



*Today, we witness an important shift to more research and innovation in Africa and South Asia.*

Photo: J. Boehling

## Getting research into policy and practice

Research for development (R4D) is still being neglected in development co-operation. In reaching the Millennium Development Goals, there is an urgent need to implement research findings to increase food production and access to food, which also means “putting research into policy and practice”.

When visiting countries in Africa and South-Asia, regarding the aspect of “research for development” (R4D) and talking to ministers, researchers, farmers and colleagues of international organisations, a rather depressing picture emerges: marginalisation and isolation seems to characterise the research com-

munity in these countries: Marginalisation concerning the topics researched, marginalisation concerning methodologies and procedures, and marginalisation concerning funding opportunities and status within the academic community and especially within the donor community and within the political system of their own countries. Very often, marginalisation can also be observed regarding relevance and impact: uptake of research results to inform development practice and development policy seems to be marginal.

Today, however, there is an opportunity for R4D in the context of science

& innovation to become more relevant in and for the South. We are currently witnessing some important shifts in the approaches for development in Africa and South-Asia. Not only the Paris Declaration on Aid Effectiveness as a common standard for delivery, but also the tax-payers’ concern about the effective use of their money for development partnerships is requiring more effectiveness as a basis for development policy and practice. Therefore, division of labour, coherence, and interconnectivity are key to an effective and efficient mode of collaboration among donor countries and between donors and partner countries. In the

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R4D community, the respective slogan is: "Putting research into policy and practice". In reaching the Millennium Development Goals, donors and partner countries should have a common interest in boosting the performance of Southern R4D in this sense, for example in reducing hunger by implementing research and development (R&D) findings to assure improved food production and safe access to food.

### ■ The importance of science and innovation

Currently, issues are under debate that contribute towards the growing meaning of science and innovation in and for the South:

- Access to global knowledge is obviously improving rapidly through Information and Communication Technologies (ICT), both in scope and in depth. Due to improved access to global knowledge, innovations which do not follow the conventional, linear R&D model (from basic or fundamental research via applied research and development to the production of innovative goods and processes in industry and business) are becoming

### Innovation systems

Research and Development (R&D) plays an important role in the overall complex of an innovation system, which can be described as set of institutions, jointly or individually contributing to development, diffusion and implementation of innovations and its responsive knowledge, skills, and artefacts. In European countries, economic and social development and prosperity is based on well-functioning innovation systems.

Most of the innovations developed worldwide are based on step-by-step improvements, a recombination type of innovations or design-led innovations, which often integrate the (end-) users' knowledge and needs. These kinds of innovation are also called "bottom-of-the-pyramid innovations". In contrast, there are only few innovations on the top of the pyramid, but these ones tend to represent fundamental breakthroughs, and are mostly very expensive and globally effective.

R4D summarises the efforts of research activities towards development, which are intended to improve the surroundings of life in developing countries.

more likely (bottom-of-the-pyramid innovations, see Box). Whether this likeliness will actually translate into frequency and significance is to be disputed. Critics are pointing out that while we do see some open access initiatives, for the time being, "improved access" relates mostly to "read only" access, while intellectual property rights largely prohibit the use of global knowledge.

- At the same time, return on investment in "top of the pyramid" innovations might become increasingly marginal – which however is not proven yet. It is not only the "return

on investment paradigm" but also time that counts: implementation of top-of-the-pyramid innovations is often unreliable or at least to slow. This gives benefit for bottom-of-the-pyramid innovation. As mentioned above, we do observe an increasing business interest in bottom-of-the-pyramid clients. The bottom-of-the-pyramid clients obviously outnumber "high-end" clients by far, but it is still unclear whether this is translating into a shift in where future profit lies.

- However, innovations for the bottom of the pyramid are undoubtedly becoming ethically rewarding for scientists. It makes a difference whether one is developing a new low-price technology to disinfect water and thereby save children's lives, or whether one is developing new high-tech gadgets which will mostly be used by trendy youngsters to patrol the shopping miles in Tokyo or Beirut. The translation of "ethically rewarding" into "scientific career relevant" is still a thorny issue, though.



Photo: J. Boethling

*Research and innovation that directly impact human life, like a low-price technology to disinfect water or improved seed to raise harvest yields, are ethically more rewarding than high-tech gadgets.*

- Bottom-of-the-pyramid problems increasingly know no borders. Many issues which used to be earmarked as R4D are rapidly becoming one-world mainstream science issues – balancing security imperatives and human rights, handling the demography/migration/integration challenge, struggling with globalisation and identity, addressing poverty-related health problems, mitigating climate change threats, etc. And very often, these are attractive research topics, since they are under-researched and challenging in their complexity. Whether there is convergence of concern and interest, and how funding schemes and incentive and reward systems will adapt to it, is the key question.
- In reaching MDG 1 (“halve the proportion of people who suffer from hunger”), a revival of agricultural development and agricultural politics can be observed, focusing on a holistic combination of instruments and approaches and their effective implementation. This is a potential entry point to overcome the non-existing or very weak links in national and regional innovation systems in African and South-Asian countries, namely between international research institutions funded by the donor community, universities, and governments in these countries.

### ■ Recommendations

The implications of this shift are significant for research and for innovation systems in the South. It is our responsibility to facilitate this reorientation towards relevant R4D. It deserves the support of donors and partner countries in the South. Therefore, recommendations for policy priorities are:

- **Getting science & innovation onto the Aid Effectiveness agenda.** Funding for science & innovation in the South is currently hampered by a strange

contradiction. Donors and partner countries – through the principle of alignment – do have a common interest in sound, evidence-based national development planning and development practice. But science & innovation – the very foundations of effective national development planning and development praxis – are no priority in budgeting for development. The current quick fix – procuring information through short-term individual consultancies – is weakening scientific institutions. Support for science & innovation and the demand for better connectivity and collaboration between internationally funded research institutions and universities in African and South-Asian countries are needed in order to channel funds and develop science & innovation systems sustainably.

- **Promoting result-oriented transdisciplinarity.** Bottom-of-the-pyramid innovations demand transdisciplinarity. In this mode of science, innovators work with the intended users – from defining a problem all the way through to the research process, to result validation. Not only is transdisciplinarity the easiest way to make sure that research results and innovations are relevant

and be taken up. Including clients from the beginning to the end is also the most effective way to shorten R&D cycles, to get as much return on investment as possible. Institutions will have to develop much closer links to the grassroots, and training for scientists will need to change dramatically: Imagine the challenges to the social, communication and management skills of scientists! Recombination-type innovations imply a new intellectual property rights system. Such a regime will no longer protect knowledge against use by third parties and recover research costs through licence fees – it will reward innovators whose contribution to global knowledge is found to be socially relevant. A Nobel Prize-type system for research and innovation funding might even be developed.

- **Focusing science & innovation funding on capacity development.** Currently, most science & innovation funding for/in the South goes into thematic programmes. The majority of those programmes are run or at least dominated by Northern institutions. A vast amount of research produced in the past has never been taken up, and much of what will be produced in the future risks to never be taken up, either due to lack of capacity and/or will to do so or due to lack of development relevance of research conducted. Development policies and development practice could be greatly improved if the scientific capacities of individuals, institutions, networks and systems were further developed. Analytical thinking, the capacity to digest scientific information and apply it to real-world situations, the ability to check and compare judgements



Photo: J. Boethling

*Investing in science and innovation is still not a priority in budgeting for development and thus they are not part of a sound national planning.*



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with fellow scientists etc. are key. If relevance is a criterion for scientific work, the evaluation and incentive system for science will need to change: Think of a career advancement system based on scores earned for scientific excellence AND social / economic development relevance!

- **Supporting global partnership networks for sustainable development.** Research partnerships between Northern and Southern institutions have proven to be an effective tool to produce developmentally relevant research results and, at the same time, contribute to capacity development. But for them to be able to tackle one-world issues,

they need to link up and go global. Global partnership networks of scientists working on the same issues are geared to produce the kind of recombinatory innovations needed to address one-world problems: solutions which are locally adapted and globally effective.

These recommendations are slowly becoming real: Some governments are introducing control and accountability mechanisms for relevance into their funding schemes for science and innovation. In the EU, new score schemes are being discussed that include relevance in the evaluation of scientific work, while the emergence of private foundations as major funders is boost-

*“Bottom-of-the-pyramid” innovations demand transdisciplinarity. In this mode of science, innovators work closely with the end users.*

ing more immediately practical scientific work. Also funding schemes which used to be reserved for Northern applicants working on mainstream science issues are opening up to one-world realities and hence to researchers in the South.

This article is a plea for relevance. The relevance of R4D in Africa and South-Asia can be improved by providing a sustainable funding base, by strengthening capacities, by globally linking related work, and by including end users in innovation processes. It is no question of having science & innovation either on top OR at the bottom of the pyramid, neither having it in the North OR in the South – but having it strengthened in the South. This change is already happening. We can foster R4D by changing incentives systems and setting the respective funding priorities.

### For more information:

“Science & innovation for Africa – a plea for relevance”.  
In: Research Africa; 2008; No. 4

### Zusammenfassung

Das Thema „Research for development (R4D)“ wird in der Entwicklungszusammenarbeit immer noch vernachlässigt. Um die Millenniumsentwicklungsziele zu erreichen, müssen moderne Forschungsergebnisse zur Verbesserung der Nahrungsmittelproduktion und des Zugangs zu Nahrung dringend umgesetzt werden. Doch lässt sich in jüngster Zeit eine Veränderung beobachten: R4D wird zu einem globalen Mainstreaming-Thema mit Bezug zu Umweltschutz, Menschenrechten, Sicherheit und Gesundheit. R4D sollte von Gebern und Partnerländern stärker unterstützt werden: durch die Finanzierung der Zusammenarbeit zwischen Forschungseinrichtungen und Universitäten, die

Förderung der disziplinübergreifenden Forschung und die Intensivierung globaler Partnerschaftsnetze, insbesondere im Rahmen der Nord-Süd-Kooperation. Weitere Kapazitäten müssen entwickelt und Finanzierungssysteme bereitgestellt werden, um die Forschung an den realen Entwicklungsbedarf anzupassen.

### Resumen

La investigación para el desarrollo es un aspecto todavía dejado de lado en la cooperación para el desarrollo. A fin de alcanzar los Objetivos de Desarrollo del Milenio, existe una urgente necesidad de implementar los resultados de los esfuerzos de investigación para incrementar la producción de alimentos y el acceso a ellos.

Hoy en día es posible notar un cambio. La investigación para el desarrollo se está integrando crecientemente en los principales programas mundiales relacionados con temas del medio ambiente, los derechos humanos, la seguridad y la salud. Los donantes y países contraparte deberían apoyar más decididamente la investigación para el desarrollo, financiando la colaboración con instituciones de investigación y universidades, fomentando la investigación interdisciplinaria e intensificando las redes de cooperación global, concretamente entre el Norte y el Sur. Es necesario desarrollar más capacidades y ofrecer sistemas de financiamiento, a fin de intensificar la investigación y centrarla en las verdaderas necesidades del desarrollo.