

Nuffic expert meeting
'A Changing Landscape. Making support to higher education and
research in developing countries more effective'
The Hague, 24-25 May 2005

Enhancing Access to Information in Higher Education and Research

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Introduction

New information and communications technologies (ICTs) are coming to be seen as essential tools to help us win the fight against hunger, to combat poverty, and to achieve sustainable human development. They are increasingly being rolled out in academic and scientific institutes as tools for teaching, learning, collaboration, and research. More generally, enthusiasm for ICTs in development can be seen in the massive explosion in the number of knowledge and information projects and initiatives¹ - and in the rapid and appearance of 'e' words like eDevelopment, e-science, e-learning, e-health, e-agriculture, e-mail, e-collaboration, e-commerce, e-tcetera.

The International Network for the Availability of Scientific Information (INASP²) is a relative 'old timer' in this business being established in 1992 by the International Council for Science (ICSU) to help improve access to information and knowledge through capacity building in emerging and developing countries.

The current INASP strategy is informed by the results of the first World Summit on the Information Society (WSIS³) whose Plan of Action calls on the global community to "encourage initiatives to facilitate access, including free and affordable access to open access journals and books, and open archives for scientific information" and, under the heading E-science, to "promote electronic publishing, differential pricing and open access initiatives to make scientific information affordable and accessible in all countries on an equitable basis."

This paper briefly introduces INASP and some of its activities in the area of scientific information. It draws on a recent review of the Programme for the Enhancement of Research Information (PERI) to assess the effectiveness of its work. Some conclusions and experiences are drawn regarding the contributions of information programmes in the wider international cooperation context.

¹ The UN ICT Task Force is a good starting point: www.unicttaskforce.org. See also: www.wsis-online.net/science/home_EN/

² INASP: www.inasp.info

³ World Summit on the Information Society: www.itu.int/wsis/

Introducing INASP

After 12 years operating as an ICSU programme, INASP was legally established as a charity in 2004 with a mission to enable worldwide access to information and knowledge with particular emphasis on the needs of developing and transitional countries.

It works with partners around the world to encourage the creation and production of information, to promote sustainable and equitable access to information, to foster collaboration and networking, and to strengthen local capacities to manage and use information and knowledge

In terms of the typology of higher education and research support programmes advanced in the background paper, INASP programmes are mainly directed to information access, dissemination and management 'capacity building' purposes that aim to address local deficiencies or to introduce new opportunities. Other activities within INASP facilitate cooperation and networking, particularly among information practitioners working in health and rural development where multi-directional information exchange and learning is a major aim.

In our strategic framework 2005-2010, we set ourselves the following objectives:

- Improve access to scientific and scholarly information. The overall aim of these activities is to make wide access to international resources affordable and sustainable in developing countries.
- Catalyse and support local publishing and information exchange. The overall aim of these activities is to enhance access to information created in developing countries.
- Strengthen local capacities to manage and use information and knowledge. The overall aim of these activities is to strengthen the abilities of educators, researchers, students, publishers, and librarians to most effectively organise, manage and disseminate information and knowledge.
- Foster in-country, regional and international cooperation and networking. The overall aim of these activities is to strengthen collaboration and networking within and across countries.
- Advise local organisations and other agencies on ways to utilise information and publishing to achieve development goals. The overall aim of these activities is to build on the lessons learned and experiences already gained to help ensure that future programmes and projects are as viable and sustainable as possible.

In its activities, INASP focuses on the general area of scientific, scholarly, and technical information. It also pays particular attention to sectors like health, rural development, and education that are highlighted in the millennium development goals.

INASP sees itself as a networking organisation and an enabler. We seek to leverage networks of partners to accomplish specific tasks and to strengthen and mobilize local capacities. In operational terms, we operate through the following mechanisms:

- Country- and sector-focused support for networking, accessing, sharing, and publishing of information and knowledge;

- Strengthened efforts of information and communication 'enablers' – individuals and organisations in developing countries that support research, science, education and development;
- Skills and capacity development in areas of information networking, accessing, sharing and publishing;
- Providing advisory and liaison services and acting as an information exchange point and clearing house on information and communication issues in development;
- Partnerships and joint ventures with other organisations.

About PERI

During 1999 and 2000, researchers, academics, and librarians from developing and transitional countries approached INASP seeking assistance in information production, access and dissemination utilising new ICTs. After a consultation period and a one-year pilot phase, the Programme for the Enhancement of Research Information (PERI) was established in January 2002 to:

- Facilitate the acquisition of international information and knowledge;
- Improve dissemination of national and regional research;
- Provide awareness or training in the use, evaluation and management of electronic information and communication technologies;
- Enhance skills in the preparation, production and management of journals.

With in-depth activities in twenty countries and other collaboration in a further forty countries worldwide, PERI strengthens research capacities in developing and transitional countries by reinforcing local efforts to produce, disseminate and gain access to scholarly information and knowledge.

It does this by bringing affordable 'global' information to researchers in developing countries, by stimulating and supporting the publication and dissemination of in-country research findings, and by providing information and communication skills training for researchers, practitioners, librarians and publishers. A key element is to strengthen local capacities to design and deliver training and to effectively manage countrywide activities that use information to enhance research.

PERI prioritises activities that assist individual researchers, scientists, educators, and scholars to most effectively create and use information and knowledge (these are the programme's 'end user stakeholders'). PERI reaches them by working with and through 'enabling stakeholders' such as librarians, information officers, IT managers, publishers, editors, and their professional bodies.

Work on PERI is organised around three main components: delivering information (access), publishing and disseminating local research, and ICT training. In each country, PERI activities are planned and managed by nominated country focal points and teams (country coordinators). INASP provides overall coordination and review, supports coordination at the country level, and fosters targeted research and development.

What does the Programme look like? Here we provide some contours and an outline of the PERI 'landscape.'

The 'access' component is essentially about local institutions, usually libraries, obtaining affordable access to international electronic resources, mainly databases and full text journals. Here, INASP acts as a broker, working with the local institutions to identify needed resources and with international publishers to negotiate country access licenses at rates that can be afforded locally. The primary communities 'targeted' are researchers, university libraries and information managers within research institutes and universities. However, given the countrywide nature of the services available, the programme is normally open to any researcher, academic or professional from a non-profit environment. Major challenges encountered are linked to the use of the resources as well as the financing and management of the country access licenses.

In this component, there are 19 participating publishers and information providers, providing heavily discounted (96.4% on average) licenses to use their content. As of 31 December 2004, 661 institutions from Africa, Asia, and Latin America were registered and 'actively' using these international journals and other resources, as follows:

Bolivia	28
Core d'Ivoire	2
Cuba	48
Ecuador	19
Ethiopia	24
Ghana	26
Kenya	55

Malawi	14
Nepal	90
Pakistan	175
Rwanda	6
Senegal	16
Sri Lanka	28
Tanzania	37

Uganda	24
Vietnam	17
Zambia	15
Zimbabwe	37
Total	661

The 'publishing' component aims to strengthen the efforts of scientific and scholarly editors and publishers in developing countries to more effectively produce, publish and disseminate research information. The intention is to improve the quality of research and scholarly publishing in developing countries, helping to make it more viable and more sustainable. The emphasis is on skills development via training (either in workshops, exchange visits or conferences) and the development of best practice via publications and information sharing and dissemination.

The most visible publishing activity is African Journals Online⁴ that indexes around 200 peer-reviewed journals from 21 African countries. AJOL is designed to showcase African research results to international and African audiences and to facilitate full text online publishing for journals interested in this. People registering as users of AJOL continued to grow in number— 3440 signed up in 2004 (of which 2000 from Africa).

The 'training' component is essentially about the development and delivery of various training courses to 'end users' like researchers, academics and editors in developing countries. To ensure that modules are adapted to local conditions, local information 'enablers' are trained and supported to become the frontline trainers in a country or region and to deliver their own local, national and regional courses. Under this component, 7 standard training workshops (65 plus workshop units) have been

⁴ see www.ajol.info. In 2005 overall management of AJOL will pass to an African organisation.

developed using a 'travelling' or cascading methodology in which trainers from the countries co-facilitate chains of workshops in several countries. In 2004, INASP supported the delivery of 32 training events reaching more than 700 information professionals, academics and researchers from around 250 institutions.

The following table gives an overall summary of some usage and other transactional data available to INASP⁵:

Summary of Usage 2002-2005	Totals		
	2003	2004	cumulative 2002-2004
All Countries			
Separate user sessions	61,696	164,873	226,569
Searches Performed	206,403	377,229	583,632
ToCs downloaded	18,848	61,645	80,493
Abstracts downloaded	136,846	222,611	359,457
Articles downloaded (PDF)	70,157	204,822	274,979
Articles downloaded (HTML)	97,292	165,003	262,295
Total articles downloaded	173,357	370,202	543,559
AJOL registrations	3,881	3,452	7,333
AJOL titles listed	63	36	214
AJOL documents delivered to these countries	697	2,303	3,000
AJOL documents supplied by these countries	692	2,198	2,890
National workshops held	23	19	58
Local workshops held	5	10	24
Regional publishing workshops held	0	3	3
Trainees/participants	526	720	1,840

Reviewing PERI

In mid 2004, we carried out a mid-term review of PERI, with the following objectives:

- Document and assess progress towards goals and objectives and so learn from the implementation and management of the programme;
- Establish appropriate data and indicators for future monitoring and evaluation;
- Help identify appropriate priorities and directions for the next phase;
- Share information and learning with PERI stakeholders, funders and other interested organisations or individuals.

The review took a participatory, capacity strengthening approach and was designed and implemented by key stakeholders from participating countries, sponsors, and INASP. Five areas were examined:

- **Relevance.** Do PERI's current components meet the needs of the research community, and are they complementary, appropriate, relevant and effective?

⁵ One challenge we face is to identify suitable indicators of impact or performance for such information activities. The PERI review suggests that very few of the institutions we work with collect or have access to reliable data on information usage and take up.

- **Usage.** Are PERI services and resources being used and why/how?
- **Management.** Is PERI being managed and structured in an effective way? i.e. roles and relationships among INASP, country programmes, stakeholders, funders, etc.
- **Sharing.** Are experiences and lessons being shared and learned?
- **Sustainability.** Are the activities currently supported by PERI becoming, or likely to become, sustainable within countries?

Improving PERI

The goal of PERI as expressed in its Log Frame is “Improved research and teaching in developing countries that contributes to poverty eradication”. Although the majority of stakeholders reported that PERI had contributed positively to research and academic activities in their institutions, very few could provide any definitive evidence of this. A fairly typical response (from a questionnaire respondent) was that “PERI resources included some of the core journal titles wanted by our users. We, however, have not documented this. But it is indisputable that without any current journal subscriptions, PERI has been providing a much needed service.”

It was clear that current needs assessment, monitoring and evaluation is not sufficient to give a true picture of the use or impact of PERI. This is a significant gap in the programme with very little monitoring or evaluation information and data of any sort being collected at the ‘front end’ in the countries. The data that INASP has is partial and provides quantitative data on numbers of journals, searches, trainees, workshops, article downloads, documents delivered, etc. It does not begin to systematically answer questions of impact, especially the impact on the capacities of research workers.

Nevertheless, drawing from the qualitative data collected, the review team concluded that the activities supported by PERI do generally meet the needs of its stakeholders and that much progress has been made⁶. The team identified five areas for improvement: Embed PERI within its wider community, improve programme documentation, increase use of its services and resources, develop evaluation and impact indicators, and support progress towards sustainability.

Embed PERI within its wider community

Management of the programme in developing countries was often found to be concentrated in some professional groups – notably librarians. To embed PERI more effectively, it needs stronger relations with other stakeholders, particularly:

- **Policy makers:** working to ensure ‘buy-in’ and enhance the link between PERI activities and national and institutional research strategies, including help in

⁶ The full report is available online at www.inasp.info/pubs/PERIreview05.shtml

identifying or mobilising the potential funding from government, institutions, faculty/departmental funded projects or sector-wide investments.

- **Enablers:** working with information professionals to enhance nation-wide involvement and achieve greater sustainability in all areas. This could also include working with library schools to reinvigorate librarian education.
- **End users:** investigate if PERI should also directly engage with communities who use research information (but who may not be university-based or do not use libraries, or are not researchers or scholars in the traditional sense.) For example, non-governmental organisations, government agencies and ministries, research networks, national academies, scientific associations.
- **Sister organisations:** closer collaboration and cooperation between PERI and similar initiatives could increase complementarity among the initiatives, and could assist all the initiatives to meet demand by mobilising needed capacities and resources in more effective and efficient ways.

Improve programme documentation

In terms of programme management and coordination, many of the challenges reported during the review could be resolved by providing clearer documentation on the planning, implementation and evaluation of the programme. Areas to improve included: improving and simplification of all existing documentation including contracts, MOUs, financial arrangements; joint development of a 'road map' with each participating country setting out goals, milestones, log frame, standards of practice, commitments, moves toward self-sustainability, etc; and sharing and archiving of case studies, best practice, ideas, etc, relevant to PERI activities.

Increase use of services and resources

Although there are areas of significant use of PERI activities and resources, the team found a lot of variation across countries, institutions, and individuals. Increasing uptake relies on two crucial factors. First, having a better understanding of the actual needs and information-seeking behaviour of users and the reasons for their use or non-use of resources or services provided through PERI. Second, being able to mobilize and effectively deploy sufficient capacities within INASP and the country coordination teams. Areas to improve included: promotion and awareness-raising; minimising the impact of poor infrastructure by, e.g., encouraging optimum utilisation of the existing bandwidth; ensuring that recurring minor technical ('last click') problems such as changes in IP addresses and difficulties with passwords do not prevent access to resources; researching user demands and information seeking behaviour, and engaging in partnerships with other groups and networks that may be able to get closer to the end users.

Develop evaluation and impact indicators

The review process clearly demonstrated the need to enhance needs assessment, monitoring and evaluation, in order to gain better insight into the use and effectiveness of the services offered and to identify emerging new needs. It was recommended that a multi-stakeholder team from the wider PERI community be set up to formulate

appropriate indicators and measurement tools, and that country efforts to measure usage and uses of PERI-supported activities be encouraged and supported.

Support progress towards sustainability

PERI is intended to provide initial support for countries to enhance research information, with the objective that the activities eventually become locally sustainable. To achieve this, it is recommended that PERI more strongly involves research and scientific communities in the planning, implementation and assessment of PERI activities so they take more ownership of the activities and become strong advocates for them. It also recommended that country capacities are strengthened by developing a pool of local fund raisers, negotiators, advocates and trainers.

Making Information Support More Effective

As the background paper for this meeting indicates, the development community has identified notions like ownership, partnership, demand-orientation, accountability and coherence as necessary to underpin any development intervention.

This is part of an emerging 'new' approach to international development cooperation that is focused on quality and effectiveness: In 2002, former Dutch development cooperation Minister Herfkens⁷ argued that development agencies are finding more effective ways to address development. They are adopting different roles, acting as partners not donors. They are paying more attention to processes, building local expertise instead of providing technical assistance, focusing on qualitative rather than quantitative results, and more generally reforming the way they work and who they work with.

The 'ICT for development' community was relatively slow to pick up on these developmental concerns and trends, perhaps thinking that a focus on technologies and projects could 'leapfrog' development processes in the same way that these technologies themselves may allow countries or institutions to leapfrog some ICT steps.

However, as has been argued in earlier papers⁸, development cooperation lessons and strategies call on us to look critically at how we design, formulate, and implement information and ICT-enabled development activities. In particular we need to adopt a developmental perspective (as opposed to an 'ICT' or information-driven perspective). This means:

- Focusing information and ICTs on research and development challenges – in areas like health, education, food, debt, the environment, income generation, civil

⁷ Herfkens, E. 2002. Reforming technical cooperation for capacity development: Speech, February 2002. The Hague: Ministry of Foreign Affairs. www.minbuza.nl/default.asp?CMS_ITEM=MBZ426928.

⁸ Ballantyne, P.G. 2002. "eDevelopment, eCooperation: Connecting the worlds of information and development". *Compare*, 32(3): 365-379; Ballantyne, P.G. 2004. "Multi-Stakeholder Partnerships for ICT-enabled Development: IICD Experiences", In: Andersson, T., A. Engvall and B. Goransson. Globalisation and ICT: The role of government, private sector and civil society in an information society for all. Malmö, Sweden: IKED: 261-272 (www.iked.org); Ballantyne, P.G. 2003. Ownership and partnership: Keys to sustaining ICT-enabled development activities. Research Brief 8. The Hague: IICD (www.iicd.org).

participation, and governance. The slogan should be 'development using ICTs' rather than 'ICTs for development' (though ICT4D runs better of the tongue).

- Incorporating development notions like ownership, partnership, capacity development, demand responsiveness, inclusiveness, and joint action. These help ensure that information and ICT-enabled activities can be sustained in the longer term.
- Adapting to local needs and capacities and not to the technological or informational potentials on offer.

How do these mesh with some specific lessons from the INASP experience and what international cooperation lessons can we draw?

1. There is much interest in what knowledge managers call 'peer assists'. As part of the PERI review process, country coordinators reviewed programmes in other countries. There seems to be much more potential to expand this peer-to-peer networking across the programme, and especially to employ 'old timers' in the programme to help newcomers maximise the benefits to be obtained.
2. Information programmes like PERI are quickly taken up by information specialists and librarians which is natural given their focus. It is essential to their relevance and sustainability however that these information programmes actively engage and involve end user and other stakeholders as allies and advocates.
3. National information activities increasingly depend on several organisations working together, dividing tasks and responsibilities, and sharing skills and capacities. The libraries particularly are moving towards consortia as vehicles to generate funds and deliver joint services. Learning to work through local partnerships that respect and respond to different interests and ambitions is critical. Building these up into mechanisms that can fully 'own' and coordinate the various local activities supported by different sponsors and initiatives is also a major challenge.
4. Much of the focus of PERI and similar programmes is on 'access' to information content – a type of intellectual 'bandwidth'. Increasingly, the challenge is not just to increase the size and scope of the collection (or connection) that can be accessed, it is to maximise the uses and benefits obtained.
5. PERI has been funded by a 'basket' of funders (Denmark, Norway, Sweden, UK) that allows some flexibility in programme coordination (as well as complicated financial reporting). It also provides additional opportunities on the ground to connect information activities with related research or education support programmes supported by the same funders. These synergies have perhaps not yet been fully exploited.
6. Responding to demands to maximise local ownership and direction generates demands for different skills and capacities to be available locally and within INASP. Skills in using, publishing and disseminating information need to be extended into areas like fund raising, advocacy, negotiation skills, network management, etc.