synthesis report

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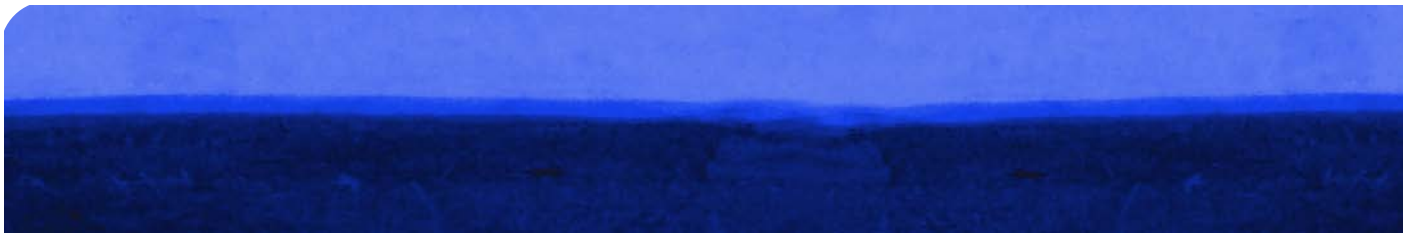
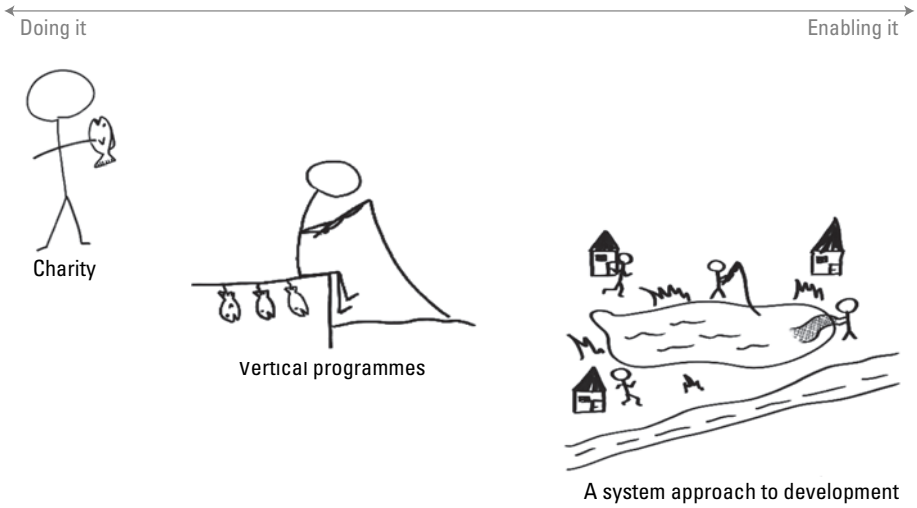
Research for Health and Development



Redefining development

Interactions and conversations on:

- How science and technology can catalyze health, equity and development
- The contribution that entrepreneurship can make to building science in low and middle-income countries.



COHRED
Council on Health Research for Development

Acknowledgments

This report is a synthesis of conversations held at the COHRED Colloquium 2010 in Geneva. The contents are the result of the exchanges and contributions of all participants at the Colloquium (see participants list in annex). Reporting by Nina Mattock. Compiled by Michael Devlin and Carel IJsselmuiden (COHRED).

About COHRED and the COHRED Colloquia

COHRED is an international non-profit organization whose aim is to improve health, equity and development in low and middle-income countries by building systems for research and innovation.

COHRED Colloquia are a key piece that helps us achieve this goal. With the *COHRED Colloquia* series we intend to create a new space, a new format of exchange and interaction between a small group of people who are interested in promoting '*research, science and technology, and innovation*' as drivers of socio-economic development, equity and health. Our aim is not for more 'global health research', but for research and innovation system building at country level. This is where we believe real and sustainable development will be achieved.

There is a real need for such a space. Beyond the global meetings addressing global priorities, the Colloquium brings together a small group of 'change makers' – people who can make change happen, in their programmes, organizations and countries – who will inspire and complement each other to achieve this.

COHRED Colloquium 2010 is the first of these meetings. We intend it to be the beginning of a Colloquium series dealing with different themes or topics – inviting a different audience each time to reflect together on critical issues where change is needed. The format is highly interactive and informal. It uses a modified 'Chatham House Rules'[1], approach to facilitate open and frank exchanges. We believe it is the interaction among those present that counts most. This synthesis report is intended as a record.

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1 Chatham House Rules provide a private space in which decision makers can comment and discuss openly, and their comments will not be attributed and a list of participants not published. The modified approach applied at the COHRED Colloquium does not attribute comments to individuals in the reporting, but with participants' permission, includes a list of attendees at the meeting in annex.

Another look

An exchange on new approaches for Research for Health and Development

COHRED Colloquium 2010 was an experiment in bringing together a small group of people with an interest in going beyond the business-as-usual of global health and the current approaches to development and aid. And to explore new approaches together.

It resulted in a rich one-day exchange on the issue of 'redefining development', with a specific focus on how science and technology can catalyze health, equity and development, and the contribution that entrepreneurship can make.

While not all questions raised by this perspective could be addressed in-depth, this first Colloquium opened doors and sparked new discussions on how we can approach achieving health and development in a different way.

This synthesis report is intended as a record of the meeting, for information, and to stimulate ongoing discussion on the COHRED Colloquium web page www.cohred.org/colloquium2010. I encourage you to join in the debate.

The meeting set out to create a group of around 50 people who – collectively and individually – can take development to another level. I feel that we achieved the short-term outcomes – participants left with inspiration, insight and ideas for innovation – and a new network to create change, not just exchange. We look forward to hearing about changes that participants make in their ways of working, and about others they have engaged with the ideas taken away from this meeting.

It was a great experience for my colleagues and myself – I hope it was for you too!

Carel IJsselmuiden
Director COHRED
www.cohred.org/colloquium

Background and context

20th Anniversary of the Commission on Health Research for Development. The progress in health equity and development; and what remains to be done.

2010 marks the 20th anniversary of the Commission on Health Research for Development and its landmark report *Health research: essential link to equity in development*.

The Commission was committed to the ideal of 'research for development'. The movement of Essential National Health Research that emerged from its work has set a political basis that calls for international research funds for health to focus on the needs of low-income countries, and for the continual building of countries' capacity to do world-class research.

In the two decades since the Commission's report and recommendations were published, the world of global health has become increasingly complex. Serious new public health issues have emerged; 'eradicated' diseases have reappeared. A multitude of new global health initiatives has been created to produce and procure medicines, develop and deliver vaccines and cures and to solve the problems of neglected diseases. The estimated total investment in health research has increased from some $30 billion (1986) to $160 billion (2005) annually – with an estimated 5% spent on the needs of low and middle-income countries[2].

It is certain that the global health movement of the past two decades has made significant improvements in disease eradication and health care. It has also produced a new generation of world-class researchers from low-income countries. But in contrast, little progress has been made on a core priority defined by the Commission – *strengthening countries' ability to define, manage and deliver research that meets their national health priorities*.

The economic success of the world's high-income countries since the Second World War was built on deliberate and planned investments in science and technology[3]. During this same period, low-income countries have received aid, programme and project funding from these donor countries. But they have received little investment to create the conditions to drive true long-term economic development.

2 de Francisco A, Matlin S (eds). Monitoring financial flows for health research 2006: *The changing landscape of health research for development*. Global Forum for Health Research, 2006.
3 Conway G, Waage J. *Science and innovation for development*. UK Collaborative on Development Sciences, 2010 (available at www.ukcds.org.uk).

Despite this, donors and development partners remain reluctant to invest – in low and middle-income countries – in the same capacity building that has brought their own countries sustained growth and stability. This missing link can be called the *strengthening of systems for the effective management and governance of research*. To date this has not been well supported as a development strategy.

An investment in improving systems, governance and management for research in low and middle-income countries is a direct investment in a country's economic future. COHRED is committed to supporting countries that want to achieve this goal.

2. COHRED Colloquium 2010: Research for Health and Development

At this first COHRED Colloquium, a group of 50 people met for an open discussion on new ways to catalyze science, technology and enterprise as a driver of national development. The group included professionals in health and health research, some former ministers and heads of state, donor representatives, development professionals, and leaders of research and policy from low and middle-income countries.

The exchange was designed as an Open Space session, with participants setting the agenda, interspersed with short comments and statements on a range of related topics. The two invited business leaders from Africa were unable to participate and bring an enterprise focus to the discussion – perhaps illustrating that the business sector does not yet see this as an opportunity.

Conversation topics – Open Space sessions

- The goal of research and development investment in Africa – commercialization or equity?
- How can we develop capacity in research communication in developing countries?
- Linking agricultural research and general science and technology to health and development.
- South–South collaboration on capacity building; North–North collaborations in terms of support.
- How to achieve sustainable funding for R&D – what are the options?
- Why does Africa not have its own WHO pre-qualified vaccines?
- What are some of the 'tipping points' for health systems' change?
- How do Aid agencies negotiate with low and middle-income countries – and how can low and middle-income countries better prepare for these negotiations?
- Partnerships – a key ingredient for the next phase of development.
- How to move from a disease approach to a systems approach in funding.
- Conflicts of interest in research – public/private health.
- How can existing regional organizations further research, and impact on, population health?
- Defining the role of health research in economic growth.

Comments and statements to the meeting

- David Dickson, Director SciDevNet: The role of information intermediaries in moving research into action.
- Jo Ivey Bufford, President, New York Academy of Medicine: Building government and institutional capacity for health research.
- Don de Savigny, Swiss Tropical Institute: Prespectives on 'Systems thinking'.
- Cathy Fletcher, Centre for Development Studies, UK: Science for innovation and development.
- Adolpho Martinez Palomo, Science Advisor, Government of Mexico: 20th Anniversary of the Commission on Health Research for Development.
- Rocio Saenz, former Minister of Health, Costa Rica: Building a research function in the ministry of health.
- Mohamed Jeenah, Director Research Support and Development, University of Pretoria: Using 'foresighting' to plan a national science and technology strategy.

This year's conversation

Rethinking Aid – There is increasing doubt about traditional aid, and an apparently increasing gap between the relevance and nature of aid between 'north' and 'south'. The COHRED Colloquium 2010 looked at 'research, innovation and entrepreneurship' as key concepts in redefining aid for the future.

Research and innovation development – How can low and middle-income countries mobilize research and innovation to drive socio-economic growth and create health equity? Here, a lead case is the global 'access to drugs' effort of providing medicines, contrasted with the emerging efforts of strengthening pharmaceutical innovation in Africa.

Mobilizing entrepreneurship for research and innovation – In most low-income and many middle-income countries, 'research' and 'science and technology' take place largely in the public sector and are managed by governments. The link to implementation through entrepreneurship is a key aspect of innovation and often one that is lacking. How can entrepreneurship be mobilized to help build a more dynamic national science and technology sector? And how can research and innovation build a rich entrepreneurial environment that is a catalyst of socio-economic growth and health?

3. Setting the scene

Redefining development: Moving to 'Square 3'

A Forty years ago, development activities were based on aid, or charity. If we think of this as Square 1, then Square 2 is the moment when development aid became focused on vertical programmes aiming to solve a single disease or issue (e.g. malaria, TB, polio). Today, while vertical programmes still predominate the development landscape, we are set to move into Square 3 – this is a move from northern driven thinking and programmes to the use of the vast southern capacity; and from aid and charity to market opportunity – driven by the talent and investment available today in many low-income countries.

This approach can be put into action by focusing on two areas:

- Developing the role of research, science and technology and innovation as a tool to achieve health, equity and development.
- The role of social and commercial entrepreneurship in creating innovation and going to scale to become an economic force in low-income countries.

The current situation is illustrated in the example of GAVI – the Global Alliance for Vaccines and Immunisation – the big, influential and successful vertical programme, now in its 10th year. Among its successes, GAVI has saved over five million lives since starting its work, an excellent achievement. But there is one statistic missing: after ten years of work – most of which targets Africa – there is not one WHO pre-qualified vaccine producer in Africa. This suggests the question: *Ten years from now, would the Alliance's work be considered a success if it had not helped build the capacity for Africa to be a supplier and producer of at least some of the vaccines used on the continent?*

Development vs. relief and charity

When debating the merits of a 'systems approach' to national development, a frequent comment is to ask how we can justify funding 'system' activities when there are not enough funds to solve the persistent crises of famine, natural disasters, and post conflict situations that plague many of the world's poorest countries.

This is a valid point. Relief and disaster management play important roles in supporting countries that face difficult situations. But this should not be confused with long-term 'development'. The answer is not to focus only on crisis issues and ignore supporting long-term development

System and S&T development should not be seen as a luxury for the privileged few, 'only if there are funds available', but as a way to pull a number of countries permanently out of poverty and away from chronic dependence on aid and relief – when ,many are not in fact facing a 'disaster'. For many low-income countries, making this step is not unrealistic – though it is a 30-year investment strategy.

A similar story is repeated in most vertical programmes in the health sector today: success in delivering cures and solutions that save lives, but less priority and investment in leaving behind a stronger and lasting science and technology capacity in partner countries. Should the building of countries' science and technology capacity not also be a metric to track the quality and relevance of international programmes, and criteria by which countries select which global health partners are best for them? If so, the implications of such a 'systems focus' to capacity development go far beyond the current training and project-based approaches on offer from most programmes …. and beyond current thinking on what constitutes, capacity building and empowerment (see box 'Responsible vertical programming', page 7).

The point of this example is not to advocate for all countries in Africa to become producers of medicines, vaccines and diagnostics. But it does mean that if we speak about 'development' we should stop thinking about charity and start seeing Africa as a market, with lots of expertise and creativity and an economic growth rate second only to Asia.

The case of pharmaceutical innovation is another telling example. The prevailing view among many northern governments and international programmes[4] is that '*we can help countries by improving access to medicines through programmes for low-cost drugs for low-income countries*'. To this invitation, a number of African countries responded by presenting to international and northern partners their agendas for medicines access and for strengthening their ability to pursue pharmaceutical innovation.

For health research, a foundation to achieve a new approach to development has been built in the past four years. The starting point was the process of the Intergovernmental Working Group on Public Health, Innovation and Intellectual Property (IGWG), that is being put into action today by the WHO's Public Health and Innovation initiative. On its side, Africa has the African Union's Pharmaceutical Manufacturing Plan for Africa[5]. For pharmaceutical innovation in Africa, the scene is set for countries to assess their needs, develop action plans, and build capacity and skills to procure or develop medicines (or to build regional partnerships to deliver on their needs)[6].

This is not to be critical of vertical programmes. But rather, to encourage them to become more relevant to countries' needs and today's realities by becoming catalysts for countries' long-term development. They can move from focusing exclusively on disease treatment or immunisation objectives (and being seen as 'aid' or 'development cooperation', which in reality constitutes humanitarian relief) and participate in designing a more balanced approach to achieving health, equity and development. T*his approach emphasizes building infrastructure, institutions, systems, and enabling environments*. This is where the end of poverty can be found: in development, not in aid and relief.

In this light, should 'real development' not mean that in its next decade, GAVI sees that at least three of the ten vaccines used in Africa are sourced from Africa?

4 http://www.oecd.org/document/41/0,3343,en_2649_34537_39163757_1_1_1_1,00.html
5 http://www.africa-union.org/root/UA/Conferences/2007/avril/SA/9-13%20avr/doc/en/PHARMACEUTICAL_MIN_DRAFT.pdf
6 http://www.cohred.org/African_Innovation

Certainly charity (Square 1) and vertical programmes (Square 2) are essential to achieving some goals. But if we want to move to real development – Square 3 – we need to understand how to strategically support countries' national and regional systems, institutions, infrastructure and their entrepreneurial environments. Such an investment focus will help low and middle-income countries move on their own terms. And with their own research, science and innovation capacity to support their road to development.

High-income countries, and those moving up the socio-economic rankings, have achieved their growth through deliberate and substantial investments in research, science and innovation. The European Union recently reinforced its intention to spend 3% of the region's GDP on research.

But it seems that 'development cooperation' remains stuck in its pre-occupation with ensuring 'aid effectiveness' and reducing corruption. This view creates the opposite of

Responsible Vertical Programming*

Are vertical development and research programmes building countries' research and innovation capacity

Are vertical development and research programmes building countries' research and innovation capacity?

A vertical programme for research or development is 'responsible' if it succeeds in building the capacity of a country's researchers and the national research system, in the process of achieving its goals.

In the health sector, research needed by developing countries is mostly conducted for them, sometimes with them, but rarely by them. Most of this research is problem-specific – or 'vertical' – and does not explicitly contribute to building national systems for research, science and innovation.

The health research agenda in poor countries is mostly determined from the outside, not based on national health research priorities. It concerns only those conditions for which international funding is available – largely HIV/AIDS, TB and malaria.

Vertical research programmes can be highly effective at increasing research production in countries and developing new interventions that can improve the lives of millions of people. But they can also do much more to support countries' long-term growth.

Vertical programmes are not generally concerned with leaving behind sustainable national research and research governance capacity in their partner countries. Most capacity that is built in vertical programmes focuses only on those competencies needed for specific research projects or topic areas.

In their current way of working, vertical programmes and their donors are missing an important opportunity to support countries to build their research capacity – for researchers and their institutions. It is also a missed opportunity to invest in countries' long-term growth.

* This summary is based on the COHRED initiative on responsible vertical programming and its study: COHRED Statement: Responsible Vertical Programming. How can global health programmes deliver essential research and build national research systems?

COMMENT

Strengthening of health systems

We are living in one of the most dynamic periods in public health history, with a massive increase of funding for health systems strengthening. The efforts of Global Fund and GAVI are prominent examples.

But to deliver on their goals, programmes need to work through strong health systems. The major threat of the drift toward vertical diseased-focused fragmentation is that it diminishes ownership of a national system.

In 2008 the WHO published 'building blocks for system strengthening', but gave few details of how to go about this in practice. Today there is considerable activity related to health systems, but these activities are not 'joined up' – or viewed from a true systems perspective. Most 'systems' activities focus on human resources and finances, with programmes typically addressing one or two diseases or health conditions.

It was highlighted that there is a general lack of appreciation for systems complexity. Donors appreciate this but rarely apply systems sciences in their thinking and programme management approaches. The general trend is to measure the effectiveness of interventions, rather than systems considerations – the processes that need to function in countries to make the products and practices of health programmes useful to people. Systems help programmes succeed, by addressing problems of access and delivery, product availability, compliance, etc.

Some of the best products available today, such as anti-malarials, have 98% efficacy. But in most African health systems, health-care managers faced with access issues see this figure drop to 32%, and 10% in the poorest parts of society. In this light, the heart of the systems question seems to be: from the country perspective, is the solution for countries to make a better drug, and raise therapeutic efficacy to 98 or 99%? Or rather to invest in the national system that makes it possible to identify the root causes of 32% efficacy and create processes that make the intervention accessible to the largest number of people – and track this progress.

What is the best way forward? Suggestions include: establishing a global fund for health systems and health systems research, creating a journal for health systems strengthening (it was mentioned that a journal on the subject will soon be started), and establishing an African observatory on health systems similar to the European Observatory on Health Systems and Policies* (under WHO) – today there is nothing like this in Africa.

* The European Observatory on Health Systems and Policies supports and promotes evidence-based health policy-making through comprehensive and rigorous analysis of the dynamics of health-care systems in Europe.

what 'development' aims to achieve. But the aid mentality persists, despite growing evidence that aid itself is a main source of corruption and that governments which are dependent on aid for substantial parts of their budgets for prolonged periods are more responsive to donors than to their own citizens.

Take the example of health research in low-income countries. There no country in the world in which HIV/AIDS, TB and malaria together cause most morbidity or mortality. Why then is over 90% of globally funded research and programme funding focused on these three diseases? This skewed investment practice has a profound long-term effect on research and innovation capacity in low-income countries. It draws this scarce resource in these countries away from addressing ALL problems that the country faces that require research and innovation – focusing it narrowly on the topics for which the north is willing to pay.

In calling for the 'redefining' of development, we are not only calling on donor countries to change, but also on low and middle-income countries. They need to optimize the use of resident capacity, leadership and creativity.
The question then is, what specifically is Square 3, and how can we get there? While there is no quick answer, the direction is clear: create a climate that encourages entrepreneurship as the means to stimulate investment in innovation. Donor countries should no longer be donors, but rather develop the expertise to engage partner countries in building science, business and social enterprise.

Africa is ready for change

The discussion heard a range of examples and experiences. A recurring theme was that something is changing in Africa, there is a sense of optimism on the continent. Since the Ministerial Summit on Health Research in Mexico in 2004, the landscape of African research has changed significantly, partnerships have blossomed, and the continent has started to make its mark in the research field (evident, for example, in an increase in publications). But still there is a long way to go.

Today scientific and political leaders in Africa are hopeful. There is a real possibility to create a sustainable science base here as a growing number of countries have science and technology policies, national agencies have emerged to support opportunities for research careers, and an increasing number of African scientists is keen to return home after a spell abroad.

The African Union has a science and technology framework, and its agencies, such as the NEPAD Office of Science and Technology[7], are charged with building capacity across the continent and encouraging networks of centres of excellence in many disciplines. Public repositories of information and knowledge in health and other fields are emerging on the continent.

"There is readiness for change in Africa," commented one participant. "We are in vertical approach to programming, but now is the time to say let African countries take charge and set the agenda."

7 New Partnership for Africa's Development – NEPAD Agency of the African Union

Rwanda's strategy and approach provide useful lessons for other countries that are intent on embedding science and technology in their development strategies. Some 16 years ago it was a failed state in the throes of a civil war. Today Rwanda is recognized as a leader in information technology, good governance and reduced corruption (zero tolerance). As Rwanda rebuilt, the government placed science, technology and research as its central strategy to achieve economic growth. Science and technology was applied at all levels of education and training to enable the provision of better governance and services. Related capacity building efforts focused on building the science and technology policy and skills for knowledge production and transfer and innovation.

Today's Rwanda has a set of national science and technology priorities with which all ministries are aligned. Its national strategy is to mobilize enterprise development and science and technology as the driver of its economic development. Planning is centered around national priorities and how donors' programmes can contribute to them. This includes meetings to encourage groups of donors to work together to support Rwanda's national policy and priorities.

COMMENT

Strong ministries for strong health systems

What is the role of ministries of health in the governance of health systems? And what capacities do they need to develop to work more effectively? A recent study* was presented that attempted to answer these questions. The study polled ministers and former ministers of health, and other senior actors in some 16 countries. It aimed to better understand the challenges these officials face in their daily work. 'Health systems' were defined as providers of personal health-care services, public or population health services, health research systems, and health in all policies.

Ministers interviewed were found to have a complicated job – they have to interface with other ministries, their superiors, para-statal organizations, advocacy groups, NGOs, and deal with regulatory frameworks. The majority of their time is taken up dealing with global organizations and donors, rather than with counterparts in their countries. They do not deal often with private sector organizations, and did not refer to the Millenium Development Goals (although they referred to related issues such as 'infectious diseases'). They related very little to research.

The study's recommendations include: that ministries should assess themselves (a tool is available from http://new.paho.org/); they can learn from the UN's significant investments in public administration practices; countries need to better understand the resources available in various ministries and national institutions, which can bring resources, and opportunities for merging institutions; regional support networks should be developed – taking the example of Uganda; national health research systems can be embedded in existing World Bank platforms; a global leadership programme is needed for ministers of health, which allows for networking and exchanges between ministers of health.

* Supporting ministerial health leadership: a strategy for health systems strengthening. African Centre for Global Health and Social Transformation, the New York Academy of Medicine, Rockefeller Foundation, 2010.

4. Redefining development: science and technology approaches for low and middle-income countries

R&D investment in Africa – commercialization or equity?

Does investment lead to equity? This group discussed whether the perceived trend in R&D investment in Africa is driven by commercial interest/economy or to achieve equity. While no definitive conclusions were drawn, commercialization was seen as one of the main outcomes when the economy drives the R&D agenda. Some cautioned that countries could get 'trapped in commercialization', and that although governments have a longer-term view – that equity will be the end result, there is no evidence to support this thinking. A dichotomy was mentioned concerning R&D investment in health, with options split between "give us drugs in Africa to cure diseases", and "we want to produce our own drugs and improve our economy."

How can we develop capacity in research communication in developing countries?

What exactly do we mean by 'communication', and what are we communicating? This group discussed the different forms and purposes for communicating about research, and how these are probably not clear to all actors in the process – including research managers and leaders, researchers, communications professionals. It was proposed to simplify the discussion by distinguishing between peer-to-peer communication (between researchers and part of that process) and communication with other groups.

Another suggestion was that communication should be understood as being a part of the research project cycle, with specific activities that evolve as a project or programme progresses. Another need mentioned was to have more clarity on the different roles in communicating research. It is not just about 'end-of-the pipe' promotion of research, or selling of results and success stories by communications teams, or training researchers to interact with the media (one comment was that it should not be assumed that a researcher should be this link, but that certain researchers capable of delivering a credible message should be trained and supported by their communications colleagues). Equally, if the goal is to get science into use, the research team also has important communication responsibilities. The key contact might be providing technical input to committees, making information and data available to decision makers, or involving key stakeholders in the research process.

On their side, journalists and other information colleagues (web resources, publishers) see part of their role as intermediaries in bridging the gaps between research policy and practice. They move information from one sector to another.

Policy makers need accurate, reliable and timely information. Science communication extends beyond projects to play the role of informing and opinion forming – for a better general understanding of science and technology, including its negative consequences

(e.g. genetic crops in Africa – indigenous solutions vs. foreign solutions). Another, relatively unrecognized, aspect of communication is the influence that communities and groups in society can have on their governments about their own needs for research. This goes beyond the common perception that communities 'should be informed of what we have done when using them as research subjects' and looks at the population as a partner, user and beneficiary of research (after all, research should be done for people's benefit!).

How can we make communication more effective and develop capacity? Professional science communicators must be part of the research management structure in universities. This exists in the North and in Latin America, but not yet in Africa. In Latin America, open access publishing is important in driving communication. It is the responsibility of the individual researcher to articulate funding of research to funders and ethical committees, but there are limitations to the ability of researchers to communicate.

Information must be accurate and what people want to read about. Like development aid, research communication is also evolving. The first school was 'disseminate science', next came the empowerment paradigm. Today we are moving to a third paradigm – to bring science and technology to the table, plus the ability to use it from the bottom-up. Innovation processes take information from the top and bottom.

So capacity needs to be built at several levels. On the issue of clinical trials, a guide to journalists – on how to report clinical trials in a responsible manner – is available online , to increase their understanding of clinical trials. There is also quite a lot of interest for example in stem cell science, usually considered not of much interest in developing countries.

Linking agricultural research and general science and technology to health and development

According to this group, the biggest contribution to improving the health of populations does not come from the health sector. From an interdisciplinary perspective, considering the example of agriculture and health, the methods of one discipline may be useful to the other – there are many synergies, but the disciplines do not work together.

In this process, there are many more players than scientists. Governments, the private sector and others are involved. And the innovation landscape is vast, including: rainwater harvesting, new technologies such as nanotechnology that could be used for water purification, translational research (turning basic research into products, and once a product is in use, providing feedback on its use), basic sciences, product development and use. There is need for an innovation paradigm and an enabling environment. A recent publication[8] encourages a shift from short-term, project-driven, northern-led partnerships to southern growth driven by the same science and technology strategies that wealthy countries employ today.

8 Conway G, Waage J. Science and innovation for development. UK Collaborative on Development Sciences, 2010 (available at www.ukcds.org.uk).

COMMENT

Shaping a national science and technology strategy

We can use foresight to plan strategy. We all plan with a single future in mind, and yet we know that most predictions are wrong. So foresighting is to look at multiple futures, and none of the futures will come true (e.g. one future might be 'Ministers change often', and another 'innovation hub' or 'ministry of innovation'). Look at what technologies would be required in each of these foresights. Get people from different sectors to talk to each other.

Therefore "plan with multiple futures in mind – bits of each will turn up". You do not actually plan for these futures, but must build flexibility into the system.

For example, research councils in Africa are working with the private sector, with Monsanto (US) and CIMMYT (the CGIAR's International Maize and Wheat Improvement Center), to try to develop new strains of maize. A drought-tolerant maize will exist in 2016, so infrastructure in the country has to be planned now. Also, before the milestone of 2017, there will be other endpoints, e.g. a conventional maize in 2012. A variety of maize that will grow on poor soil is also being developed.

South–South collaboration for capacity building; North–North collaboration for support

For South–North collaborations, non-traditional approaches are needed – there is still a lot of disparity in the North. Also, regional cooperation is important – lateral North–South, not just South–South. Countries working together in clusters have more critical mass for learning and sharing of experience than one country working alone on a project.

Taking the example of Costa Rica, South–South cooperation was recognized by this small country as an opportunity when it put health research on its Ministry of Health agenda in 2002. More transparency was required and requested, with emphasis on clinical trials. As part of consultation, ethical issues groups asked for several things, including reducing the gap between new knowledge and its application. Costa Rica's political response to this need was to recognize South–South cooperation as new opportunity and build bridges between researchers, policy makers and the public, and to increase the national budget for public health needs. Costa Rica's advice to other low and middle-income countries interested in implementing a research strategy for health was to use technical support to: establish a 'road map', prioritize problems, define the agenda, ensure financial and technical support, and support academia and policy-maker networks.

How to achieve sustainable funding for R&D – what are the options?

There are many options and issues around funding for R&D. They include the importance of government commitment, of wanting to spend on R&D. The example

of Tanzania was discussed, a country that is moving toward spending 1% of GDP on R&D. Other issues covered by this group included the need to make it clear that Africa is serious about research, and issues about strengthening the capacity of Africa's public institutions so they can better negotiate and leverage funds, about transparency and accountability, the importance of partnerships, and the importance of private investment. Here the discussion looked at how a country can define the return on its investment – for example, for long-lasting insecticide-treated bednets, this initiative made money for the company involved, but how much of these profits were ploughed back into research?

Why is Africa not producing WHO prequalified vaccines?

No conclusions were drawn from this discussion on the production and commercialization of drugs/vaccines in Africa, on how to achieve production of prequalified vaccines in Africa, and the role of research in this. However, vaccines were seen as an investment that drives research. But what makes it a worthwhile investment? This remains an open question.

What are some of the 'tipping points' for health systems change?

Sparking innovation in low-income countries will require people outside our comfort zone to get it right. One participant commented that: "The health guys on their own are not going to innovate … you have to get different thinking into the room – business people, and not just health people or donors." Researchers are quite good at convening different people and getting thinking going so could perhaps play a leadership role. The group felt that researchers could also take a lead and clarify what we really need regarding the application of systems science in health systems development.

The interrelationship of aid agencies and low and middle-income countries

How do aid agencies negotiate with low and middle-income countries, and how can low and middle-income countries prepare better for these negotiations? Aid agencies have to build trust with their partner countries. To do this there is need for an intermediary organization, e.g. South–South cooperation or regional cluster, international agencies. All countries should have a national strategy about use of funds, a set of priorities, and a transparency mechanism, so that the rules of engagement and partnership with international organizations and programmes are clear for both sides.

Partnership development – a key ingredient for the next phase of development

We can improve the way partnerships work. The problem now is one of power differentials in North–South relationships – developing countries don't usually have an equal voice, so these relationships cannot be called 'partnerships'.

A main part of the problem lies in high-income countries. The European Union could work with low and middle-income countries in a more cooperative way, for example, by strengthening these countries' voices in setting their own agendas, and by not using vertical programming. The beneficiary government should be responsible for clarifying the issue of how to match the aid with the reforms. Setting standards for research, and harmonizing protocols would help make low and middle-income countries equal with their donor counterparts. This would create a situation where countries would apply for funding according to their priorities.

Low and middle-income countries need to build strong institutions to balance the influence and relationship of all partners. This group felt that it is impossible for anyone, however good they are, to achieve anything in a weak institution. And leaders should be given time to develop systems and institutions. Unfortunately they often change too quickly. The answer is to invest in institutions, whose policies and expertise stay, as leaders come and go. Governments can develop strong institutions if they want to. The group discussed the example of Ghana where 2% of VAT revenues is allocated to higher education. The country is also establishing policy on funding science and innovation.

It was discussed that COHRED could assist countries in developing partnerships within countries, so the biodiversity is not taken elsewhere to be developed into medicines, and the country will get the capacity to develop the medicines rather than be a supplier of natural resources to external producers. This will provide employment and boost the economy. This group cited the European and Developing Countries Clinical Trials Partnership (EDCTP) as an effective partnership – it is good at building capacity not of individuals but of institutions.

How to move from a disease-specific approach to a systems approach in funding

To move from a disease approach to a systems approach in funding – to a perspective that brings long-term research capacity strengthening – it is necessary to analyse a weak system and to determine why it is weak, taking information from the disease profile and from the system. If the country can build this assessment, it will lead to a stronger science and a better funding approach. The international community's commitment is needed to invest in systems research because this is a long-term effort. From the donor's perspective, vertical programmes are a success because their short-term effects are easily visible.

The example of Costa Rica was discussed. This country has a 'horizontal system'. It uses co-investment and co-business approaches to fund research. It has a well-functioning health system that is no longer funded by European donors. The country found that it is '…not always a good idea to start development in the poorest regions of poorest countries – as less poor areas may develop more quickly.' The advice was to invest in less poor areas so they can cascade expertise and investment to the poorest. The Costa Rican approach builds co-investment systems that meet the partners' specific needs.

The challenge of developing science and innovation in a small country setting was discussed. This group asked: Does there need to be a critical mass of researchers? And can a small country have a critical mass? One participant remarked: "Every country has knowledge to share – the difference is in recognizing the different kinds of knowledge that are available." The group considered health preventions research important. While a fair amount of research on prevention is already funded, it is all project funded, and not embedded in care institutions. Governments need to decide what needs to be researched and move away from project funding to a networked approach.

Conflicts of interest in research – public/private health?

This discussion looked at conflict of interest in areas such as public vs. private, or drugs from drug companies vs. prevention strategies from the ministry of health. A member commented that research is not in everyone's best interest – several interests lead to successful partnerships.

How can existing regional organizations extend research and impact on population health?

This group felt that it was particularly helpful to use existing regional organizations and frameworks to further the scope of health research as it allows small countries to set up networks to cooperate with, learn from, and provide input to the expertise of other countries in the region. The example of Rwanda was mentioned. As this country is small, its strategy is to work with all countries and organizations on a regional basis. It is interested in developing centres of excellence for the whole of southern Africa – where everything is prioritized on a regional basis.

COMMENT

Commission on Health Research for Development: 20 years on

The Commission on Health Research for Development, in its 1990 publication Health Research – Essential link to equity in development, opened new channels in global health research and generated the political will to strengthen research capacity in low and middle-income countries.

The Commission identified the 10/90 gap in health research, also that research should not be limited to the health sector, and that all countries should undertake essential national health research. "Who was behind these ideas? Not the ten gurus in the Commission, but the hundreds of people they interviewed, listening to their needs. The interviewees were the ones with the ideas."These perspectives and opinions led the Commission toward its consensus.

"One of the key issues is to listen to people and what they think – to find knowledge that really is invaluable – to improve national health research."

The patients/consumers are not just a passive element in the health of a nation. The active compliance and participation of the general public is needed at every stage, including research.

Africa is well organized, this group felt. The African Union has structures, and there are national and regional organizations, including groups like the European and Developing Countries Clinical Trials Partnership (EDCTP). These organizations have mandates that extend from grassroots to the political levels. While they do not (yet) get funding from the continent, the situation is changing. The Economic Community of West African States (ECOWAS) has customs money flowing to this. It was thought that COHRED could consider these structural arrangements, as it is already working with WAHO and NEPAD.

Defining the role of health research in economic growth

This group discussed that investing in health research has a small direct effect on a country's growth (in terms of employment). But its greatest long-term impact is to inject intelligence into the health system. The role of research in the health system is to prevent disease – an approach that is more cost-effective than curing disease. The role of innovation is to scale-up and improve how services are delivered so that health care is more efficient and drugs more effective. Scaling-up needs to involve the private sector. This process helps drive continual improvements in population health and contributes indirectly to sustained growth.

Large amounts of knowledge have been used to make progress in the developed world. Knowledge can be used to:

- eradicate poverty and hunger
- improve agricultural productivity
- increase land yield/production
- improve maternal health
- reduce child mortality
- improve efficiency and effectiveness of energy, electricity, water and sanitation, etc.

The group discussed the paradox that industrialized countries recognize the strategic role that science and innovation have played in their development, and have adopted innovation-oriented policies, and yet have not applied this thinking to their development programmes. There is no reason why low and middle-income countries cannot, for example, move into pharmaceutical production, as some are now doing. Research, then, becomes the driver for development. Many low and middle-income countries now see research as the driver for development, as it has been in Europe and in Brazil, India and China.

Annex

COHRED Colloquium 2010 – Research for Heath and Development

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Reading list

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