Making the 'Evolutionary Leap': Using Open Knowledge Approaches to Improve Development Outcomes

The starting point of the Open Knowledge Hub project was our belief that the adoption of so-called 'Open Knowledge' approaches had the potential to improve the impact of research evidence on development outcomes and address inequalities in the visibility, accessibility and uptake of diverse knowledge about development. This paper describes what we learned about the drivers and motivations for knowledge organisations to engage with Open Knowledge approaches. It also addresses the issues and barriers to engagement that, we have argued, threaten to undermine these potential benefits. The paper looks at both direct learning from the project and external research evidence accumulated during our work.

Key findings

Open Knowledge is a cross-cutting issue. It is not a purely technical consideration but requires knowledge intermediaries to reflect on their production processes and develop editorial and technical systems which support improved data sharing.

Different types of organisations have different motivations for wanting to engage with Open Knowledge approaches.

Open Knowledge approaches are still emerging — take-up and awareness of these new approaches and new technologies is sectorally, geographically and linguistically uneven.

Research organisations in the development sector (and more broadly) need to value Open Knowledge more in their reward and promotion systems. But for this to happen requires that the benefits of Open Knowledge can be better demonstrated and more work is needed to develop effective tracking methods and metrics to enable this to happen.

Resourcing, language, capacity and scale can be barriers to organisations wishing to participate in Open Knowledge approaches.

Working in partnership can strengthen understanding of needs and contexts and make a broader contribution to partners' effectiveness and capabilities as knowledge sharing organisations.

Open Knowledge needs to be more inclusive of diverse methods of knowledge generation and dissemination beyond traditional research. We can learn from other disciplines to explore how we can support, for example, local communities to document, value, share and protect the knowledge they have using Open Knowledge approaches.

The Open Knowledge Hub project

The Open Knowledge Hub project brings together knowledge producers and intermediaries, particularly those in developing countries, to work together collaboratively to address gaps and inequalities in the availability and accessibility of development research. In particular the project focuses on using Open Knowledge approaches – emerging technology and standards from the Open Access and Open Data[1] movements.

The Open Knowledge Hub platform (okhub.org) is the product of this collaboration. It primarily consists of a database of partners' open-licensed content about development research documents with a set of supporting tools to make it easier for that content to be shared and repackaged – either between the project partners or by third parties.

The first phase of the project was supported by the DFID-funded Global Open Knowledge Hub (GOKH) programme and delivered by the Open Knowledge and Digital Services team at the Institute of Development Studies (IDS) based in the UK. IDS convened a core group of ten partners to share knowledge and experience, develop the applications, and open up their content for use in the Hub.

In the project to date, we have worked with organisations that are linked to academic institutions, research centres and libraries and also others that work with regional networks, local organisations, indigenous communities and local small-scale civil society organisations. We also worked in Anglophone as well as non-Anglophone regions in an attempt to include a diverse array of perspectives, experiences and voices.

The Open Knowledge landscape

What do we mean by Open Knowledge?

When talking about Open Knowledge in the context of research we are generally drawing together a number of definitions of 'openness' that encompass related terms like Open Access, Open Content and Open Data and describe the sharing of research knowledge in digital, online formats.

There are two key concepts which determine the practical application of Open Knowledge approaches. First is the use of licensing to explicitly define how Open Content can be reused, revised, remixed and redistributed. The best known example of these kinds of license is the Creative Commons[2] suite of licenses.

Second is the promotion of interoperability between systems to maximise the potential for content to be shared. Interoperability in practical terms means adopting shared formats, standards and protocols governing how content is presented; how it is stored, described and organised.

The emergent movement

Open Knowledge, in this context, is an emergent movement that is a 'radical yet organic process of innovation from within' (Peschl and Fundneider 2008). Recent years have seen a rapid rise in demand for the adoption of Open Knowledge approaches by the development community. These have been driven by a number of intersecting trends.

These include:

- The adoption of increasingly wide-ranging Open Access publishing models by funders such as DFID (2012) and the Gates Foundation[3] for both research outputs and research data sets.

- Increasing recognition and evidence of the value of Open Access publishing models in extending the reach of research knowledge (Davis 2008, 2011), particularly for developing country audiences (Chan, Kirsop and Arunachalam 2005; Evans and Reimer 2009).

- The emergence in some sectors of large-scale Open Data initiatives to bring together research and other forms of data, for example GODAN – Global Open Data for Agriculture & Nutrition.[4]

'Open Access' literature is digital, online, free of charge and free of most re-use restrictions. Open Access publishing aims to remove price barriers and permission barriers that can restrict the availability of knowledge.

'Open Content' describes any copyrightable work licensed in a manner that provides users with free and perpetual permission to reuse that material. For example, the suite of Creative Commons licences.

'Open Data' is data that is made available in a way that enables it to be used, redistributed and combined with other data by anyone, for any purpose – subject only, at most, to the requirement to attribute and share alike.

- Increasing broader recognition of the role that Open Data can play in achieving development outcomes. The UN Secretary-General's Expert Advisory Group report, *A World That Counts: Mobilising The Data Revolution for Sustainable Development* (Independent Expert Advisory Group on the Data Revolution for Sustainable Development 2014), recognises the opportunity presented by new sources of data in offering 'unprecedented possibilities for informing and transforming society and protecting the environment', but also identifies possible risks including the dangers of reinforcing existing inequalities in production, access to and use of data.

- The global push for 'Open Governance' with a focus on the transparency of government data and information (Edwards and McGee 2016).

At the heart of the Open Knowledge Hub project was the belief that these trends towards the adoption of Open Knowledge approaches, and the associated developments in technical infrastructure, metadata standards and licensing of content, held significant potential to improve the impact of research evidence on development outcomes and presented opportunities for knowledge producers and intermediaries to increase the visibility, accessibility and uptake of diverse knowledge about development. However, at the outset of the Open Knowledge Hub project we observed that take-up and awareness of these new approaches and technologies was sectorally, geographically and linguistically uneven. They tended to be concentrated in a few large institutions based in Europe and North America such as the Food and Agriculture Organization of the United Nations (FAO), UN agencies and the World Bank. As such, there was not a consistent evolution or step-change from one set of practices to another across all actors.

> **"Stimulating public debate and influencing policymaking would be impossible without Open Knowledge principles and practices."**
>
> *Mark Lewis quotes in Clements R., 2015*

Our own experience at IDS showed us that actual implementation of Open Knowledge approaches was difficult. We identified issues of resourcing, capacity and scale as likely to be important factors in inhibiting this emergence particularly among smaller and developing country-based organisations. We were also concerned that these barriers to engagement that threatened to undermine universal access to the potential benefits of Open Knowledge approaches might even reverse progress against addressing inequalities in the availability and accessibility of knowledge made elsewhere. As IKM Emergent[5] has argued in its guiding principles, the ability of major development sector organisations to invest in ICT systems could be seen as 'anti-developmental' with the potential to heighten inequality rather than diminish it.

We made the assumption that a project that offered to deliver a shared set of tools and the opportunity to share learning on Open Knowledge would be attractive to organisations in the sector that had observed the same trends but were unsure of how to participate.

Beyond this broad assumption we did not have a particularly nuanced view of the precise drivers and motivations for organisations to participate or how these might differ depending on the type of organisation and the context in which they were working. So a constant theme of the project, during our events and as part of our work with partners, has been to try to understand these differences better.

This has been most tangibly realised in the commissioning of a number of 'scoping studies' carried out by partners in the regional, thematic and linguistic contexts in which they work. These studies were not uniform in approach, as they were primarily designed to address the particular needs and aspirations of individual partners, but have in common that each attempted to assess the potential for the adoption of Open Knowledge approaches among the research organisations and intermediaries in each of the partners' networks. Each study looked at the current level of awareness and interest in Open Knowledge and, in different ways, assessed the capacity and opportunities for organisations to take part.

Open Knowledge organisations – their characteristics and motivations

Although overall levels of awareness of the emergent Open Knowledge agenda were limited, almost all of the organisations we have engaged with through the project (with the exception of some knowledge producers) shared similar values around knowledge as a global public good and supporting improved accessibility and visibility of knowledge for all. During the initial open call for partners and subsequent inception workshop, increasing the availability of knowledge, building local research excellence and reach, and promoting evidence-based policy and programmes were all given as key reasons for engagement.[6] Similarly, potential partners interviewed in the scoping studies generally identified strongly with these values. 'All organisations see the value of Open Knowledge approaches and see them as fitting into their overall strategic objectives to make their knowledge more accessible' (Venth 2015).

Some external research evidence points to thematic differences between research sectors in the adoption of Open Knowledge approaches. For example, Boyera and Iglesias (2014) find limited engagement with Open Knowledge in traditional development sectors such as health and education compared to climate change and agriculture. However, we did not see significant differences emerge among the, admittedly limited, pool of project partners or from our scoping work despite reasonably good sectoral coverage. Regional and language-based differences, however, did emerge.

In English speaking Africa the SoulBeat scoping study did identify examples of African innovation around Open Knowledge such as Africa Portal. Other studies have similarly highlighted projects in the library sector such as the African Open Access Repository Initiative (AOARI) at Stellenbosch and the Scholarly Communication in Africa Programme. However, SoulBeat found that 'knowledge intermediaries themselves don't always see themselves as part of a community of practice, and therefore do not see the opportunities for collaboration, and mutual sharing and learning' (Venth 2015). The Latin America scoping study (Clements 2015) suggests a quite different picture where the adoption of Open Access seems more advanced across research sectors and some strong networks exist to promote and support participation in Open Access and Open Knowledge. These include the Latin American Council of Social Science's (CLACSO) Open Knowledge campaign and network of virtual libraries.

It was this need amongst knowledge producers and intermediaries to be part of a community of practice, to collaborate and to share experience, not just on Open Knowledge but on knowledge intermediary practice more broadly, that emerged as perhaps the strongest driver for participation in the project overall.

As Timo Baur of the Caribbean Community Climate Change Centre (CCCCC)[7] said: 'The project also provides an opportunity to network with similar organisations around the world and therefore increases cooperation, and has enabled the team to identify areas for improvement in the methods used for knowledge management' (Baur 2016).

In terms of differences in the types of organisations seeking to adopt Open Knowledge approaches we identified four broad categories. Within this typology there is some crossover and organisations might identify with more than one type.

1. Knowledge portals – knowledge intermediaries publishing content/metadata based on research outputs from other organisations

Characteristics
These organisations tend to have developed their own bespoke technical platforms (which are Open Source Content Management System-based), editorial policies, data structures and taxonomies to suit their specific purpose. They are often based within an NGO or think tank rather than a more traditional academic institution. They measure success based on volume and trends in use of content through web metrics and have a business model reliant on demonstrating use as proxy for impact. They place high emphasis on quality of content and brand reputation.

Drivers and motivations
These portals often see Open Knowledge approaches as a way to share their content in new spaces. Over time a pragmatic driver has emerged which involved the need to operate cost effectively and improve efficiency in the sourcing, production and quality assurance of content. 'Open approaches also help consolidate data from different sources into a single platform for easy access and cross comparison' (Venth 2015). 'A common challenge for intermediary portals fed by a large number of producer organisations is establishing a common indexing system so as to reduce the burden of portal administration' (Clements 2015).

However, portals placed high emphasis on quality of content and brand reputation so a number of partners described barriers to participation that they wanted to see addressed by the project. These included possible dilution of perceived quality of their content – or additional work required to assure quality (Venth 2015). There was also a widely expressed concern that 'openness' may result in the loss of measurable traffic and attribution back to them as the content originator which would affect both their ability to demonstrate success and evaluate the impact of their work.

2. Libraries – drawing on a wide range of sources to provide access to comprehensive collections for a largely internal audience

Characteristics
These organisations tend to adopt fairly standard implementations of widely-used open source software platforms (Koha – for library collection management,[8] DSpace – digital repository[9]) rather than develop their own or heavily customise existing systems. However, they do not always make use of the 'Open' features of these platforms.

They tend to have better adoption of shared technical standards than the other groups and better structured data. There is an established culture of cooperation between libraries. They are not often competing for the same audiences so librarians tend to be more open to working in this way. They normally belong to academic library associations in country as well as international ones although these are not always leveraged in terms of learning and sharing knowledge. Most are based in academic institutions such as universities and colleges as well as regional bodies and some government departments. They measure their success in terms of the size and quality of their collection, its accessibility, user visits, downloads, citations and circulation.

Drivers and motivations

For libraries the key broad motivation for engagement was to facilitate as comprehensive and efficient access as possible to good quality research resources for their internal audiences and stakeholders (Playforth 2013). Secondary motivations were preserving access to and increasing discoverability of their particular holdings and collections. They were often interested to broaden their digital holdings beyond relatively low-value electronic theses and dissertations and sought help with addressing licensing and copyright challenges (Manjunath 2015) and funding to support digitisation (Butcher and Gebhart 2015).

Research by IDS and our partners suggests that inadequate technical infrastructure, lack of awareness and understanding of the concepts and limited funds are barriers to the uptake and use of repository platforms (Gregson *et al.* 2015: 25; Mwesigwa 2015). Several libraries indicated that, whilst they operated repository platforms, they were often not able to maintain these effectively or chose not to use the 'Open' features due to perceived lack of information and concern about the licensing implications (Manjunath 2015) so were seeking technical support and opportunities for shared learning in these areas.

3. Knowledge producers – research publishers looking to increase the reach, use and impact of the research evidence they are producing

Characteristics

These organisations tend to use open source CMS platforms (Drupal, Joomla, Wordpress) and often outsource technical development work to third-party commercial providers. They structure the information they present to the external world based on the way their organisations are structured, i.e. by research theme, project or programme. They measure success based on use and uptake so often draw on more qualitative data or complex metrics.

Drivers and motivations

Knowledge producers tended to be primarily interested in the potential for Open Knowledge approaches to increase the reach, use and impact of the knowledge they generate, and some were strong advocates as a result.

'Think tanks seem to agree that stimulating public debate and influencing policymaking would be impossible without Open Knowledge principles and practices. DEJUSTICIA also recognises the value of Open Knowledge practices for reaching new (non-specialist) audiences, particularly via social media' (Clements 2015).

They often had a good grasp of Open Access publishing principles and as copyright holders did not face the same challenges around licensing as the libraries and portals. However, they were less confident in their ability to address the technical aspects of adopting Open technologies and standards and sought assistance particularly in this area and in identifying appropriate and often more qualitative or complex metrics for measuring use and impact.

4. Activists – organisations and networks who see Open Knowledge approaches as an advocacy and campaigning tool

Characteristics

These organisations tend to see Open Knowledge approaches as contributing to a wider agenda around equity, rights and accountability – for example, around gender and technology justice or equitable access to knowledge and innovation.

Drivers and motivations

Their key motivations tended to be on increasing dialogue and participation in discourse or decision-making for often under-represented, hard to access, or marginalised target groups and facilitating opportunities for shared learning and collaboration. For example, GDNet cited promoting Southern voice and addressing equality of Southern views as a primary driver for engagement with Open Knowledge.[10] CASEDE, a participant in the LiLA scoping study (Clements 2015), identified 'the space that Open Knowledge practices open up for young people to participate in policy debates,

such as through social media' as a key opportunity and cited 'new kinds of relationships based on principles of open knowledge and debate' as a factor that 'allowed policy influencing [to] become a qualitatively different process'.

Mark Vincent Aranas, SERP-P project coordinator, also expressed the value of engagement with the project in terms of its role in elevating the voice of local researchers:

> The wide range of materials already available on the OKHub, meanwhile, gives an international perspective to Filipino researchers who conduct local research. The SERP-P Network has also benefited as the partners learn more about Open Knowledge. Undeniably, the by-product of this collaboration (i.e. SERP-P and GOKH) has not only carried a common goal to promote Open Access among the SERP-P Network but has also reinforced the role of evidence-based research in crafting effective policies and regulations.
> (Vincent Aranas 2016)

Making the 'evolutionary leap' – opportunities and challenges to Open Knowledge adoption

The traditional approach to producing and sharing knowledge in global development is entrenched in the academic culture of social science research and the operations and business models of the many organisations in the sector. The Open Knowledge approach challenges this model and requires organisations to make an 'evolutionary leap' towards a new model which may starkly contrast with their previous approaches to creating and sharing knowledge, generating revenues and measuring success.

It is clearly difficult for organisations to adopt wholesale change without the security of knowing the benefits and costs. Early in the project we identified that there was limited empirical evidence to demonstrate the long-term implications of opening up knowledge and that this acts as an additional barrier as it increases the perceived risk associated with change. We therefore tried to address this and build on the body of evidence by documenting and measuring the impact of the changes we made in delivering our own services using a more 'Open' model.

New methods to track Open Knowledge and measure effectiveness
In the academic sector served by our library partners, and for some research producers, existing structures for research funding and career progression have measured success by traditional metrics such as scholarly citations and download statistics. This incentivises organisations and individuals to control their knowledge products in ways that sustain models that promote 'high-impact' closed-access academic journals, peer review and are confined by disciplines. In an article entitled 'Is Openness Enough?', Morsi and Norwood (2016) report 'the highly competitive nature of publishing in academic journals discourages scholars from sharing research before it achieves a final 'publishable' form, and thus the primary characteristic of the global ecosystem of scholarly production becomes competition, not collaboration'.

Open Access mandates are shifting this emphasis but incorporating new approaches into research evaluation is still an emerging area being explored; for example, in the 2015 review by the Higher Education Funding Council for England (Wilsdon 2015).

Progress towards making Open approaches the default model in this sector is reliant on developing new metrics that can replace established methods of evaluation processes in place for academic hiring, promotion and tenure.

Meanwhile, for knowledge portals, entrenched business models rely on web traffic and download statistics as a measure of success, which similarly incentivise confining content within a particular web domain to allow its use to be measured. Open Knowledge initiatives, by facilitating greater openness and shareability of content, challenge the usefulness of these traditional approaches so alternative benchmarks must be sought.

Altmetrics[11] measure online activity beyond traditional download/citation indicators as a response to the need for better measures of the reach and impact of research. The field is still new and dynamic, with a range of commercial and non-commercial providers developing new tools, and many studies on how to use them and understand their usefulness are being conducted. The diverse range of sources that altmetrics services can interrogate, are also evolving. The lack of a fixed concept of the value of altmetrics is arguably holding back their wider adoption, but there is a growing consensus that they are beneficial to organisations seeking to demonstrate types of impact and influence that cannot be discerned by journal citations alone. Similarly the adoption of persistent identifiers for scholarly outputs such as Digital Object Identifiers (DOIs), and more recently ORCIDs, for authors, is being widely promoted among better resourced organisations as essential to effective tracking of online research, both Open and non-Open. However, we found awareness of these tools and standards, and capacity and resources to use them to be low among project partners, which again suggests a potential imbalance in the ability of organisations to engage with these new

approaches. Some parallel efforts are underway to address this gap – for example, INASP[12] has been working with CrossRef on registering DOIs for each article in its regional Journals Online platforms – but more work is clearly needed in this area and the Open Knowledge Hub may have a role to play.

Indeed some Open Knowledge Hub partners have already sought the advice of their peers. At a session held as part of the programme's annual workshop (IDS 2016), partners from the University of Zimbabwe asked 'How do we attain researchers' buy-in in the creation of Open Knowledge platforms?' Solutions suggested included engaging with students rather than faculty as early adopters; use of altmetrics to articulate the value; providing examples of beneficiaries and convening open discussions. Documenting more Stories of Change (Bailey 2015) and sharing more examples from the flourishing Open Data movement were also seen as a way of communicating progress. In fact, the library at the University of Zimbabwe had already experienced initial scepticism around opening up academics' knowledge, but overcame this, digitised some of their resources and made these openly available. Having achieved this they generated evidence to demonstrate increased outreach, and then used the evidence to encourage more people within the university to open up their knowledge and move away from traditional approaches. The second wave of academics taking part in the digitisation project were only willing to take the 'evolutionary leap' when sufficient evidence was generated.

Intellectual property rights, copyright and data protection

Traditional approaches to knowledge production and dissemination are characterised by strict intellectual property rights and data protection. The emergent and rapidly changing nature of the Open model challenges all organisations to keep up, and smaller organisations, though potentially agile, may not have the capacity to keep up to date with current best practice. Although the Open Knowledge Hub project was principally focused on smaller knowledge providers and users outside Europe and North America, we did find that that lack of technical capacity and resources to engage effectively in this area were not exclusively confined to developing countries.

However, whilst it is too simplistic to characterise copyright and data protection regimes as less strong in developing countries, we have certainly found that where the copyright environment is unhelpful to access knowledge the required evolution to openness in content licensing is likely to be doubly challenging in those contexts.

The study on African copyright regimes and access to knowledge[13] conducted by the ACA2K project emphasised the importance of promoting and utilising more flexible approaches to the licensing and distribution of locally produced works. It found that Creative Commons licensing was gaining in exposure in a number of countries, but that the copyright environment in many more was not yet favouring the sort of Open Knowledge approaches that would be best suited to development outcomes for education or research. They identified consortia of higher education institutions and national libraries as having a pivotal part to play but our experience with the Open Knowledge Hub partners was that, whilst these networks exist, they were not yet universally playing this role.

Improved networking and collaboration

Whilst the Open Data movement has coalesced around efforts to make scientific and governmental data open and transparent, the drivers behind Open Knowledge are arguably operating in a wider sphere and are more nebulous. Collaboration and co-construction for Open Development is happening but trust and confidence that resources are being pooled for the most effective results will remain pressing issues.

Emerging standards are often applied from the 'top down' and naturally present problems when the ultimate goal is to adopt them universally in a dispersed, networked way. Linked open information is clearly good practice, but converting all metadata to a uniform format can be a considerable investment of time and resources. Without common standards, a lot of the potential for sharing and re-use of knowledge is lost. The objectives of openness necessitate collaboration to ensure that the multiple sites of knowledge production and use are not operating in an environment of competitive advantage and short-termism, but the constantly changing technologies indicate both challenges and opportunities ahead.

Inequalities in the visibility and accessibility of knowledge

Although Open Knowledge offers the opportunity to make research and good practice more accessible to all, this clearly does not happen in a vacuum. There are power dynamics in the production and distribution of knowledge that need to be taken into account.

Jean-Claude Guédon, an academic from Quebec and pioneer of the Open Access movement, recalls that 'beyond its immediate and obvious programme of offering unhindered access to international academic literature, one of the

objectives of open access is to improve certain flagrant dysfunctions in the current system of academic communication' (Guédon 2008).

IDS' framing of this broader issue is based on the concept of knowledge as a global public good (Stiglitz 1999) and the principle of cognitive justice which recognises the plurality of knowledge and expresses the right of the different forms of knowledge to co-exist and for dialogue to take place between them. Open Knowledge approaches can play a role in enabling these dialogues which can then contribute to a more sustainable, equitable, and democratic world. This broad framing is a key component of the IDS strategy.[14]

Through our work with our partners it is clear that there are many different types of actors in development, and the knowledge they produce takes different forms. Knowledge can be local or global, in different languages, in different formats (oral, written, visual), academic/scientific or produced by communities.

Figure 1   The location of academic knowledge
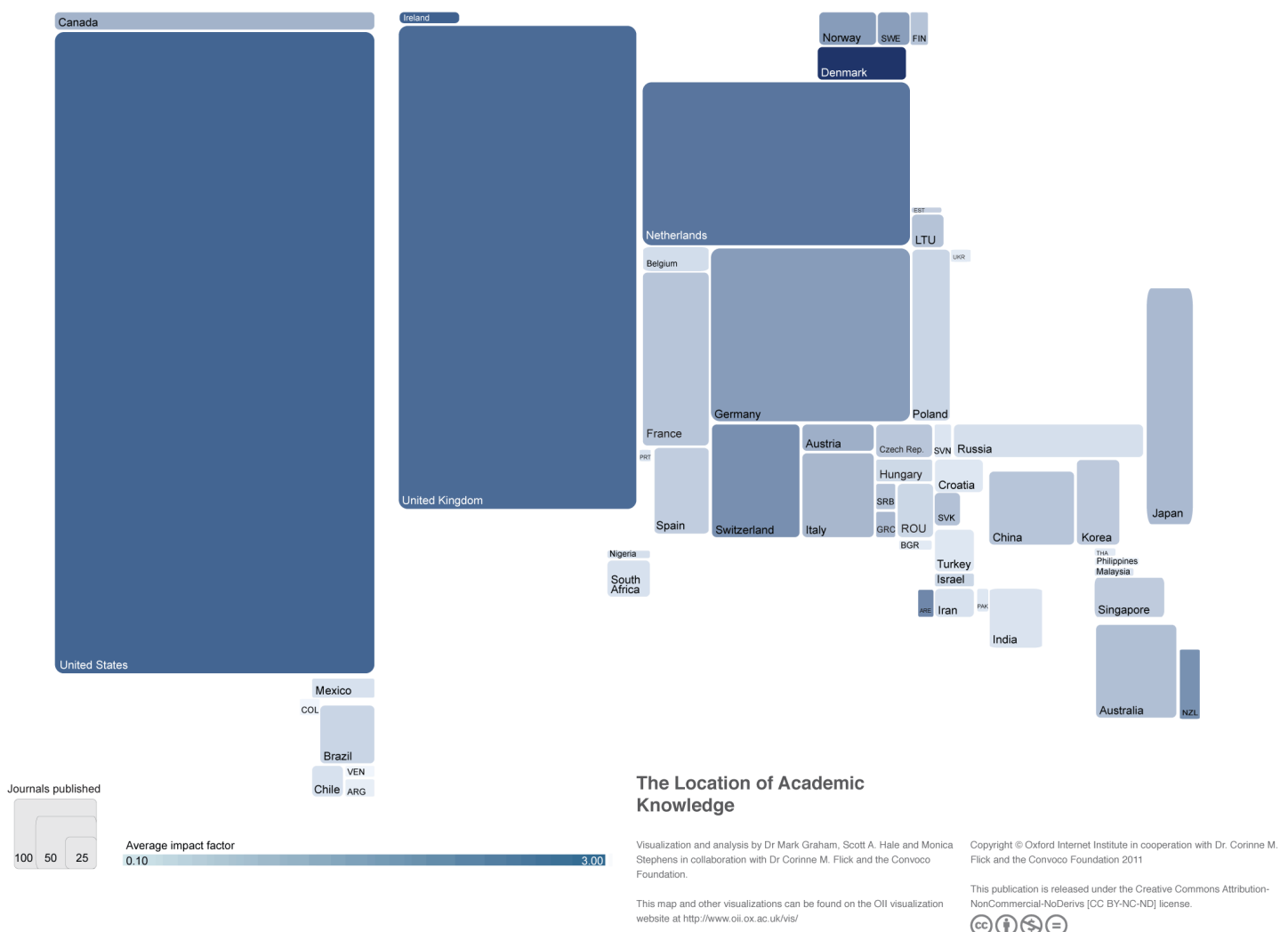
Source: © Oxford Internet Institute in cooperation with Dr Corinne M. Flick and the Convoco Foundation (2011), http://geography.oii.ox.ac.uk/wp-content/uploads/2013/06/download-3.png

This infographic shows the geographic distribution of academic knowledge. On one level it demonstrates the relative low share of academic knowledge produced outside of Europe and North America (regions that of course account for many of the world's leading universities and extensive research funding), with Africa, Latin America and South Asia barely visible. However, on another level it also indicates the 'measurement gap' in what is counted as academic knowledge. Like many other studies and measurements of global research, data is derived from the Web of Science index of journals that excludes the vast majority of Southern-published journals. A 2012 calculation revealed that only 4 per cent of Latin American peer-reviewed journals were included in the Web of Science index (Alperin 2014).

Opening up knowledge addresses in some ways the related visibility gap, but progress has been patchy. A recent CODESRIA study on Open Access in Africa (Ouya and Smart 2006) showed that, though there has been quite rapid

growth in Open Access publication in Africa, opportunities to disseminate and aggregate research for global visibility are constrained. Only 20 out of 56 African countries in the study have any Open Access repositories, and four countries (South Africa, Kenya, Egypt and Nigeria) contribute over 60 per cent of the total repositories in the continent.

Universities and research institutions remain the main drivers of most Open Knowledge initiatives. In Francophone Africa, libraries and universities are considered the main actors in the development of the emerging Open Knowledge movement (Decung and Mukuku 2016). Some Open Knowledge initiatives like Observ'action and Anacaonas have a commitment towards diversifying the types and formats of knowledge they make accessible through their platforms, including videos, podcasts, infographics and grey literature from local civil society organisations, but they are not the norm.

The issue of language is also an important one which has the potential to create inequalities in the visibility and accessibility of knowledge. There are over 2,000 languages spoken in the African continent alone. Yet English remains the dominant language in development and this creates enormous imbalances in the way knowledge is produced, disseminated and valued.

The Open Knowledge Hub project started from the assumption that voices, experiences and perspectives of non-English speaking actors are often excluded from development, and Open Knowledge approaches again risk exacerbating this state of affairs if they do not become more multilingual. The Francophone scoping study (Decung and Mukuku 2016) found some evidence to support this view. Digital journals now exist in some Francophone African countries which has created opportunities for increasing the visibility of local research, but their number is still low (50 in the whole of Francophone Africa compared with 217 English language journals in Nigeria alone). Similarly, research in non-English languages is not easily funded which forces many African researchers to publish in English. Francophone African researchers were found to prefer to publish in English in Northern journals as it is considered more prestigious, and the authors of the study argued that due to the dominance of the English language in African development research, donors do not invest in research in non-English languages, perhaps resulting in a 'brain drain' of academics towards Northern countries (Decung and Mukuku, 2016).

Interestingly, multilingualism was not recognised as an important consideration in our Latin American scoping study. Despite many portals producing and/or disseminating information in more than one language in Latin America, surprisingly only one interviewee, Miguel Saravia (representing CONDESAN, Mountain Forum and InfoAndina), mentioned 'multi-linguicism' as a strength (Clements 2015).

However in our work with a cross-section of partners we identified other ways in which language may be a barrier to knowledge sharing:

- New terminology associated with Open Knowledge, including those of licencing, Open Data and publishing;

- The complexities of the technical systems and the related technical definitions;

- The sharing of development themes and concepts which may not have a direct equivalent in different languages or cultures.

We found that the convergence of these characteristics could be alienating for development actors and knowledge producers who are new to Open concepts, who may not be skilled or familiar with digital technologies, or work in specific contexts with specialist audiences.

The project tried to address these obstacles through a series of participatory processes. We aimed to build understanding and learning from each other.

Open Data, Content and Knowledge concepts were a key component of the learning events (Manjunath 2015), bringing actors and expertise from outside the partnership to share local, regional and international perspectives on the legal, practical and organisational impacts of engaging with Open Data approaches.

In developing the technical requirements, we:

- Brought together editorial and technical staff to build a shared understanding of issues and requirements within participating organisations;

- Utilised the technical developers from partner organisations in developing shared systems and tools to help build knowledge and embed skills within the sector, as well as enhance sustainability of the technical systems;

- Co-constructed the data models (labelling and scope) for the content which would be shared, allowing organisations to reflect on good practice and address gaps when sharing content more widely;

- Developed tools to minimise the need for detailed technical support;

- Provided advice and support to organisations developing new data structures and editorial processes;

- Built tools to link and map content, rather than force all collaborators to fit one standard or protocol; and

- Developed projects which were specifically about peer-to-peer data sharing.

We recognised that the information systems which organisations build are often focused on the needs of their own target audiences and contexts. Bringing in a new, broader, global (geographic and sectoral) perspective is challenging, and requires organisations to think about how they label, manage and publish their content. Our taxonomy mapping work required partners to take a broader view of their content and develop editorial and technical systems which support improved data sharing. A good example of this work came from a subset of partners with a shared interest in climate knowledge sharing. The project partners – Caribbean Community Climate Change Centre (CCCCC), the Secretariat of the Pacific Regional Environment Programme (SPREP)[15] and Renewable Energy and Energy Efficiency Partnership (REEEP)[16] – had identified an opportunity to learn from each other to improve how the climate change information they held was being structured and described. They also recognised that working together to address this issue should not only improve their ability to share their own information effectively but could also make a wider contribution of value to other knowledge brokers in the sector (Stanley 2016).[17]

Open Knowledge capacity issues

Contributions from consortium partners were key to the success of the GOKH programme. They were bound together by their belief that there is a strong need for freely available, structured digital content that derives not just from large institutions based in Europe and North America, but from a range of global, diverse perspectives. However, as we have described, the partners were geographically and thematically different.[18] They also differed in size and ability. The resources available to the GOKH programme to enhance organisations' skills was limited and we deliberately selected partners who had the best technical skills available.

However, whilst GOKH was not a capacity-building project, it would have been impossible to have delivered it without supporting the needs of partner groups. With limited resources, the programme focused on shared mutual learning that benefited the broader working practices and capabilities of the partners. To achieve this, the project built on learning from previous programmes such as MK4D (summarised in Brown, Vogel and Wilson 2010 and Itad 2007) to employ methods such as learning exchange visits that moved beyond the standard training course/workshop-type models of learning. Experience and learnings from two short-term staff exchanges involving Soluciones Practicas and the CCCCC are available (Hall 2016).

Common capacity issues raised across the partners included practical issues of connectivity and power outages. More specifically, partners reported issues of insufficient time being allocated to think through the work flow and consider what is needed to structure knowledge in ways that mean that they can be openly shared. It was also noted that adequate budgets were often not available to scope and deliver Open Knowledge approaches. Often the technical systems and business models being employed were not easily compatible with Open approaches – this often meant that even small interventions took more time to support and deliver.

In addition to operational concerns, GOKH partners reported common capacity challenges around organisational effectiveness. Both knowledge brokers and research organisations reflected on the difficulties of raising awareness and gaining high-level organisational buy-in to Open Knowledge approaches. However, pushing through Open Data policy so that practices are mainstreamed and embedded was seen as important to GOKH partners. Iryna Kuchma, Open Access Programme Manager, EIFL stressed this when she shared her experience of Open Access in developing countries,[19] 'Open Access policies need to be supported by top level management, faculty and students. They should be integrated in institutions strategic plans, processes, workflows and culture'. Kuchma went on to make the point that, 'We have built an infrastructure, but in order to have more digital content available, we need to work with universities and research funders to adopt more policies mandating Open Access to research output'.

Conclusions

IDS is known for its work in increasing availability and accessibility of global development research for policymakers and practitioners; in understanding the role that knowledge brokers and intermediaries play in the effective use of research for evidence-informed policy and practice; and in advocating for, and supporting, the capacity of this intermediary sector (Itad 2007; DFID 2014). The GOKH programme has allowed us to build on our work in this field, develop new networks and partnerships and improve our own understanding of these issues. It has been delivered at a time when the resources available for individual Open Knowledge projects has become increasingly patchy, with the closure of some intermediary services and limited funding for evidence and knowledge sharing. The resourcing and capacity needs of the Open Knowledge Hub partners identified during the programme support the view that inequalities exist in the ability of knowledge organisations to engage effectively in Open Knowledge and that these are contributing, in some cases, to a widening – rather than a narrowing – of digital divides (an overall assumption of the GOKH programme at the outset). For Open Knowledge to be truly reaching and representing all, it is crucial that it encompasses the multiplicity and diversity of knowledge and recognises that certain types of knowledge are considered more valuable, hence made more visible than others. If these issues are not addressed we again risk increasing inequality in the accessibility and availability of diverse knowledge (Berdou 2015).

However, we believe that the Open Knowledge Hub project also clearly demonstrates the benefits of collaborative working. Open Knowledge is a cross-cutting issue and we have seen how working in partnership can strengthen understanding of needs and contexts and make a broader contribution to partners' effectiveness and capabilities as knowledge sharing organisations.

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Making the 'Evolutionary Leap': Using Open Knowledge Approaches to Improve Development Outcomes

Credits

This Practice Paper In Brief was written by Alan Stanley, Kelly Shephard, Nason Bimbe, Paola Brambilla, Henry Rowsell, Peter Mason and Helen Bailey (IDS). With additional editorial support from Hannah Corbett (IDS).

The Open Knowledge Hub project aims to improve the supply and accessibility of content that supports evidence-informed policymaking and practice in international development. It builds on emerging approaches from the open access and open data movements to create a new open and collaborative 'hub' for sharing of development knowledge whilst facilitating peer support and shared learning between project partners.

To find out more go to OKHub.org or email info@okhub.org. More learning resources are available at OKHub.org/learning.

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