these practices, e.g. with respect to their recognition and acceptance by academic and research institutions in developing countries, journals, science agencies and scientific societies.

Scientists and scientific institutions in developed countries have a special responsibility to respect the rights of their counterparts in developing countries who openly share their data. They should also take measures to ensure that the use of that data is to the maximum public benefit, especially in developing countries.

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<sup>i</sup> This Advisory Note is the responsibility of the CFRS, a policy committee of the International Council for Science (ICSU), and does not necessarily reflect the views of individual ICSU Member organisations. It has been endorsed by the ICSU Committee on Data for Science and Technology (CODATA) and the ICSU World Data System (WDS).

<sup>ii</sup> This Advisory Note benefited from the presentations and discussion at the International Symposium “The Case for International Sharing of Scientific Data: A Focus on Developing Countries” in Washington DC on 18-19 April 2011. This event was organised by The U.S. National Academies’ Board on International Scientific Organizations (BISO) and the U.S. CODATA, under the Board on Research Data and Information (BRDI), in consultation with ICSU CFRS.