Overcoming the barriers to accessing research collections in the developing world: an international collaborative approach

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Abstract:

"Hard financial times" face academic libraries in the developing world constantly. It is almost a way of life but nevertheless they manage to survive and flourish. This paper describes the work of INASP (the International Network for the Availability of Scientific Publications) – an organisation established by the International Council for Science (ICSU) in 1992 as a direct response to a study on how to meet the information needs of scientists in the developing world. INASP works to develop sustainable models which: (a) ensure developing countries are part of international research networks; (b) strengthen the skills of individuals working in and supporting research; and (c) improve the technology that helps communicate research. This paper will concentrate on INASP's work in two specific areas: its work to provide access to high-quality peer reviewed international literature via deeply discounted country wide licensing through PERI (INASP's Programme for the Enhancement of Research Information" which has been described by Chan and Costa (2005) as "the most comprehensive initiative of access to worldwide research"). In addition to providing access to commercial journals INASP's work in helping libraries discover free resources (including access to online LIS training materials) will be described. The second aspect of INASP's work to be discussed will be its support for the creation and strengthening of library consortia in low-income countries of Africa and Central America to help evolve collaborative solutions to sustainable development

The countries of Sub-Saharan Africa, with a few exceptions, face a multitude of problems: widespread poverty, inadequate housing and sanitation, high illiteracy rates, limited education opportunity, foreign debt, natural and man-made disasters, food shortages, heavy disease problems including HIV/AIDS, and high infant mortality. The long-term key to solving these problems is not external donor support but rather greater diffusion of

information and knowledge and the creation of an educated and skilled workforce able to continuously upgrade and adapt skills coupled with a modern information infrastructure. A Commision for Africa report expressed it thus: "Scientific skills and knowledge enable countries to find their own solutions to their own problems…and, critically, they unlock the potential of innovation and technology to accelerate economic growth, and enter the global economy." [1]

INASP (www.inasp.info) is the International Network for the Availability of Scientific Publications. It was established by the International Council for Science (ICSU) in 1992, as a direct response to a study on how to meet the information needs of scientists in the developing world. Since 2003 INASP has been a limited company in the United Kingdom and was registered as a charity in 2004.

INASP's vision is simple: effective access, use, dissemination and communication of information are key drivers of democracy, good governance and poverty reduction.

In many countries, research information, like all other information, is a commodity that is available in abundance. Although the situation is changing dramatically, it is still true to say that researchers in developing and emerging countries have been largely excluded from participating in the global research communication cycle. Since 2001, through our PERI initiative (Programme for the Enhancement of Research Information) which has been described by Chan and Costa (2005) [2] as "the most comprehensive initiative of access to worldwide research", we have worked to enable researchers in developing and emerging countries to join the global research communication cycle and thus take their place in the research community.

PERI supports capacity building in the university and research sector in developing and transitioning countries by strengthening the production, access and dissemination of information and knowledge. Working in every part of the research communication cycle from (availability, access, use, research and dissemination) it offers a multi-dimensional approach across four programme areas: information delivery/provision, library and ICT development, publishing and Evidence-informed policy making. [3] This paper will concentrate on two specific areas: information delivery and library consortium development. I will describe these activities in a little more detail but a few words first about our approach.

INASP relies on our extensive network of "in-country coordinators" to promote and manage these activities. Coordinators are ideally drawn from bodies that already have a national mandate in supporting research capacity, such as ministries of science and technology, ministries of education, national academies, professional associations, library consortia, university grants commissions, national research and education networks and beacon national universities. The teams are not employed or paid through PERI. Rather PERI supports their existing work, within their communities' identified needs and strategic and policy frameworks. Embedding the activities in this way within national and organisational strategies and engaging individuals who are influential leaders in the national academic community are critical for success.

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[1] Our common interest: report of the Commission for Africa (March 2005). Available at
http://allafrica.com/sustainable/resources/view/00010595.pdf
[2] Chan, L. & Costa, S. (2005) Participation in the global knowledge commons: challenges and opportunities for research dissemination in developing countries. *New library world* 106**,** 141-163
[3] For more information see http://www.inasp,info

The partnerships between participating countries and INASP work towards activities being led, implemented and sustained by the countries themselves. This involves a significant, long-term commitment of expertise, time and money from both sides. As it is not possible to work with all eligible countries in this depth, they are divided into two groups: a group of c. 22 "partner" countries, and a larger number of "network" countries. In order to identify eligible countries we base decisions largely on the United Nations *Human Development Index* (HDI) and the World Bank *Gross Domestic Product* (GDP).

INASP has sought to address the issue of isolation by providing through PERI sustainable access, either free or deeply discounted, to international research via cross-discipline e-journals, e-books and databases from over 50 international academic publishers/aggregators on a country by country basis.

INASP partners with country coordinators who represent the research and library communities, and who identify the resources required within their country. On their behalf, we ***negotiate*** (or support local negotiation) with publishers and other content owners to obtain country-wide access to resources at a price that is appropriate for the recipient countries. Some publishers make their content free to the countries included within this programme; others are obtained at a significant discount on the normal subscription rates. Following in-country trials and promotion, the coordinating teams make selections based on the needs of researchers and their budget. The countries themselves pay for the subscriptions at the price negotiated by PERI on their behalf. Although there are occasionally unforeseen circumstances or political pressures which prevent or delay payment, in 2010 93% of subscriptions were paid by our partner countries. Promotion, monitoring and evaluation of usage are strongly advocated, so that long-term strategies for sustainability can be established.

This model works to build relationships between libraries and research publishers/aggregators that are independent of donor/NGO/charity input. We work with publishers to increase their awareness and responsiveness to the specific context and challenges faced in developing and emerging countries, and we work with Country Coordinating teams or consortia to build on or develop the necessary networks, systems, knowledge and skills to make research available for their end users.

Working with our country coordinating teams, we also help to identify funds for these subscriptions, so that the content is all free at point of use. Nearly all of the resources are available on a countrywide license basis: this means that any educational, research or non-profit institution is eligible to access them.

This Programme now offers some 30,000 full-text journals, 5,000 full-text e-books and reports, and 26,000 abstracted journals from 50 international publishers (including Springer, Taylor & Francis, Wiley-Blackwell) and aggregators (including EBSCO, JSTOR, Project Muse). Document delivery is available via the British Library. Though our Journals Online initiative[4] some 550 journals from developing and emerging countries are also accessible. Resources increase as we respond to requests for new resources and as new publishers join the Programme.

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[4] See http://www.inasp.info/jols

In addition to commercially published resources we also promote information about multi-disciplinary and subject-specific online resources that are open access so available to all researchers in developing and emerging countries[5].

As at the end of 2010 the number of unique institutions registered for access to these resources was 1,303. The total number of full-text downloads in 2010 was 2,357,764 – an increase of 32% from the 1,786,218 downloads recorded in 2009. The numbers have grown steadily each year as the countries improve their Internet connectivity and are able to access the resources, but also as more librarians and researchers are trained to use and promote the resources and to work in the digital environment.

To achieve this degree of success we have developed strong partnerships with the publishing world. The relationship is mutually beneficial: we offer new routes for the dissemination of their research materials, provide a single payment / invoicing channel, and help them develop a greater understanding of the needs of developing and emerging countries; they for their part contribute significantly to the programme by providing usage statistics (COUNTER compliant), support and promotional materials and, in the main, are willing to help build local capacity and offer sustainable affordable pricing.

As part of our ongoing partnership with publishers INASP launched a joint initiative in 2008 with the Association of Commonwealth Universities (ACU) to establish Publishers for Development (PfD) [6].

PfD is a forum for information and discussion around the importance of access to information for development. Through a range of activities, it explores some of the unique challenges developing country librarians, researchers and publishers experience and also provides an opportunity for publishers to keep up-to-date and feed their input into the work all parties are undertaking to lessen the digital divide.

As stated in the first PfD Newsletter (September 2009) the focus areas are:

- strengthening and supporting dialogue between publishers and developing country researchers and librarians
- supporting and encouraging the design of resource interface options for low bandwidth environments to ensure that resources available are effectively accessed and used
- co-operating with publishing partners to encourage greater visibility, inclusion and contribution from developing country researchers to international publishing [7]

One fruitful area of cooperation has been in the area of bandwidth. Over the past 5 years the average webpage has increased by 300%. In developing country universities, the bandwidth available to an individual user will have increased by 20 – 60% – and this is from a very low starting point. Bandwidth is increasing slowly for developing country universities whilst bandwidth demands from their users and from websites, document downloads and on-line

[5] See http://www.inasp.info/list-of-resources-multi-disciplinary and http://www.inasp.info/list-of-resources-subject-specific

[6] Harle, J. and Powell, A. (2009) Publishers for Development: a new initiative. *Serials* 22(3), 214-219

[7] *Publishers for Development Newsletter*, v.1 issue 1, September 2010 See: http://www.inasp.info/media/www/documents/2010-PfD-Newsletter-1-1-w.pdf

applications are increasing rapidly. Indeed, in 2008 Aptivate estimated that the bandwidth available to individual university students and researchers in developing countries is 20 kb/s – which is about 1/100th the speed of a broadband connection to a typical UK home. A survey of 27 publisher websites found that the average page size was 250 kB, with the largest at 800 kB and the smallest was 20 kB. The average web page from this sample would take over a minute and a half to load. The real problem was the path the user had to follow to get access to the PDF article. While the PDF files represent valuable content for the user, the many web pages the user must navigate to gain access to the PDF usually represent little value. While universities may be able to influence the speed of access through the development of Internet policies at institutional level, it is the publishers of the journals, by optimising their journals' websites for users with slower connections who can have the greatest impact. Many publishers are now consequently designing their websites for low-bandwidth to make them small, faster, more responsive and globally accessible[8].

The key to the success of the programme is training to support activities associated with capacity development and sustainable access to e-resources. To this end INASP spends much time and effort in organising training workshops (either facilitated by external consultants or, increasingly, by local experts) in a wide range of associated areas and directed at different user groups – librarians, ICT professionals, and researchers. Indeed, during 2010, employing a cascaded training methodology[9], some 230 training events were held across all INASP activity areas. A total of 4,632 librarians and researchers from 1,101 institutions were involved.

Workshops/courses in the area of e-resources included:
- Sensitisation – an introduction/induction to PERI
- Monitoring and evaluation of e-resources
- Working together to support research (for researchers and librarians)
- Promotion/marketing of e-resources
- Copyright and licenses for librarians
- Bandwidth management and optimisation – importance of effective use of bandwidth available

We have learnt and continue to discover valuable lessons, namely that every country we work with has different needs in terms of: infrastructure and connectivity; e-resources required; training; funding (donor funding/self-funding) and differing models for sustainability.

We have learnt also that our approach and models have to be adaptable and scalable; that every publisher we work with is different with the length of negotiation varying greatly; and there is an absolute need to cascade availability through as many institutions to as many researchers as possible.

Before PERI, only a few affluent libraries could afford to subscribe to selected expensive e-resources but now most public university libraries in PERI countries are subscribing through a network at a much lower price; as a consequence less affluent libraries are now in a position to afford e-resources.

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[8] For more information about PfD see http://www.inasp.info.pfd
[9] INASP Travelling workshop methodology:
http://www.inasp.info/file/9672fb0f3f915df9911b8fa2d7926ec1/travelling-workshops.html and also
Ideas on the move: Weighing up the benefits of INASP's cascading training methodology
http://www.inasp.info/file/0dc3a697bc5d4234667a2114852231d5/ideas-on-the-move.html

A recent evaluation of the PERI programme conducted January-March 2008 found that as a result of the programme researchers feel more confident, less demoralised and more "on a par" with their peers abroad, and also that PERI had raised the status and power of libraries/librarians within universities as they now have come to represent the conduit or gateway to powerful and extensive scholarly resources within their institutions. In addition access to these resources has supported improved teaching in university settings and lecturers feel that such access has kept their teaching fresh and current[10].

"PERI has indeed brought about a dramatic revolution in the availability of resources for research. This has given a great boost to existing researchers, encouraged new and young people to engage in research, pushed the libraries and even network administrators to modernize their outlook, and has laid the foundation of a nationwide consortium of libraries. The usage statistics have surpassed our imagination by a very wide margin." Abdullah Shams Bin Tariq, Country Coordination Committee, Bangladesh INASP Consortium (June 2007)

We feel that the provision of affordable or free journals in online form to developing countries has been widely and successfully addressed. Resources are not only available through PERI but also through other organisations such as eIFL and international programmes such as HINARI, AGORA and OARE. Indeed a recent survey on research access in four major universities in Malawi, Kenya, Rwanda and Tanzania highlighted the fact that the availability of electronic journals was comparable to typical universities in the UK and Sweden. See Figure 1 below [11].

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[10] Evaluation of the Programme for the Enhancement of Research Information (PERI) (2008). Centre for International Development & Training (CIDT), University of Wolverhampton.
[11] Harle, J. (2010) Growing knowledge: access to research in east and southern Aftrican universities. (London, Association of Commonwealth Universities), p. 11 & 14

Figure 1 Availability of top 20 ISI ranked journals
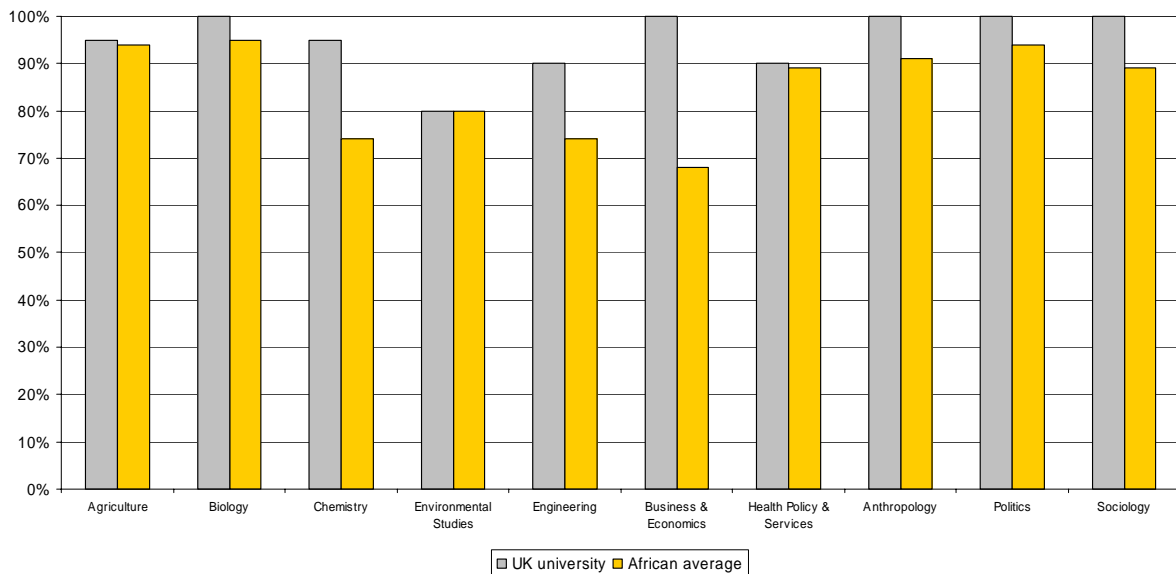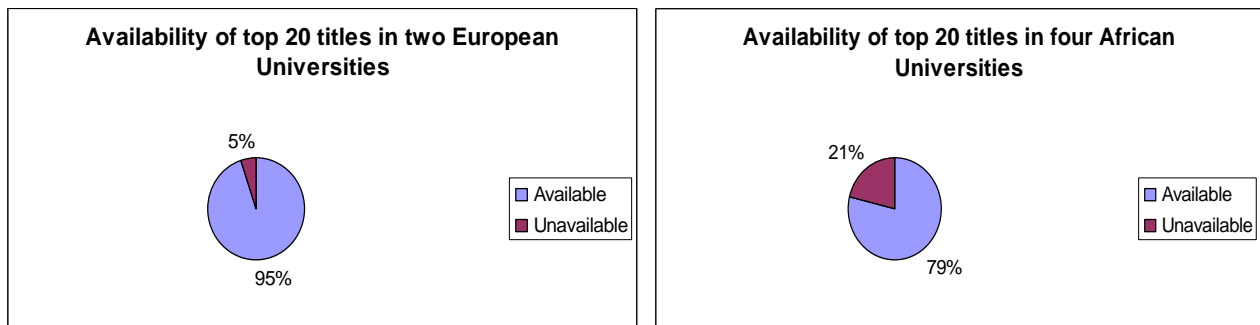
Although restricted to four major African universities the findings by Harle are likely to be applicable to other developing countries in the region. The question therefore is one of access rather than availability. Despite having comparable access awareness amongst staff and students is low. Indeed, in their responses to Harle's survey academics and students noted specific titles which they needed but were not acvailable. In fact, in the majority of cases the titles were actually accessible via the University's subscriptions. On average 72% of titles reported to be unavailable were accessible.

Harle suggests may possible explanations:

- Researchers feel that they're not well informed by the library, don't spend the time, or have the time, to explore what's there, and perhaps have been disconnected for so long, without access, that they assume this is still the case.
- academic reading cultures have been eroded – used to nothing being available, libraries being empty
- Low levels of research being done, so little reason to read
- Lack of time (teaching), lack of funding, lack of incentives, lack of writing/publishing skills
- Older academics unfamiliar with online environment – so don't encourage students to use it

- Not well skilled at searching and navigating
- Databases are complex, many publishers, platforms, aggregators, current issues, back-files, moving walls…
- Rely on Google – low use of specialist indexes/search facilities. Again, little online time to explore

These findings were particularly disappointing for INASP especially as one reads: "Although libraries are actively engaged in training their users, 78% of those responding to the survey had not received any form of e-resource library training. One Tanzanian academic commented that 'Most of the staff and students are not aware of the availability of electronic sources and how they could be accessed. I have never heard about any seminar or workshop on the same. There are no efforts to educate library users on such sources"[12]. This is known not to be the case. At the University of Dar es Salaam, for example, there is a regular training programme for students with a good number signing up each time. The problem is the volume of training needed in relation to current staffing levels and expertise.

Clearly the problems lie on both sides, but Harle concludes: "while there is still scope for libraries to improve and re-invent their marketing strategies, awareness – and use – are unlikely to improve if there is insufficient demand and appreciation of the importance of journals over less scholarly online content" [13].

Under-use of electronic resources has serious ramifications – not just for the quality of research but also for maintaining the availability of these materials. If senior administrators do not perceive the value of these resources it will be difficult for funding to be sustained, let alone increrased.

The issue of sustainability and affordability of subscriptions is an important consideration. There is no doubt that the capacity of universities to maintain availability of these resources is crucial. INASP has from the outset adopted a "real-world" model which might be characterised as a collegiate strategic partnership model. We have worked on the basis of negotiating for country-wide access, and have accepted that some publishers will offer free access while others are willing to offer their materials at a discounted rate. We have accepted that as a country's GDP increases there may be a case for subscription levels to be increased proportionately as the ability to pay increases. We have not lobbied for free access, but have attempted to persuade our partner countries that they are in the real world and need to develop the skills and expertise to be able eventually to take responsibility for their own licensing and negotiations.

Many of the countries with which we work are recipients of significant sums of donor funding which are then used to purchase their annual subscriptions. While this has enabled them to make these materials available there is a concern that when this funding is reduced or withdrawn completely libraries will find it difficult to raise the necessary funding from within their own library environment. Indeed a colleague from Kenya who had been involved in the Ugandan library consortium development (CUUL) wrote recently: "*Lack of funding was a blessing in disguise to Kenya. It provided a serious challenge that facilitated innovative*

[12] Harle, J. (2010) Growing knowledge: access to research in east and southern Aftrican universities. (London, Association of Commonwealth Universities), p. 29

[13] Harle, J. (2010) Growing knowledge: access to research in east and southern Aftrican universities. (London, Association of Commonwealth Universities), p. 25

thinking resulting in a healthy and sustainable consortium. Member institutions of CUUL are still comfortable with the funding and hence not keen on supporting the consortium. The workshop provided an opportunity for participants to come up with strategies to deal with the challenge". She went on to say: *"the type of funding for CUUL is different from what INASP funding approach. For CUUL, SIDA-SAREC has been paying 100% for the resources for too long. They should have given seed money (for 2-3 years) or gone for cost-sharing (partial funding). INASP on the other hand focuses on a specific project to build capacity which is equivalent to seed money. This helps us to budget seriously for sustainability (life after the donation)"*.

In recognition of this reality the Tanzanian library consortium (COTUL), when negotiating the latest phase of SIDA funding, mutually agreed that 25% of the funding for e-resources (rising to 50% in the second year of the programme) should be met by COTUL members as part of their efforts towards sustaining local accessibility.

For the reasons above an important part of our remit or responsibility is to help strengthen the mechanisms or infrastructure that will support the continued availability of e-resources. To this end a key element of the work of INASP's Library Development activity is the development and strengthening of library consortia to enable pooled funding, collective purchasing, advocacy for proper financial support and other collaborative activities which will help to strengthen the librarian's role as a key facilitator in information resource assessment, access, use, management and development.

Between September 2009 and November 2010 we organised consortium development/strengthening workshops in Ethiopia, Tanzania, and Uganda. A similar workshop is planned in Bangladesh. In addition, two workshops to support the development of a specialised economics libraries consortium / network were organised in 2010 in Vietnam.

Also, in the context of library consortia, we were aware of the "Guidelines for Library Consortia in South and Central America Project" developed by the IFLA Academic and Research Libraries Section, and had read that Awilda Reyes and Stephen Marvin, former Secretary of the Section were working together to visit and conduct workshops in Argentina, Chile, Costa Rica and Guatemala[14]. Following discussions with Marvin, a productive collaboration was initiated in which it was agreed that INASP would fund three additional workshops in Bolivia, Nicaragua and Honduras. These were in the last quarter of 2010, and follow-up workshops are already being planned in Honduras and Nicaragua in 2011.

Each workshop varies somewhat in content since the countries may be at different stages of consortium evolution: a consortium may not even exist at all, or it might be "dormant", at an embryonic stage of formation or relatively well developed and stable. The workshops also recognise the reality that consortium development varies and what is appropriate for one country or region may not be suitable for another. It is for this reason that wherever possible we have worked with facilitators from partner countries who are familiar with the problems encountered in the region and who themselves have significant experience of / involvement in consortium development in their own country. For example, a senior librarian from CARLIGH (Ghana) facilitated the workshops in Ethiopia and Tanzania, and an expert from

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[14] Guidelines for Library Cooperatives in Latin America—Early Report. *Academic and Research Libraries Newsletter, 44, p.6.* See: http://www.ifla.org/files/academic-and-research-libraries/newsletters/december-2009.pdf

KLISC (Kenya) co-facilitated the Uganda workshop. A local expert from Costa Rica co-facilitated the workshops in Central America.

However the common denominator is that all of the countries recognise the growing importance of developing formal channels of communication and collaboration rather than relying simply on more traditional informal cooperation.

Depending on the particular situation our interactive and highly participatory workshops cover any or all aspects of consortia: the benefits and challenges of working collectively (e.g. gains through economies of scale; cooperative collection building and resource sharing); discussion of consortium activities to date; review of any existing formal documentation; startup challenges (fear of losing autonomy; distribution of responsibilities; conflicting interests; selling the idea etc.), startup process (e.g. aims, mission, action plan; legal frameworks; membership; management structures; funding); sustainability (e.g. financial management; cost-sharing models; enhancing negotiating power); innovative consortial activities (e.g. human resource capacity building; digitisation; shared IT development; consortial repositories); and marketing. advocacy and strategic planning. Case studies from the appropriate region are also incorporated to provide illuminating examples of "what went right/wrong" and solutions adopted for common or similar challenges.

There is still some way to go before it is possible to say that strong and successful consortia are functioning in each of our partner countries. However, we are convinced that the key to continued availability and access to essential resources is the development of strong consortia, with committed membership, good leadership, effective governance structures, and recognised at the national level as the main body for e-resource decision-making and advice in the academic and research sector.

This paper has described just two areas of INASP's activities, but of course we operate across all aspects of the communication research cycle. Our strength and success is in part due to this holistic approach to our work with partner countries but additionally our work is characterised by:

- deep understanding of the informational, technological and capacity brakes on and blocks to participation and progress towards locally developed sustainable and equitable solutions in developing and emerging counties
- practical and collegiate engagement with professionals in both the developing and developed world to 'grow' sustainable solutions collaboratively, rather than impose them
- willingness to engage proactively and collaboratively with kindred organisations and funder/donors.

Only in this way can we hope to overcome the barriers to research and contribute to the reduction, if not elimination of the digital divide.