Innovation: applying knowledge in development

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In 2005, the UN Millennium Project's Task Force on Science, Technology and Innovation presented its report *Innovation: Applying Knowledge in Development*. The report outlined a number of ways in which science, technology and innovation could be used to realize the UN Millennium Development Goals (MDGs). Since its publication, the report has played a key role in raising global awareness of the role of science, technology and innovation (STI) in development. Prior to this, STI for economic development was considered to be relevant only to industrialized countries at best, and often discouraged outright in developing countries.

In order to judge the impact of the report, it is important to appreciate its diplomatic history and the legislative basis on which it was founded. First, the UN abolished its sole 'science and technology for development' centre in 1993. Since then, there has been, in effect, no voice for innovation for development on the global diplomatic scene. Second, the Task Force was handed a vague mandate from the MDGs that simply said, 'In cooperation with the private sector, make available the benefits of new technologies, especially information and communications technologies'. And just to reinforce the fact that STI was not a priority for the UN, the narrow brief given to the Task Force was Target 18 of Goal 8 – the very last target of the very last goal.

The challenge for the Task Force was not just to raise the profile of STI in development, but to redefine it so that it was more than mere investment in research and development (R&D). In fact, it had to be formulated so that it presented a framework for thought and action. The Task Force offered an innovation systems approach that included infrastructure, more advanced technical training and entrepreneurship. The guiding principle was that development is an element of social learning. In taking this pragmatic approach and rejecting ideologies, the report prepared the basis for the growing recognition of STI as central to development.

These approaches are now widely accepted and are reflected in the functions and structures of many ministries around the world – some of which have titles that refer explicitly to 'innovation'. The idea of *innovation for development* is now part of the growing mandate of a number of international development agencies. Bodies such as the African Union have held special summits on STI and have adopted a series of decisions echoing some of the content of the Task Force report. A number of UN agencies have also published flagship reports on innovation and development. While the Task Force cannot, of course, take full credit for this evolution in development thinking, it is evident that the report had a catalytic effect in bringing to fruition ideas that were previously considered to be relevant only to industrialized countries. New ideas such as 'science and technology advice' and 'science and technology diplomacy' are increasingly being taken on board by developing countries.

The impact of the report has been to move the agenda forward. This has resulted in more countries having confidence in their ability to search, internally and externally, for what can be applied immediately, rather than being paralyzed by uncertainty over the long-term returns of R&D. Finally, the report went beyond the original focus on information and communication technologies (ICTs) and examined the potential role of other platform technologies such as biotechnology, nanotechnology and new materials technology.

The best way for governments to deliver on the promise of innovation for development is to recognize the links between diverse actors and create appropriate advisory mechanisms for heads of state and government. The presidents and prime ministers of a number of industrialized countries use science and innovation advisors. India and Malaysia use such advisors to good effect, but this crucial service is still nascent in many developing countries. Chief science and innovation advisors to presidents and prime ministers have become as indispensible as their economic counterparts.

But having science advisors is not enough. Governments must be prepared to make available necessary resources such as basic infrastructure and budgets that will maintain the structure and provide the supervision to ensure that the resources are being used appropriately.

Many countries with low and medium incomes have reversed the World Bank led campaign against investment in infrastructure that took place in the 1990s. They have been promoting the concept of indigenously designed, built and maintained infrastructure facilities such as energy, water, ICT, transport, schools and clinics in remote and rural areas. However, the new enthusiasm for investment in basic infrastructure in these countries has often reverted to the failed model of megaprojects that are totally unsuited to the countries' stages of development.

One of the key features of countries with low and medium incomes, in particular–the BRIC countries (Brazil, Russia, India and China), is their desire to cooperate on issues related to STI. In a way, this is a manifestation of the changing landscape of international diplomacy in a globalizing world.

Science and innovation will continue to be strong drivers of cooperation in these nations. These countries are also important sources of institutional innovations that are aimed at supporting the application of technology in development. For example, Ethiopia has created an Agricultural Transformation Agency whose structure and functions resemble the Brazilian Agricultural Research Cooperation (EMBRAPA). Another example is the International Science Technology and Innovation Centre for South-South Cooperation (ISTIC), established under the auspices of UNESCO in Kuala Lumpur in 2007. This centre, totally funded by Malaysia, is working hard to get medium income countries to anchor some of the innovative technologies, policies and institutions that are crucial to development (such as Malaysia's STI template for economic development, China's green energy, India's energy, climate change, and infrastructure maintenance institutes, and Brazil's biofuels) in low income countries. In keeping with the spirit of the Task Force's report, expertise in innovation is already becoming a bigger part of the contribution the BRIC countries make to the rest of the world.

Developing countries are still committed to achieving the MDGs by 2015 and most policy makers and decision makers know that STI must play a key role. But much work remains to be done to resist international scientific

pressure to invest prematurely and heavily in basic scientific R&D in universities and research institutes that do not address the pressing issues on the ground. Unless STI starts to show results and alleviate hunger, poverty, illiteracy and ill-health, political and social upheavals will continue to plague our world.

Published by CTA, http://knowledge.cta.int/
Edited by J.A. Francis, CTA and R. Engelhard, Contactivity

Citation: CTA 2013. http://knowledge.cta.int/, "author" accessed on "date."