

Towards a DFID Research Policy on Open Access

“The field of knowledge is the common property of all mankind”

– Thomas Jefferson, 1807 –

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Summary

This report ‘scopes’ how DFID Research could take forward an open access policy that will lead to greater public access to the research outputs it finances. It is not a policy for DFID; it provides some building blocks for such a policy.

The report provides a snapshot of the current situation across a wide range of situations. It is based on a series of face to face and electronic exchanges with people involved in research access and communication. It also draws on the large online literature and debate – but can hardly do justice to all the richness encountered.

Five major justifications for DFID Research to push open access to research results are presented:

1. **Open access reinforces the free circulation of knowledge**, which has long been the lifeblood of science and research.
2. DFID and its partners, due to their development goals, have moral as well as practical reasons to promote **open access as an empowering strategy** for researchers and others in developing countries.
3. Research supported by DFID has the potential to become international public goods with high social benefits – but only if the goods are accessible for others to apply. **Open access can increase the potential for uptake and use of research outputs.**
4. Current ‘closed access’ business models tend to make journal subscriptions and other outputs unaffordable. This affects all institutions, but particularly those in developing countries. **Open access cuts such subscription barriers.**
5. **Open access will help DFID itself to make use of the research** it has financed.

The report also highlights some open access views and concerns among DFID research partners; it points to a few cases and examples; and suggests some directions where DFID Research could make a difference¹.

These directions for DFID, in summary (see page 16 for details), are:

1. Take a **broad ‘open knowledge’ perspective**. It is about more than journal articles.
2. In general:
 - Require systematic **deposit of outputs** and metadata in open archiving systems and repositories, including in a ‘UKPubDev Central.’
 - Require **appropriate acknowledgement** of DFID funding.
 - Encourage use of **‘open licenses’** that recognize authorship and enable reuse.
 - Encourage use of **open formats and standards**.
 - Encourage the development of **open platforms and initiatives**.

¹ Background material and further resources are available at <http://openr4dfid.wikispaces.com>.

3. For different categories of outputs:

- Encourage publication in **open access journals** (or hybrid journals).
- Provide funds for any **open access charges**.
- Encourage authors and publishers to **license articles for reuse**, with attribution.
- Establish a complete '**UKPubDev Central**' repository of DFID-supported outputs.
- Capture **metadata** centrally.
- Deposit outputs in proper institutional or subject **repositories**.
- Require that outputs and metadata **acknowledge DFID** sponsorship.
- Require that significant **web content is permanently archived** and accessible.
- Encourage the use of **social media** to report and communicate research.
- Require that projects develop a **data curation and accessibility plan**.
- In health and medicine, DFID to **join the UK PubMed Central (UKPMC)**, adopting its policies on deposit and licenses already established.

4. In addition:

- Adapt **DFID research contracts** to mandate these provisions.
- Require each funding proposal to present an '**accessibility plan**' or framework.
- Include **funds** for open access in proposed budgets.
- Include accessibility in regular **reports** of projects.
- Encourage content contribution to any **specialized repositories** or services.
- **Support preferential access initiatives** for developing countries.
- Support **open access journal publishing** initiatives in developing countries.
- Contribute to **awareness raising** efforts that explain open access and how it helps DFID and its partners achieve their scientific and developmental goals.
- **Engage other research funders**.
- Create an '**open access to R4D**' fund to support and recognize initiatives.

An outstanding question is if and how such a policy should be applied retrospectively. It is important that current workflows and behaviours are quickly changed to ensure that all future outputs are captured and can be accessed in posterity. Actions are also needed across the community to ensure that what has already been created will remain accessible. Perhaps the OA2R4D fund can be used to support proposals to retrofit past efforts.

Why Open Access

Open access on its own is not a sufficient justification for DFID to support it. Some of the aims and drivers of open access that DFID could emphasize in its policy include:

A legal justification can be found in the new Lisbon Treaty on European Union where Article 179² states: “The Union shall have the objective of strengthening its scientific and technological bases by achieving a European research area in which researchers, scientific knowledge and technology circulate freely.” This **free circulation of scientific knowledge** is an important anchor used by the European Commission³ in its open access pilot and this principle underlies many open access advocacy efforts.

The creation of **international public goods** is a common aim for research investments using public funds. In the CGIAR, for example, it has been argued⁴ that “public goods have high social benefits that the private sector has no intention to deliver ... the international part is that public goods will have products or impacts across borders.” The cross-border benefits of these public goods depend, among other things, on their “spillover potential — how well does the PG travel?” A strong argument for open access is that it will help the outputs and benefits of publicly-funded research to travel. Open access is a good practice that is likely to increase **the potential for uptake and use of research outputs**.

DFID’s empowering and capacity building focus differs from other (UK) research funders and here the justifications for open access are powerful. Development, in general, is about creating a more equal playing field for developing countries, in which access to knowledge and the fruits of science is a critical dimension. At a more operational level, DFID research is frequently carried out with partners in developing countries, on the problems they face. It is a matter of principle as well as practice to ensure that the results generated by such projects (often by people in developing countries) are as accessible in their countries as they are to well-funded institutions in the UK and elsewhere. Open access in such situations can be seen as a **core development value that reinforces the empowering roles of DFID Research** and the organizations it supports.

Reducing journal subscription costs⁵ is also an important factor for libraries where open access is expected to **cut or reduce fast growing subscription fees** (replacing them with an author- or funder pays model). It is argued that institutions in developing countries would gain massively from open access models as they consume more articles (that would become free) than they produce (which would need to be paid for).

A final justification is that **open access will help DFID itself to make use of the research** results it has financed. Like other institutions worldwide, DFID does not subscribe to all journals, and its staff can only access a part of the scientific literature.

² European Commission. 2008. Consolidated versions of the Treaty on European Union and the Treaty on the Functioning of the European Union. Official Journal of the European Union, Vol 51, 9 May 2008. <http://eur-lex.europa.eu/JOHtml.do?uri=OJ:C:2008:115:SOM:EN:HTML>

³ http://ec.europa.eu/research/science-society/open_access/

⁴ Ballantyne, P.G. 2008. Making research public and international. R4D Blog.

<http://r4dconsult.wordpress.com/2008/12/02/international-public-goods-research>. See also: Ryan, J. 2006. “International Public Goods and the CGIAR Niche in the R for D Continuum”, IN: Positioning the CGIAR in the Research for Development Continuum. Rome: CGIAR Science Council. <http://bit.ly/kmfiG>

⁵ Average 2008 journal subscription prices range from \$1089 (agriculture) to more than \$3000 (physics and chemistry). See: Van Orsdel, L.C. & Kathleen Born. 2009. Reality Bites: Periodical Price Survey 2009. *Library Journal*. <http://www.libraryjournal.com/article/CA6651248.html>

Introducing Open Access

“It’s been touted as the liberator of information that wants to be free, the arbiter of shared intellectual property rights, and an engine that can drive discovery, invention, cures, and economies. It has also been vilified as an assault on capitalism, a catalyst for the collapse of responsible publishing and the rise of junk science, and a naïve invention of some pointy-headed idealists who have no idea how the real world works. ‘It,’ of course, is open access.”
Van Orsdel and Born (2008)⁶

‘Open Access’ applied to scholarly and scientific communication is a relatively recent phenomenon. It started from more philosophical beliefs that scholarly and publicly-funded research outputs should be made freely accessible (especially with the spread of affordable ICTs and the Internet). In the 1990’s, the crisis in library funding brought renewed attention to a publishing model that offered an alternative to expensive journal subscriptions. It has since spread, attracting research funders and sponsors eager to ensure that the research they funded was also accessible to readers who could make use of it.

The open access ‘movement’ has gathered momentum, led by a group of champions and initiatives that help to develop the business models and the tools to make open access possible. It is mainly oriented towards peer-reviewed journal articles that are typically purchased by libraries for their institutions. The basic notions can also be applied to other types of research output – books, reports, images, etc.

Budapest Open Access Initiative (2002)

“The literature that should be freely accessible online is that which scholars give to the world without expectation of payment. Primarily, this category encompasses their peer-reviewed journal articles ...”

By “open access” ... we mean its free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself.

www.soros.org/openaccess

Today, the main routes to open access have been consolidated around two main pathways:

- The first is ‘*open access publishing*’, where the costs of publishing are covered by an author, a funding body or some other device, instead of by the readers or their libraries. This type of publishing is offered by open access journals that are free to view. Increasingly, authors can publish in a ‘hybrid’ journal where a subscription-only journal offers authors an option to pay for their article to be made available open access. Such open access publishing where the reader is free to view the content is also referred to as ‘gold’ open access. The access is immediate.
- The second approach is ‘*self-archiving*’ where authors deposit digital manuscripts in repositories or archives. These can be the repository of an institution (normally where

⁶ Van Orsdel, L.C. & Kathleen Born. 2008. Periodical Price Survey 2008: Embracing Openness. *Library Journal*. <http://www.libraryjournal.com/article/CA6547086.html>

the author is affiliated) or a subject archive set up by a third party. The details of what can be deposited and when varies across publishers and journals. Such ‘self-archiving’ is also referred to as ‘green’ open access. The access is usually delayed depending on the agreement with a publisher.

Other key notions associated with this journal article-oriented approach include:

- Open access ‘*mandates*’ where an institution will require that its staff deposit a digital version of their research outputs or articles in a repository set up by the institution. Such mandates often reflect an institution’s interest in wider access to (and visibility of) outputs as well as their need to capture information on research outputs to fulfil management, assessment and reporting requirements.
- Open access ‘*policies*’ of research funders that require, to varying degrees, that the outputs are made open access (green or gold). Like the research institutions, the funders are often motivated by a concern to ensure that ‘their’ research is accessible to their target audiences and other constituencies, including themselves.
- The adoption of *open standards* (especially for metadata) by open access repositories and publishing platforms that allows the content to be globally harvested and queried across the Internet and through freely-available search facilities.
- Especially for articles published by commercial publishers, ‘*open licenses*’ are important to allow people to view and re-use the original article. Publishers often grant permission to authors to deposit their works in a repository, but not for the repository or others to do anything more with the article.

Open Access represents a new business model for publishing, in which the costs of publishing are no longer met by readers and viewers, but by the authors and their sponsors.

Beyond journals and articles, the same principles of open publishing, deposit, and licensing can be applied to other outputs. Where the outputs are produced and published by a research institution, open access can be more a matter of policy and workflows. Some types of outputs pose other challenges: research data is recognized as needing attention, but the pathways are complicated. Images and video pose other challenges. Anything published by a third party requires negotiation and has financial as well as intellectual aspects.

By some definitions, open access that allows articles or other content to be viewed by anyone, across the Internet for example, is insufficient.

‘Open knowledge’ requires that the outputs is both downloadable *and* is licensed to be reused.

Open Knowledge Definition

‘Open knowledge’ is any content, information or data that people are free to use, re-use and redistribute -- without any legal, technological or social restriction.

The main principles are:

- Free and open **access** to the material
- Freedom to **redistribute** the material
- Freedom to **reuse** the material
- **No restriction** of the above based on **who someone is** (e.g. their nationality) or their **field of endeavour** (e.g. commercial or non-commercial)

www.okfn.org/about

Accessibility of Research Outputs

How accessible are the outputs that DFID funds? Despite there not being an official open access policy or DFID-funded research, many outputs are already free to access online. This is especially true for more traditional 'self-published' reports, papers, briefs, etc of different projects and organizations.

They are most often published, in PDF or HTML formats perhaps, on web sites. Some are deposited in the institutional repository of a host organization (this seems not to be standard practice however). Some are deposited in other repositories like R4D or ELDIS – depending on the project. Many are indexed through information services (R4D, ELDIS or ID21 for example) as part of their proactive information gathering.

More and more multimedia outputs like photos, video and PowerPoint are also being shared online – again on project web sites or on services like YouTube, Blip, Flickr, or Slideshare. Some journal articles in 'closed' journals are also accessible.

Commendable as these efforts are, many outputs are not easy to identify or easy to access:

Individual projects may or may not have (complete) databases of outputs; these in turn may use accepted standards that allow easy access; the outputs are often uploaded to the web without helpful metadata or indexing anywhere else; some outputs are managed through the research process (by authors) while others are done by communication staff; existing repository systems of a host organization may or may not be used. In general, much more attention seems to be given an output's creation than to its accessibility and communication.

Moreover, while the outputs are free to view or download, they are not free to (easily) use. Licensing may be restricted, formats may be proprietary⁷, and content may be locked as view only. Beyond open access therefore, there is much to gain from improved information and communication management practices in general.

Each project has its own approach to information and communication and it was not possible to survey all of them.

However, we are able to draw on a couple of examples, or cases.

The Young Lives⁸ Project at Oxford is perhaps a good illustration (see table). It produces a range of different outputs, publishing many on its own web site (and in the Oxford University repository).

Young Lives Jan 2007 - July 2009			
output type	Open access	Closed access	% open access
Audio visual and other	7	8	46.7%
Books and book chapters	1	2	33.3%
Conference papers and presentation	3	42	6.7%
Country reports and summaries	8	0	100%
Journal articles	8	10	44.4%
Media and press work	11	24	31.4%
Policy briefs	9	0	100%
Student research papers	6	0	100%
Technical notes	16	0	100%
Working papers	18	0	100%
Total	87	86	50%

⁷ See <http://www.openformats.org> for further information.

⁸ <http://www.younglives.org.uk>

Types of Research Outputs

What kinds of outputs are we talking about? What needs to be made accessible?

In its performance measurement system, the CGIAR suggests that “output targets are deliverables in the following categories: materials, policy strategies, practices, capacity, and other kinds of knowledge.”

The Young Lives RPC funded by DFID categorizes its outputs as: audio visual, books and book chapters, conference papers and presentations, country reports, journal articles, media and press materials, policy briefs, student research, technical notes, and working papers. Other people met mentioned that they produce videos, maps, photographs, CDROMs, posters, datasets, software, web sites, newsletters, magazines, and increasingly various ‘social’ outputs like blogs and wikis.

While the range is broad, in practice we can identify 5 main groups for DFID to focus on:

- 1 Peer reviewed articles, books published by third parties
- 2 Reports and publications produced by the project or institute
- 3 Data sets
- 4 Images, video, slides and other media
- 5 Social media (e.g. wikis, blogs, etc)

According to Caroline Knowles⁹ of Young Lives: “The policy briefs, student papers, technical notes and working papers are of course all published by us so it’s easy to make them all open access on our web site (and through ORA when we get round to it). And I am surprised at the proportion of open access journal articles - but that could be skewed because we edited a special issue of an open access journal and we have a lot more in the pipeline (submitted but not yet published) that I am sure will be limited access for a couple of years after publication.”

A 2008 study for the CGIAR¹⁰ showed that, overall, the accessibility of published outputs was lower than would be expected (see also Annex 3). Most self-published outputs could be tracked down, often in full (not always easily). Most third-party published outputs could be located on the internet somewhere, but up to 80% could be closed access.

These illustrations show that outputs from research that pass through third parties - publishers of journals and books and perhaps other media - are more likely to be 'closed' or limited access.

A range of licensing options is used on self-published outputs, with traditional copyright, all rights reserved and a request for acknowledgement being the most common form encountered - with a few exceptions.

One area of concern is the issue of **longer term preservation and accessibility**. Particularly where projects are using their own web sites and platforms as communication and dissemination tools and are not systematically archiving content elsewhere, it is quite possible that much content available today will not be there tomorrow (see Forest Research Programme box).

⁹ Personal communication, July 2009

¹⁰ Ballantyne, P.G. 2008. Making CGIAR Research Outputs Available and Accessible as IPGs. Paper for CGIAR Agricultural Research Public Goods Workshop, Maputo, Mozambique, 27 November. <http://bit.ly/Z5t5z>

Forest Research Programme: Preserving the Past for the Future?

In forestry, long-term data and source of information are particularly crucial: Trees have a long life cycle and long time series are needed to draw reliable conclusions. Today, some 40 years DFID-funded forest research outputs and associated documentation were almost lost (in print format); digital outputs do seem to be lost. Preservation is unfunded.

Between 1966 and 2006, the DFID-funded Forest Research Programme comprised some 330 separate projects and generated large quantities of documentation. After the Programme ended, the print archive (some 12,000 documents, 350 meters of shelf space) was transferred to / rescued by the Oxford Forestry Institute. According to Roger Mills at OFI: “There is/was a comprehensive index to the collection but it was outsourced to a commercial company who took it down when they stopped being paid and won’t release the data.”

The former web site of the programme - www.frp.uk.com is no longer accessible online – though some pages can be seen at http://web.archive.org/web/*/http://www.frp.uk.com.

The last 14 March 2007 FRP home page states: “The Commonwealth Forestry Association accepted FRPs invitation to host this web site following its closure in March 2006.” (<http://web.archive.org/web/20070314021733/http://www.frp.uk.com>). Today, there is no sign of the FRP materials on the CFA web site at www.cfa-international.org.

Sources:

Mills, R. 2006. Preserving the Past for the Future: The Importance of Archival Information in Forestry. *Issues in Science and Technology Librarianship* (46). www.istl.org/46-suppl/article9.html

Mills, R. 2006. ‘Preserving the past for the future: ensuring a sustainable information infrastructure for forest research.’ Unpublished report for the Forest Research programme (Project ZF0206). Oxford: OFI.

The whole issue of data and datasets is very challenging¹¹. Policies and actions are emerging in mainstream science¹² and public¹³ discussions where data is coming to be seen as one of the huge opportunities. The OECD has issued a white paper calling for the development of standards to make data more accessible¹⁴. The many data-intensive initiatives on the Internet that are breaking new ground in terms of data presentation and visualization are creating demands for data to be made accessible and reusable.

This is however an area where capacities are spread thin and where policies are complicated for DFID by cross-border aspects and ownership of data. The Young Lives Project illustrates one approach¹⁵ – they deposit data with the UK Data Archive. Other projects seem to have less clarity in this area.

¹¹ A recent article in Nature investigates some of the issues and challenges. See: Nelson, B. 2009. Data sharing: Empty archives. *Nature*, 461 (7762): 160-163. <http://dx.doi.org/10.1038/461160a>

¹² See <http://www.gapminder.org/> as an example; see also UK Research Information Network work on scientific data: <http://www.rin.ac.uk/taxonomy/term/22>

¹³ See for example the Free Our Data campaign - <http://www.freeourdata.org.uk/>; in the USA, see www.data.gov – which aims to increase public access to high value, machine readable datasets generated by the Executive Branch of the Federal Government.

¹⁴ See: Green, T (2009). We Need Publishing Standards for Datasets and Data Tables. OECD Publishing. <http://dx.doi.org/10.1787/603233448430>

¹⁵ See: <http://www.data-archive.ac.uk/findingData/snDescription.asp?sn=5307&key=Young+Lives>

Finding (Open) DFID-funded Outputs

Despite the existence of R4D that captures metadata and full text of many DFID-supported projects, it would be difficult for someone inside DFID, or anywhere else, to identify and obtain a complete set of outputs funded by DFID on a topic¹⁶. It is difficult even to get a sense of scale – how many research outputs has DFID supported?

In July 2009, R4D listed some 29,000 outputs in its database. This is a mix of full text and metadata. Annex 2 shows a distribution of these outputs by type and subject area. It is not possible to know how complete this is.

Searching PubMed Central for the term 'DFID' in the acknowledgements field produces some 240 results (all open access).

Searching the keyword 'DFID' in www.scirus.com (a service from Elsevier), with a limitation to 2008 and 2009, results in some 880 items: 355 are in journals (which we assume are mostly closed, except where they are from Biomed Central or PubMed Central); Some 525 are in repositories and other web systems (mostly open). In both cases, the items show up because 'DFID' is somewhere in the items found, which does not necessarily mean that it was sponsored by DFID. This seems to suggest that some 60% of the records found are open.

A search¹⁷ in Thomson Reuter's Web of Science (WOS) for DFID-supported articles published in 2008 and 2009 results in 125 articles (R4D finds 223). Of these 125 articles, 88 are in journals of publishers that do not have an open access model. Some 70% of these articles seem to be closed.

Besemer suggests that these figures are rather low and many articles supported by DFID must be missing (perhaps DFID was not acknowledged). Alternatively, many DFID funded projects are publishing in journals not listed in Thomson. This matches data on publication outputs from the CGIAR (see Annex 3) that show, on average per year, 1 peer-reviewed article in a Thomson journal per scientist per year; and 1 peer-reviewed output in a non-Thomson publication¹⁸.

It seems impossible to identify, even for a classic output like journals articles, how many DFID has supported, where they are, and what proportion might be openly accessible. If we look across other outputs, especially data, the challenge is even greater. This is not a situation unique to DFID; the open access pilot at the European Commission (DG Research) is also intended to address this issue.

¹⁶ www.research4development.info. It is not a requirement that DFID-funded projects to deposit outputs or metadata to R4D. It is encouraged.

¹⁷ I am indebted to Hugo Besemer at WUR for this assistance.

¹⁸ Interestingly, some related work with the CGIAR shows that publishing in a Thomson journal ensures that the full text is online somewhere, usually closed access, while other journals not ranked by Thomson may not even make a digital version available, open or closed.

Open Access Issues and Concerns

One issue concerns the scope of 'open access.' Open access advocates typically concentrate on opening up the articles in closed journals - a rather narrow definition. Ensuring that other types of outputs are also 'open' and 'accessible' is not usually part of this discourse.

The Wellcome Foundation, for example, has concentrated its efforts almost entirely on journal articles. It assumes perhaps that other types of outputs are already quite accessible, or that access to journal articles is the most important problem to tackle (in medicine). They do however require that grantees have an accessibility plan for the data they collect.

Yet journal articles are not seen by all the people met for this study as the most important output from a communications perspective – more so perhaps for researcher careers. The concern among many respondents is that a policy concentrating on journal articles will drive attention – and resources – away from other communication tools and strategies.

The Wellcome approach to change the publishing model so that all costs of (open access) publishing are included in the research process would seem to meet these concerns.

Since different subjects and projects areas publish differently, it was argued that we should be careful not to take the medical/health approach as representative of all sectors. Some subject areas have a much greater reliance on papers than articles (See Annex 2 for a breakdown of R4D outputs by category and subject).

From a practical point of view, it is clear that the workflows for different communication outputs involve different people. Making the whole range of reports, papers and other publications open access is more straightforward in that the projects have control over these outputs. The workflows around journal articles and books, aside from the third party publishers, are usually led by the authors/scientists, so changes in this area will require their buy in and behaviour changes.

Finally, there is a large awareness deficit. The science and communication challenge are already extensive so open access is hardly on anyone's radar. It is often viewed as a potential future burden instead of an added value.

Approaches of Other Funders

Very few development research funders seem to have development policies in this area. IDRC and DFID both capture and disseminate outputs they fund through a digital library (IDRC) and the R4D portal (DFID). Neither captures all outputs. The Netherlands has several initiatives for both research and development outputs.

Several different approaches of funders can be determined.

The UK Research Councils (www.rcuk.ac.uk/access), for example, basically call for research papers and articles to be deposited in suitable repositories. It's up to the authors and institutions to organize themselves and liaise with the publishers.

The Wellcome Foundation goes much further. It requires that articles are deposited in the UKPMC (<http://ukpmc.ac.uk>) database (by publishers or authors). It also requires that paid for open research papers are licensed so they may be freely copied and re-used. The Foundation provides additional funds to grantees to ensure they can pay the publishers fees for this open access and licenses to re-use. This has required the Foundation to be very proactively involved with the publishers and in supporting the UKPMC platform. More staff time than originally expected has also been needed to monitor and 'police' these various activities. Their vision is not just that articles are deposited and accessible, but that added value services can be built on top of the content and the repository. It is notable that it only focuses on peer-reviewed journal articles.

Many institutions - especially universities (though NERC¹⁹ for example has such a repository for its own outputs) - are also establishing archiving policies and mandates²⁰ that require their staff to deposit papers in repositories set up for this purpose. The recent UCL decision (<http://eprints.ucl.ac.uk>) was one that got large publicity. This is obviously easier where staff employment contracts already give the institution some ownership of outputs (not always the case, e.g. at IDS). There are still many workflow problems concerning who actually does the depositing, who raises awareness with authors (who usually actually negotiate with publishers), and getting the incentives right to 'populate' the repositories.

DFID has so far required/encouraged projects funded by CRD/Policy and Research to deposit various types of outputs in the R4D portal (not journal articles - though metadata can be included). So far, the portal is not 100% comprehensive. It has a mix of outputs submitted by grantees as well as information generated or compiled by the portal managers. Some projects submit content to R4D as one of their archives in addition to publishing outputs on their own web sites.

In the Netherlands, WOTRO, the Dutch Science for Development funding agency, has not yet developed an open access policy. Yet there are several open access initiatives part-supported by WOTRO. Search4Dev (www.search4dev.nl) is an online library for digital publications of Dutch development organizations (NGOs mainly). It is technically a subject repository whose content can be harvested using the OAI-PMH protocol; contributing organizations are advised to use creative commons licenses. It fills a gap in the coverage of outputs from development organizations – academic and research groups in the Netherlands mostly run institutional repositories that can be harvested, for instance by the 'Global Connections' and 'Connecting Africa' harvesters of the Development Policy Research Network (www.dprn.nl) – also associated with WOTRO.

¹⁹ www.nerc.ac.uk/about/access/repository.asp

²⁰ www.eprints.org/openaccess/policysignup

IDRC in Canada recently set up a 'digital library' to be a repository and dissemination vehicle for the outputs it has financed²¹. It contains both metadata (on reports that are not open) as well as full digital versions of documents and other outputs sent to IDRC as part of grantees regular reporting procedures²². It does not require that grantees publish under OA provisions nor that they deposit or archive outputs in their own repositories²³. It seems to be close in model to R4D. It uses the established project reporting and grant management system to capture digital outputs (metadata and digital texts).

The European Commission FP7 research programme recently initiated an open access pilot for a proportion of their funding²⁴. It requires that papers and articles are deposited in an online repository (presumably an open one) and that authors make their best efforts to ensure open access to these articles. They have developed substantial guidelines and supplementary information to help projects comply with the new mandate (if a grantee does not have a suitable repository, they can deposit in an EC repository). The legal contract documents for such projects were adapted to facilitate this.

One approach focuses on journal articles only. Another aims to make all outputs accessible. Data is an area where policies and standards are being developed; the Wellcome approach is to require grantees to plan how their data will be made accessible.

'Just' getting outputs so they can be viewed and downloaded can be extended, through attention to licenses (as Wellcome does), to ensure that rights of re-use are also available.

Authors can be required to deposit in any suitable repository, with permission from the publisher. Or they can be required to publish in a designated repository or repositories.

Funders can directly negotiate with publishers (Wellcome), or leave this to the grantees and their institutions.

Compliance and policing vary accordingly, and need investment from the funder. Funders can also invest in specialized services/platforms that produce additional services (such as harvesting, federated access across repositories, etc). The more prescriptive - and effective - a funder wants to be, the more effort and investment it seems will be needed.

Funders' Approaches

- Require/encourage deposit of articles in a repository [RCUK / DGRsearch / UCL]
- Require paid for (if needed) open access AND deposit articles in named repository and re-use license from publishers [Wellcome].
- Require deposit of project outputs through grant-management cycle [IDRC]
- Encourage posting of project outputs to R4D [DFID]
- Support set up of specialized development research harvesters [WOTRO]

²¹ See <https://idl-bnc.idrc.ca/dspace/>; and an article describing the approach: <https://idl-bnc.idrc.ca/dspace/handle/123456789/37111>

²² Copyright permissions are required for all digital content in the IDL. Researchers who have received IDRC research funding since January 2008 have provided IDRC with permissions in the contract signed with the Centre. It is also seeking permissions for the retrospective collection. Source: Barbara Porrett, Personal communication

²³ The Centre's upcoming Open Access Policy will likely encourage funding recipients to publish in OA journals but not necessarily require it. Beyond its current scope, the need to capture and support data is high on IDRC list of priorities. Source: Barbara Porrett, Personal communication

²⁴ http://ec.europa.eu/research/science-society/open_access/

Pathways to Accessibility

While previous sections paint a rather gloomy picture, there is much that is positive to build upon and learn from. This section spotlights some promising approaches that illustrate how research knowledge is being made openly accessible.

The problems of developing countries to access scientific journals have been alluded to. Some preliminary analysis of the accessibility of journals articles by CGIAR centres indicates that only 35% of the articles, on average, are open access. For organizations using AGORA, they can openly access an average of 59% of the same articles. So publishing in journals that are also in one of the Research4Life or PERI programmes does extend accessibility to some audiences.

INASP (www.inasp.info) is introducing the following changes: First, to adopt an open license that encourages non-commercial uses of all INASP outputs, with attribution. This will be applied on the web site, training materials and publications. Second, to ensure that all of its outputs are digitally available online. Third, to capture and organize outputs in a repository system that is internationally compliant in terms of standards. Fourth, to adopt open metadata to describe its outputs. For its journal publishing projects, that enable and encourage open access publishing, it uses the open source OJS application.

IRRI (www.irri.org) recently changed its copyright policy which, in part, reads, “IRRI will release its information products (software, documents, multimedia, data), as much as possible, under a suitable open content license. Such license shall allow copying, distribution, and (usually) the creation of derivative products; prohibit commercialization; and require attribution as well as the release of derivative products under the same license as the original product was released by IRRI, hence, some rights reserved.” It applies this Creative Commons policy across its web site and uses it on its photos and videos on www.flickr.com and www.youtube.com respectively. It also made all its books available in full text on Google Books (<http://books.irri.org>).²⁵

The **Conservation Commons** is the expression of a cooperative effort of non-governmental organizations, international and multi-lateral organizations, governments, academia, and the private sector, to improve open access to and unrestricted use of, data, information and knowledge related to the conservation of biodiversity, with the belief that this will contribute to improving conservation outcomes. At its simplest, it encourages organizations and individuals alike to ensure open access to data, information, expertise and knowledge related to the conservation of biodiversity.

Beyond the core open access community, there is a broad community addressing similar issues and concerns from different perspectives.

The various 'commons' are good examples - creative commons, science commons, aquatic commons, conservation commons, etc. There is also a family of other 'open' approaches - openscience, open development, open data, open content, etc. There are also groups working at sector level (CIARD in agriculture) or with a focus on open educational resources (learning materials, courseware etc), on data, on spatial/geo data, on aid information and data (IATI), on standards, on repositories, and on wider 'freedom of information/data' issues concerning the general public. This is a broad set of interests, with much in common at the higher level. It offers much potential for innovation and to address the issues from different directions.

²⁵ See: IRRI science more accessible with open licenses and social media. IAALD Blog: <http://iaald.blogspot.com/2009/05/irri-science-more-accessible-with-open.html>

Science for Impact - Extending the Accessibility of CIAT Research

During its 2009 knowledge sharing week the Director General of CIAT in Colombia posted the following to the CIAT Blog:

In the short term, I would like to see us consolidate available knowledge information and data in CIAT, investing in actions to maximize the accessibility of our work. What might this include?

- I would like to see us use 'open' as the default setting to share our research outputs. We can adopt a suitable 'creative commons' license for all of our Center-produced outputs.
- Where we publish elsewhere, we need to ensure that copyright agreements with publishers allow us to retain CIAT rights to re-use the publications and for us to deposit them in our open repositories.
- We also need to look at our agreements with partners, collaborators, funders and others to ensure any outputs they generate are also published and deposited under similar licenses.
- We urgently need an 'all of CIAT' approach and strategy to guide information, knowledge, data and communication policies and investments.
- We must deposit all CIAT research outputs in publicly-accessible repositories where they are permanently available and can easily be found and re-used. Some of our internal repositories need to be reviewed and migrated outside our intranet to be publicly accessible.
- Many of us need to brush up our skills in this area. I would like to see concrete activities that equip staff to become 'smarter' communicators and sharers throughout the research cycle.
- We can gain a lot from social media like blogs and video that can increase our 'social footprint' – beyond words and text!
- We should also continue to support other innovative applications, such as geo-spatial applications where we have a lot already to build on. There may be other applications like mobile devices or participatory video that are worth exploring.
- We need to look at our web presence – our main web site should offer gateways to CIAT knowledge, with appropriate mechanisms for decentralized content management and editing.
- A recurring theme is the incentives – why should staff engage in all of this? I will propose that we look at our personnel systems to see how we can encourage and recognize activities that result in open and accessible, as well as high quality, research.
- Finally, we will need sufficient bandwidth in all of our offices to ensure we can indeed support some of these new kinds of 'e-science.' Appropriate use of this bandwidth will be encouraged.

Source: <http://ciatlibrary.blogspot.com/2009/05/science-for-impact-extending.html>

Directions for DFID

There is much that DFID can do to promote and ensure that the research outputs it funds are widely and openly accessible. The major steps are as follows:

1. Take a broad 'open knowledge' perspective that promotes open access to all outputs and results of the research that DFID supports, in whole or in part. This should encompass any output 'published' by a recipient of DFID research funds (reports, presentations, papers, posters, images, video, audio, training materials and courseware, data, datasets, databases, digital platforms, software, web sites, ...) as well as any outputs published for a DFID-funded activity by a third party (books, chapters, journal articles, ...).
2. Each type of output has its own particular features and complications and a DFID policy should present some general across-the-board principles, and set specific requirements for specific cases.
3. For outputs financed in whole or in part by DFID, **general principles** could include:
 - a. Use of open 'licenses' such as creative commons that recognize authorship of an output and encourage use and adaptation of the output.
 - b. Use of open formats and standards in creating, storing and making outputs accessible.
 - c. Systematic deposit of outputs – and metadata describing them - in open archiving systems and repositories where they will be permanently available and accessible to others.
 - d. Development of open platforms and initiatives that provide open alternatives, promote awareness, enhance skills and knowledge, and provide wider public access to open collections and systems.
 - e. Use of appropriate acknowledgement terminology or descriptors in outputs and the systems that provide access to them, so that DFID-funding research can be tracked back²⁶.
 - f. The expectation that authors and their institutions will maximise the opportunities to make their research available for free.
4. With regard to **journal articles** financed in whole or in part by DFID:
 - a. Require that the metadata of all articles are deposited in a central repository nominated by DFID²⁷, and that DFID sponsorship is acknowledged.
 - b. Encourage authors to publish in open access journals (or journals with hybrid open access provisions), using funds from DFID to pay any open access charges.
 - c. Require that digital versions of all articles, with metadata, be deposited in a proper institutional or subject repository, as soon as possible and in any event within twelve months of the journal publisher's official date of final publication.
 - d. Require that digital versions of all articles, and their metadata, acknowledge DFID sponsorship.
 - e. Encourage authors and publishers to license articles such that they may be freely copied and re-used (for example for text and data-mining purposes), provided that such uses are fully attributed.

²⁶ See RIN.2008. Acknowledgement of Funders in Journal Articles. www.rin.ac.uk/funders-acknowledgement

²⁷ The current R4D service is the closest to this.

- f. For articles in medicine and health, require that electronic copies be made available through PubMed Central (PMC) and UK PubMed Central (UK PMC) as soon as possible and in any event within six months of the journal publisher's official date of final publication.
 - g. For articles in medicine and health, encourage - and where DFID pays an open access fee, require - authors and publishers to license research papers available in PubMed Central (PMC) and UK PubMed Central (UK PMC) such that they may be freely copied and re-used (for example for text and data-mining purposes), provided that such uses are fully attributed.
5. With regard to 'traditional' **text outputs** (reports, papers, press items, posters, etc) financed in whole or in part by DFID, and published by a project:
- a. Require that the metadata and complete digital versions are deposited in a proper institutional or subject repository²⁸, ideally the one housing the project.
 - b. Require that the metadata and complete digital versions are deposited in a central repository nominated by DFID.
 - c. Require that the metadata and digital versions acknowledge DFID sponsorship.
 - d. Require that an appropriate open license is used that encourages re-use of the content.
6. With regard to **video, images and related media** outputs, financed in whole or in part by DFID:
- a. Require that the metadata and complete digital versions of significant outputs are deposited in an appropriate institutional or subject repository.
 - b. Require that the metadata and complete digital versions of significant outputs are deposited in a central repository nominated by DFID.
 - a. Require that the metadata and digital versions of each output acknowledge DFID sponsorship.
 - b. Require that an appropriate open license is used that encourages re-use of the content.
7. With regard to **web sites** financed in whole or in part by DFID:
- a. Require that significant content is permanently archived and accessible beyond the term of any project financing.
8. With regard to **social media** outputs such as blogs and wikis, financed in whole or in part by DFID:
- a. Encourage projects to use social media to report and communicate DFID-supported research.
 - b. Require that the metadata of significant outputs are deposited in a central repository nominated by DFID.
 - c. Require that significant outputs are permanently archived and accessible beyond the term of any project financing.

²⁸ By 'proper repository' we mean that the repository follows international standards in this area and, particularly, complies with the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH) that allows interoperability across systems and services.

9. With regard to **data and datasets** financed in whole or in part by DFID:

1. Require that projects develop a plan for the curation, retention, accessibility and preservation of data and data sets²⁹.

10. Additional **specific elements** of a policy could include:

- a. Each funding proposal should be required to present an ‘accessibility’ plan or framework that sets out the policies and actions that will ensure widest open access to the various types of outputs. Linked to related communication plans, this framework should address both how ongoing immediate access will be delivered as well as permanent digital access beyond the term of an activity.
- b. Funds needed to make an output open access (such as a journal article) should be included as a line item in the proposed budget of a project. Alternative financing mechanisms, such as open access funds, could be established to ensure that ‘orphan’ outputs (of terminated projects for example) can be made open access.
- c. Grantees and projects should report on the accessibility of their outputs as part of the regular reporting cycles. DFID needs to monitor and ‘police’ these reports to ensure compliance.
- d. Adapting DFID research contracts to mandate these provisions. In particular, stronger provisions on the deposit of digital outputs and their metadata are needed. Current intellectual property provisions in research contracts that allow wide-ranging (and probably little-used) DFID use of the outputs (see Annex 4) may need to be checked. These suggest that DFID already has far-reaching rights that are not being used, and that these provisions may be contradicted by current practice of many grantees, when they, for example, sign copyright transfer agreements with publishers.
- e. In health and medicine, since there are now well-established policies and mechanisms developed by The Wellcome Foundation and others, DFID should join the UK PubMed Central (UKPMC), requiring that: Electronic copies of any biomedical research papers funded by DFID that have been accepted for publication in a peer-reviewed journal be made available through PubMed Central (PMC) and UK PubMed Central, as soon as possible and in any event within six months of the journal publisher’s official date of final publication. Authors and publishers are further required, if an open access fee has been paid, to license research papers such that they may be freely copied and re-used for purposes such as text and data mining, provided that such uses are fully attributed³⁰.
- f. Since other disciplines do not have a UKPMC or equivalent, DFID could establish a UK ‘PubDev Central’ that would provide the same kind of services, with both a much wider subject mandate and deposit requirements. The current R4D project is closest to such a new facility. To take on this role, projects should be required to submit metadata on all outputs as well as full text deposit of some outputs into R4D. On its side, R4D should become a state of the art open access repository

²⁹ See: Wellcome Trust. Policy on Data Management and Sharing. www.wellcome.ac.uk/About-us/Policy/Policy-and-position-statements/WTX035043.htm. See also: RIN. 2008. Stewardship of Digital Research Data - Principles and Guidelines: www.rin.ac.uk/data-principles

³⁰ See <http://ukpmc.ac.uk/funders/>

(in terms of its being harvested and using Open standards), it may need to look at easier ways to submit content, and it may want to examine smart methodologies by which it could harvest open content from DFID-supported projects. Its current roles as (partial) repository and research alerting and communication service offer an attractive model to provide both permanent access and value added services.

- g. Beyond UKPMC, R4D and any available institutional repositories, DFID should encourage projects to contribute metadata and digital content to any specialized repositories or services that will broaden access to this content³¹.
 - h. For institutions in developing countries, initiatives such as PERI (through INASP) and Research4Life (Agora, Hinari, Oare) currently provided enhanced and affordable access to much of the closed journal literature that is otherwise inaccessible. Until a large enough mass of open access articles is reached, these initiatives serve a useful preferential access role for the participating institutions³². DFID should continue supporting such efforts until such time as the literature becomes substantially open access.
 - i. One roadblock often raised by authors is that suitable open access journals do not exist in their area. Despite the more than 4000 titles listed in the Directory of Open Access Journals, and increasing 'hybrid' possibilities with commercial publishers, many journals do not provide an open option. This is particularly true for journals published in developing countries where business models are fragile and subscription income is critical to survival. DFID may want to support initiatives in developing countries to support greater choice in open access journal publishing³³.
11. Given the widespread concerns of many respondents and the often limited awareness of open access possibilities, DFID could support the following **complementary actions**:
- a. Contribute to awareness raising efforts that explain what open access is and is not, and how it helps DFID and its partners achieve their development objectives without sacrificing quality. It is particularly important that scientists/authors get these messages as they are the ones actually making decisions on where and how to publish and communicate. The enabling information, library, communication and publishing communities already have higher levels of awareness, they often lack the concrete information and examples that they can adopt in their own situations³⁴. Open Access Week 2009 (19-23 October) offers an opportunity to make DFID's ideas open, visible, and accessible³⁵.
 - b. Several respondents commented on the need for DFID to engage other research funders so organizations doing research do not face competing sets of demands

³¹ Examples are AGRIS (agriculture), RePEc (economics), GDNNet (development economics). There are many others serving specialized communities.

³² They also have important local and national capacity building roles related to the effective communication and uptake of research information.

³³ The Indian Academy of Science recently moved to an open access journal publishing model (http://www.ias.ac.in/j_archive/); In Latin America, the SciELO project shows what is possible over many years (www.scielo.org); INASP incubated AJOL in Africa (<http://ajol.info/>) and is supporting several initiatives in Asia; the pen Journal System provides a free platform for journal publishers to adopt (<http://pkp.sfu.ca/?q=ojs>).

³⁴ In agricultural research, the CIARD initiative is documenting and developing 'pathways' that can be followed to achieve different accessibility goals (www.ciard.net).

³⁵ www.openaccessweek.org/

in this area. DFID should seek to influence and mobilize other funders to adopt similar policies and approaches. Coherence is important to avoid confusion...

- c. Finally, there is a huge amount going on in this area. There is much general advocacy and debate between open access advocates, sceptics and opponents. There are many interesting smaller initiatives and experiments looking at ways to take aspects of the agenda forward. They are spread across disciplines and communities; they are often quite disconnected. DFID may want to create a limited 'open access to research for development' fund or instrument that provides financial or other support and recognition to innovative initiatives. These could be doing advocacy, developing platforms and tools, organizing workshops and learning, or showing the benefits of open science, open research, open knowledge, or open access.

An outstanding question is if and how such a policy should be applied retrospectively. It is important that current workflows and behaviours are quickly changed to ensure that all future outputs are captured and can be accessed in posterity. Actions are also needed across the community to ensure that what has already been created will remain accessible. Perhaps the OA2R4D fund can be used to support proposals to retrofit past efforts.

Annex 1: Further Resources

There is a vast and fast-growing literature on open access related to scholarly publishing and science communication. It is spread across all disciplines, including a strong ‘international development’ strand³⁶.

There is also an increasing - and increasingly interesting – broader dialogue around notions of ‘open’ science, scholarship, content, development, data and knowledge. These are often expressed through various forms of ‘commons’ movements – such as the ‘science commons’, the ‘conservation commons’ and the widespread ‘creative commons’ approach to licensing outputs.

There is a large ‘advocacy’ debate anchored in scholarly publishing that argues for open access, debates the merits of different approaches, and tracks important milestones (such as when an open access mandate is adopted). Much information and experience is shared through blogs and conferences. Good places to track this debate are through shared social bookmarking tools like ‘delicious’ (http://delicious.com/tag/open_access) or ‘connotea’ (www.connotea.org/tag/oa.new).

This scholarly publishing debate is reinforced by several major tools and resources (notably SHERPA - www.sherpa.ac.uk, ROAR and ROARMAP – via www.eprints.org, DOAJ - www.doaj.org, and SPARC – www.sparceurope.org) that monitor and track open access repositories, mandates, policies, and journals.

There is also a growing set of resources, guidance and tools for institutions and individuals who wish to make their outputs more openly accessible (e.g. www.openoasis.org). This ranges from guidance to setting up repositories, deciding on an open access repository or journal publishing platform, through policy advocacy to deciding copyright terms.

Groups like JISC (www.jisc.ac.uk) and RIN (www.rin.ac.uk) in the UK and SURF in the Netherlands (www.surf.nl/en) mobilize and support open access initiatives and make information and advice available to their various constituencies.

Open access platform providers like ‘eprints’ (www.eprints.org) and ‘dspace’ (www.dspace.org) for repositories and ‘OJS’ (<http://pkp.sfu.ca>) for journal publishers also act as windows to their open access domains and guide users to resources.

Researchers looking for such open resources can search general tools like DOAJ, OALster (www.oalister.org), Google Scholar (<http://scholar.google.com>) or Scirus (www.scirus.org).

There are also many discipline-based tools like Avano (fisheries and aquaculture - www.ifremer.fr/avano), RePEc (economics - <http://repec.org>), UKPMC (medicine - <http://ukpmc.ac.uk>) or BioMed Central (biology and medicine - www.biomedcentral.com).

The search platforms of commercial publishers and aggregators will also provide access to the subset of articles that has been made open access (‘hybrid’ paid for model). For developing countries, initiatives like Research4Life (www.research4life.org) and PERI (see www.inasp.info) provide something similar on a much larger scale: Eligible institutions can gain free or heavily discounted access to journal articles normally not accessible to them.

³⁶ Wikipedia has several articles (http://en.wikipedia.org/wiki/Open_access) providing a comprehensive introduction and history of open access: http://en.wikipedia.org/wiki/Open_access_publishing.

Annex 2: R4D Outputs by Category

The table below shows the distribution of outputs captured in the R4D database (July 2009) by subject area and output type. It shows the different publishing strategies among sectors.

Care is needed with this data as the R4D database does not contain information on every output. There is likely to be a bias.

It is striking that journal articles are by far the most recorded output in health and medicine; with other subject areas recording far less (in numbers and as a proportion of all outputs recorded). The importance of reports and papers in other subject areas is notable (though this is likely to be less should all the articles produced by recorded).

The implication is that a policy directed mainly towards journal articles will have more or less impact in each subject area.

Subject area	Total	Journal articles	Journal article	Report	Research paper	Working paper	Briefing	Meeting	Discussion Paper	Magazine newsletter	Key document	Technical report
Sustainable Agriculture	9587	263	2.74%	20.71%	8.19%			3.44%			5.72%	3.35%
Climate Change and Environment	9341	768	8.22%	17.70%	6.13%			12.48%			6.11%	5.18%
Education	433	7	1.62%	3.70%	19.63%	8.78%	5.08%		11.78%		3.23%	
Growth	662	6	0.91%	10.57%		23.56%	23.11%		6.95%		3.02%	
Health	4058	1102	27.16%	4.81%	11.90%					5.45%	3.43%	
Information and communication	700	0	0.00%	7.29%			23.43%			10.86%	9.57%	
Infrastructure	1786	14	0.78%	15.79%	8.23%						15.29%	14.17%
Social and Political Change	2620	134	5.11%	10.00%	8.59%	25.15%	5.84%					

Annex 3: CGIAR Journal Outputs

Each year, CGIAR centres report how many publications they produce, in several categories.

The table below shows numbers of journal articles reported (split between titles indexed by Thomson and those non-Thomson).

Other analysis for 4 of these centres (see below) suggests that more than 65% of the articles in Thomson journals are not openly accessible to non-subscribers; assuming an average cost of \$2000 in publisher fees, the CGIAR would need an extra \$ 1.6 million to ensure that all the articles in Thomson journals become open access through a 'gold' route.

Center	Thomson				Non-Thomson				all			
	2005	2006	2007	2008	2005	2006	2007	2008	2005	2006	2007	2008
Africa Rice	19	24	21	36	34	13	24	37	53	37	45	73
Bioversity	45	48	54	47	116	73	53	95	161	121	107	142
CIAT	75	82	135	83	126	111	134	148	201	193	269	231
CIFOR	46	42	50	73	109	57	57	95	155	99	107	168
CIMMYT	91	139	135	116	40	56	80	44	131	195	215	160
CIP	25	54	61	55	24	16	24	41	49	70	85	96
ICARDA	38	50	46	97	183	60	109	95	221	110	155	192
ICRISAT	83	77	115	121	167	244	193	172	250	321	308	293
IFPRI	58	51	85	99	140	148	138	95	198	199	223	194
IITA	106	128	110	112	118	60	105	65	224	188	215	177
ILRI	50	63	67	73	63	55	83	67	113	118	150	140
IRRI	101	120	118	120	75	79	49	112	176	199	167	232
IWMI	55	64	67	103	90	105	134	125	145	169	201	228
World Agroforestry	45	82	54	71	53	78	123	131	98	160	177	202
WorldFish	24	41	31	41	8	29	35	29	32	70	66	70
	861	1065	1149	1247	1346	1184	1341	1351	2207	2249	2490	2598

The table below shows some accessibility measures for articles published by 4 CGIAR centres in Thomson journals, in 2006.

The column 'FT center web site' shows the proportion of all articles available on the Centre's own web site, in full text – an average of 28%. Overall, some 35% of all these articles are available open access somewhere on the internet. The column 'FT online agora' shows that the AGORA initiative for developing countries increases the accessibility of these articles, from 35% to an average 59%.

center	FT center website	FT online	FT online open	FT online agora	center web search indexed	cgjar vlibrary indexed	google scholar indexed	google all indexed
center1	24%	100%	22%	68%	0%	2%	100%	95%
center2	0%	100%	22%	52%	0%	0%	94%	100%
center3	38%	84%	62%	59%	99%	100%	87%	100%
center4	50%	85%	32%	55%	82%	51%	32%	96%
average	28%	92%	35%	59%	45%	38%	78%	98%

Annex 4: Existing DFID contracts – IPR and Copyright

Extracts from the standard provisions:

7.1 All intellectual property rights in all material (including but not limited to reports, data, designs whether or not electronically stored) produced by the Consultant or the Consultant's Personnel pursuant to the performance of the Services ("the Material") shall be the property of the Consultant.

7.2 The Consultant hereby grants to DFID a world-wide, non-exclusive, irrevocable, royalty-free licence to use all the Material.

7.3 For the purpose of Clause 7.2, "use" shall mean, without limitation, the reproduction, publication and sub-licence of all the Material and the intellectual property rights therein, including the reproduction and sale of the Material and products incorporating the same for use by any person or for sale or other dealing anywhere in the world.

Alternative clause:

"7 Any reports or documents prepared or information or inventions produced by or on behalf of the Consultant relating to the Contract and all intellectual property rights therein shall be the property of the Crown. The Consultant hereby assigns to the Crown all intellectual property rights in the above mentioned material generated by the Consultant in the performance of the Contract and waives all moral rights relating to such materials."

(Use of this Clause should be considered if it is in DFID's interests to retain exclusive IPR perhaps where consultancy work for either DFID to the Recipient is of a highly sensitive nature (either economic/commercial/political/technical).

Annex 5: Cost Aspects

There are several main open access dimensions where there are cost implications:

With regard to depositing outputs:

1. For organizations to establish and populate repositories, if they do not yet exist. The software is normally free to use; there are costs to customize the repository, and then to get it populated. For journal articles, a large, difficult to measure aspect, is the whole process to ensure that deposit practices match the policies of different publishers and individual journals.
2. To take care of retrospective digitization and deposits, should this be required.

With regard to open licensing:

1. This is normally a policy decision, requiring implementation procedures.

With regard to author or publishing fees, open access journals as well as closed journals offering an open option charge authors. Discounts are available to organizations or individuals who join or support some open access publishers (such as BioMed Central) or are members of professional associations:

1. Sherpa/Romeo has a page listing paid open access options.³⁷ Many article fees are in the \$1500 - \$3000 range.
2. Most open access PLoS journals charge at least \$3000 per article, with discounts for members³⁸.
3. The University of California Berkeley provides a Selective List of Open Access and Paid Access Fees for several publishers³⁹.

Other aspects:

1. DFID may want to become a funder of UKPubMed Central (for medical and health)
2. The R4D portal – ‘UKPubDev Central’ has recurring costs as well as some additional investment to become both comprehensive index and repository of DFID-funded research outputs as well as OI-PMH metadata publisher.

³⁷ www.sherpa.ac.uk/romeo/PaidOA.html

³⁸ www.plos.org/journals/pubfees.html

³⁹ http://www.lib.berkeley.edu/scholarlycommunication/oa_fees.html

Annex 6: Terms of Reference

Objective

To conduct a scoping study on what DFID Research should do to develop and take forward an 'open access' policy that will lead to substantially greater public access to the outputs and results of research financed by DFID.

The findings of the study will be used to clarify the key notions associated with open access to research, and identify where and how DFID Research could make a difference in this area (both in terms of access to publicly funded research and in influencing the agenda on open access to publicly funded development research).

Method

This is an initial study to scan DFID Research activities, processes and policies that already contribute towards an open access policy. The study will also look at related activities and policies of other funders of development research to understand and draw lessons for DFID.

Most of this work can be done through a review of experiences and literature and face to face, video, email or telephone interviews with selected organizations and individuals.

1. Conduct a study of what DFID Research is already doing that might form the basis of an open access policy.
2. It should look at others' experiences and practices with the implementation of 'open access' policies in their research funding arrangements (e.g. Wellcome Trust, CGIAR, UK Research Councils, IDRC, European Commission, Dutch and Scandinavian funders, Soros). The study should consider the implications of introducing a policy such as the US NIH standard (all publications open-access within a year <http://publicaccess.nih.gov/>) or the Wellcome standard (all publications open access within 6 months and where any publication is not immediately open access it should be published in a journal on HINARI or a similar site (e.g. AGORA for agriculture and OARE for Environment) making it freely available to academic institutions in the poorest countries).

In relation to the above, it should also provide information about the top ten (if it's possible to compile such a list through a scan of publication lists from research programmes) journals in each thematic area, and their open access policies (e.g. whether they have arrangements for open access, or are considering such arrangements in the future.)

3. It should examine a small sample of current DFID-funded research programmes to assess their open access 'readiness' and to better understand:
 - i. what step change is needed by organizations;
 - ii. what types of support might be needed;
 - iii. what DFID might expect in terms of resistance/appreciation of a new policy on open access.
4. The study should compile a list of existing key standards, certification systems, guidance and other tools that already exist that could be bought into or readily

utilised by DFID and its research partners. The study should also consider open access issues in relation to access to primary quantitative and qualitative data sets. The study should assess whether the new DFID Research logframe adequately assesses research programmes contribution to research outputs, through a new system of scoring research outputs (including the type of publication).

5. The study should review the potential cost to DFID on an open access policy. It should also present a number of options for financing open access. This should include looking at how the communications budget is allocated within RPC/DRC⁴⁰ and whether (i) funds are already allocated to open access or (ii) the implications on spending and perverse incentives for using the communication budget (and especially the likely effects on systematic strategic communication if an open access policy is introduced) and (iii) the degree to which DFID funded research programmes' home institutions have Open Access arrangements that can be tapped into at minimal or no cost..
6. Present these preliminary findings in a small workshop with selected DFID Research staff. The objective of the workshop is to present the learning and best practice and start to outline an open access policy for DFID Research. It should also help DFID Research identify what can be put in place immediately and what are the longer term goals of the policy.

Outputs

- A short report (maximum 15 pages + annexes) that summarises where DFID Research is now, what others are doing in this area and key lessons, what DFID can do immediately and in the longer term, as well as any other practical options for DFID.
- To run a half to one day workshop with DFID staff to analyse the findings and present options for a policy on open access.
- Recommendations on how DFID Research should progress with developing a policy on open access.

⁴⁰ Research Programme Consortia (RPC) / Development Research Centre (DRC): DFID Research model for bilaterally funded research programmes.

Annex 7: People and Contacts

I am grateful to the following people who shared their views and information on research communication and open access:

- Subbiah Arunachalam, Distinguished Fellow, Centre for Internet and Society, India
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- Andrée Carter, Director, UK Collaborative on Development Sciences
- Guy Collender, Communications Officer, London International Development Centre
- Elizabeth Dodsworth, CAB International
- Gary Edwards, Marketing and Database Coordinator, Institute of Development Studies, University of Sussex
- Asghar Fazel, Coordinator of the Conservation Commons & Senior Advisor to UNEP-WCMC
- Peter Ferguson, Project Manager, ELDIS, Institute of Development Studies, University of Sussex
- Marianne Forti, Communications Officer, Danish Development Research Network
- Deirdre Furlong, European Commission - DG Research, Belgium
- Sarah Gwynn, Programme Director, INASP
- Kate Hawkins, Communications Officer, Knowledge, Technology and Society, Institute of Development Studies, University of Sussex
- Frances Hunt, Research Fellow, CREATE, Centre for International Education, University of Sussex
- Alexandra Hyde, TARGETS Consortium, Department of Infectious and Tropical Diseases, London School of Hygiene and Tropical Medicine
- Sirkka Immonen, Senior Agricultural Research Officer, CGIAR Science Council, Italy
- Michael Jubb, Director, Research Information Network, British Library
- Caroline Knowles, Communications Manager, Young Lives, Oxford Department of International Development, University of Oxford
- Roger Mills, Biosciences and Environmental Sciences Librarian, University of Oxford
- Frank Norman, Librarian, MRC National Institute for Medical Research
- Martin Parr, CAB International (and R4D)
- Nick Perkins, Head of Communication, Institute of Development Studies, University of Sussex
- Nicola Perrin, Senior Policy Adviser, The Wellcome Trust
- Barbara Porrett, Research Information Management Services, IDRC, Canada
- Samantha Reddin, Communications Officer, Knowledge, Technology and Society, Institute of Development Studies, University of Sussex
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From DFID:

- Chris Whitty, Head of Research
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