

**Report of the
Working Group for Improving Access to Scientific Information in Developing Countries
To the Natural Sciences Committee**

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Period under report: April 2007-April 2009

1. Background

A 1982 UNESCO report states that “assimilation of scientific and technological information is an essential precondition for progress in developing countries”. Enhancing scientific capacity in developing countries is greatly hampered by the inability to access scientific information, including journals, literature and data. Furthermore, science, engineering and technology development cannot be restricted to research and higher education institutions; the long-term development of scientific capacity also depends on a broader social understanding of and appreciation for the sciences.

2. Remit of the Improving Access To Scientific Information Working Group

- 2.1 The remit of the Working Group for Improving Access to Scientific Information in Developing Countries is to assist the Natural Sciences Committee in fulfilling its responsibilities in respect to building scientific capacity through improving access to scientific information in developing countries.
- 2.2 The Working Group’s original mandate and objectives were laid out in its Terms of Reference, which were adopted by the Natural Sciences Committee on 2 May 2007. Under these Terms of Reference the Group initially focused on free/low cost scientific journal and literature access schemes available to developing countries. However, the Committee agreed that its remit should subsequently be broadened to explore other key aspects to improving access to scientific information.
- 2.3 To this end, the Working Group considers various topical issues surrounding access to information in developing countries, including access to research output (literature and data) and science communication.

3. Meetings and Attendance

- 3.1. The Working Group has now held five meetings (30th April 2007, 26th September 2007, 16th January 2008, 28th April 2008, and 28th November 2008).
- 3.2. Working Group meetings are chaired by Roger Elliott, facilitated by the UK National Commission’s Programme Secretary for Natural Sciences (Natasha Bevan).
- 3.3. Attendance at meetings has been fairly consistent over the past two years, with near full attendance at every meeting.
- 3.4. Peter Downes resigned from the Group at its third meeting (January 2008) due to heavy work commitments. Robert Campbell and David Dickson were invited to join the Group at its third meeting (January 2008), bringing with them particular expertise in publishing and science communication.
- 3.5. Individual meetings have also been attended by Alec Boksenberg (Chair, UK National Commission for UNESCO), David Dawson (C&I Committee and its Information Society Working Group), and Ian White (Programme Secretary C&I) – the latter two to facilitate cross-fertilisation between UKNC Committees/Working Groups.

4. Activity

4.1. Access To Scientific Journals and Literature

4.1.1 Low Cost Journal Access Programmes

Journal access programmes play a key role in providing researchers, practitioners, and students in developing countries with essential access to up-to-date literature that they would otherwise be unable to afford due to the high cost of subscriptions, inadequate and expensive distribution mechanisms, declining budgets and currency weaknesses. In June 2008, the Group published a report titled *Improving Access To Scientific Information for Developing Countries: UK Learned Societies and Journal Access Programmes*, which assessed UK scientific learned societies participation in free/low cost journal access programmes, such as HINARI, AGORA, OARE and PERii. Its findings were based on a survey of 40 of the UK's scientific learned societies. A series of recommendations were made for learned societies and journal access programme providers to strengthen provision to developing country institutions and readers.

The report was disseminated to UK scientific learned/professional societies and umbrella organisations, publishers and umbrella associations, journal access programme providers. UNESCO, DFID, related press, and other relevant stakeholders.

4.1.2 Open Access

The Group has also explored the transforming effect that digital technology is having on scientific journal and literature publishing. Publishers have been experimenting with different business models, including 'author pays' and 'hybrid' models. And, in particular, recent years have seen a growing global debate around the issue of open access archives and open access publishing. For the developing world, Open Access (OA) will increase scientists and academics capacity to both access and contribute to world science.

The Group has discussed both 'green road' and 'gold' OA. There has been an increasing number of OA declarations and commitments made (to varying degrees) by governments, public research funding agencies, scientific organisations, and conferences. And a growing number of OA digital repositories – both institutional repositories and centralised subject repositories - and OA journals have been established in recent years. The Group has highlighted OA policies from Wellcome, NIH, UK Research Councils, European Research Council, CERN, Harvard University Faculty of Arts and Sciences, and EU FP7 (pilot project). It has also considered a number of reports on the impact of OA, such as the Biosciences Federation report on UK learned societies and OA, the EC/German National Commission Handbook on OA challenges and opportunities, a (UK-focused) e-journal usage survey by RIN (Research Information Network) and an EU co-funded 3 year project PEER (Publishing and the Ecology of European Research) looking into the effect of systematic archiving on reader access, author visibility, and journal viability.

There is more to ensuring that researchers in developing countries take their place in the global scholarly community than just making 'developed world' content available through low cost journal access programmes and OA. It is essential that research undertaken by developing country scientists is more visible. The Group highlighted existing OA initiatives for developing countries such as Bioline International and AJOL (which provide open access to journals published in developing countries), and has noted that more can be done in this area to encourage readership and authorship from developing countries.

4.2. Access To Data

The Group identified as important the issue of accessing large, international scientific data sets in developing countries and has worked to extend its evidence base on what access is provided in developing countries and what gaps exist. It has sought the views of users (such as those from universities/research units in Rwanda, Uganda and The Gambia), providers (such as Cochran Library), and coordinating bodies (such as CODATA, an interdisciplinary scientific committee of ICSU). The Group has highlighted potential problems with: infrastructure – including internet access and bandwidth; the usability of dataportals; knowledge of databases; the issue of 'reproducible research' and importance of (open source) software to manipulate/analyse data; and restrictions on data with commercial or political significance.

One Group meeting reflected on aspects of intellectual property (IP) – such as publishing copyright (including creative commons licenses) and patenting (especially TRIPS conditions for developing countries). On reflection, the Group decided that it would not focus on broader aspects of IP – such as patenting issues - as part of its remit at the present time.

4.3. Access As A Human Right

The Group has looked at the growing concept of access to science and the benefits of scientific progress as a basic human right. It has considered the following activity/initiatives in this area:

AAAS' Science and Human Rights Programme includes a "Science and Human Rights Coalition" (launched January 2009) networking scientific membership organisations that recognise a role for science and scientists in efforts to realise human rights; an "On Call Scientists" initiative connecting together human rights organisations and scientists offering their expertise; and an "Article 15" project identifying Member State reports detailing measures that have been adopted to realise the right to benefit from scientific progress and fulfil Article 15 of the International Covenant on Economic, Social and Cultural Rights (ICESCR).

UNESCO co-organised an experts meeting on "The Right to Enjoy The Benefits of Scientific Progress and its Applications" held in November 2008, NUI Galway. This is the second such meeting to be convened by UNESCO in association with the Irish Centre for Human Rights and the Amsterdam Center of International Law.

4.4. Science Communication

The long-term development of scientific capacity also depends on a broader social understanding of and appreciation for the sciences. Science communication involves a range of players including journalists, scientists, press officers and parliamentary officers. The Group has focused its attention on science journalism and the importance of promoting best practice for media coverage of scientific issues.

4.4.1 Science Journalism Award

The Group has explored the concept of creating a 'J.G. Crowther' Science Journalism Award for journalists in developing countries.

A concept note was developed and research was undertaken on existing training and reward initiatives in this area as part of a needs analysis. Exploratory discussions were held with the Guardian, British Council, World Federation of Science Journalists (WFSJ) and 2009 World Conference of Science Journalists organisers, and an independent science communication/award consultant.

While there was a positive reception to the need and creation of such an award, the Group agreed that it was unable to pursue the concept any further at this time, primarily due to resource constraints at the UKNC and the close timing of the 2009 WCSJ (to which it was suggested such an award be tied).

4.4.2 Training Workshop on Reporting About Climate Change

The Group recommended that the UKNC jointly sponsor with UNESCO a training workshop on "reporting about climate change" for developing country science journalists. A one-day training workshop will be held in London on 29 June as a satellite event to the 2009 World Conference of Science Journalists (2009 WCSJ).

Science journalists play a vital role in helping to tackle climate change; by reporting on its causes, impacts, mitigation opportunities and adaptation processes, they inform and educate the public and policy makers to better understand the issues at stake and to respond to climate change concerns. The workshop will help developing country journalists to gain a better understanding of the science of climate change, of mitigation and adaptation proposals, and of how to make coverage both accurate and accessible.

Participants will include journalists from developing countries and 'trainers of trainers' from UNESCO-identified Potential Centres of Excellence in Journalism Training in Africa (see below). They will also be given the opportunity to participate in the full Conference and post-Conference trips.

4.4.3 International Conference on Broadcast Media and Climate Change: A Public Service Remit

The Group considered a proposal from UNESCO for the UK to support an international conference on broadcast media and climate change (September, UNESCO Paris). This high-level event will be organised by UNESCO in partnership with UNEP, regional broadcasting unions and other international broadcasting organisations to consider a global consensus to raise public awareness on the challenges of climate change. While the UKNC is unable to provide any financial support, it will draw the Conference to the attention of relevant individuals/organisations (such as DFID) and assist UNESCO in approaching UK experts/participants as and where needed.

4.5. UNESCO Activities

The Group has also consulted with UNESCO Paris to better understand the Organization's range of activities in the area of improving access to scientific information for developing countries. As part of this consultation, Natasha Bevan met with members of the UNESCO Secretariat (Natural Sciences and C&I Sectors) in Paris in March 2007 and March 2008. Current UNESCO activities are as follows :

Encyclopaedia of Life Support Systems (EOLSS); the Avicenna Project (Euro-Mediterranean virtual network); Science Communication Initiative (making BBC Horizon titles available to 41 subscribing countries – *with involvement from the UKNC*); UNESCO-CBA Award (in broadcast media); Model Journalism Curricula (including a module on science communication); Journalism Training Institutions and Potential Centres of Excellence in

Journalism Training in Africa (*with involvement from the UKNC*); proposal for a climate change TV documentary template to facilitate local TV documentary production on the issue; and International Conference on Broadcast Media and Climate Change.

5. Networking and Engaging Others

- 5.1 Working Group membership was reviewed September-December 2007; a decision was made to invite Robert Campbell (Wiley-Blackwell) and David Dickson (SciDev.Net) to provide additional expertise particularly in the areas of publishing and science communication. Additional membership will be further reviewed in the future.
- 5.2 The Group's work has been brought to the attention of UNESCO HQ in Paris. The Group has liaised with the Natural Sciences, Social and Human Sciences and C&I Sectors. The UKNC is directly partnering with UNESCO on a climate change training workshop (*as 4.4.2 above*).
- 5.3 The Group has engaged with a number of other organisations including ACU, Aptivate, British Council, CODATA/ICSU, IIED, INASP, SciDev.net, Research4Life, UK scientific learned societies and professional bodies, various publishers, WFSJ and 2009WCSJ.

6. Future Work Plan

A work plan outlining the Group's proposed work programme for the next year is being devised.

Appendix 1: List of Working Group Membership

CHAIR: Professor Sir Roger Elliott

ICSU / University of Oxford
Member, Natural Sciences Committee

Dr Lloyd Anderson

British Council
Member, Natural Sciences Committee

Dr Stephen Benn

Royal Society of Chemistry
Member, Natural Sciences Committee

Robert Campbell (*from 16 January 2008*)

Wiley-Blackwell Publishing

Professor Clive Coen

Royal Institution of Great Britain / King's College London
Member, Natural Sciences Committee

David Dickson (*from 16 January 2008*)

SciDev.net

Professor Peter Downes (*to 16 January 2008*)

Biosciences Federation
Member, Natural Sciences Committee

Professor Robert Kirby-Harris

Institute of Physics
Member, Natural Sciences Committee

Professor Richard Reece

Biochemical Society
Member, Natural Sciences Committee