Agricultural Research: Towards a Shared, Global Vision for the New Millennium

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Abstract

The notion of high returns to investment in agricultural research is closely linked to the degree to which research results can find widespread application among the intended beneficiaries: farming communities. A critical test of research success is the effectiveness of the technology development and diffusion process in tailoring the results to the needs and requirements of farmers. Ironically enough, the rapid pace of scientific accomplishments in this field has been accompanied by a very sluggish adoption of modern technologies by the intended end-users, who found them to be largely unsuited to their particular biophysical and socio-economic circumstances. This has caused considerable frustration and led the scientific community to take a new and careful look at the conventional modes of conducting applied research.

In response to the above impasse, the international agricultural research community is endeavouring to make a truly qualitative shift in the way in which it operates. Initiatives are now under way to promote productive partnerships and there are considerable grounds for believing that research results will soon be able to find rapid fruition in farmers’ fields. Success in this domain would also be critical in renewing enthusiasm among policy makers and the international donor community for increasing investments in research.

Rationale for Revisiting the Technology Generation Process

Although the issue of sustainability, particularly with regard to long-term management of natural resources by the rural resource-poor, has been to the fore for quite some time now, the need to address local-specific issues – such as incentives to adopt particular technology prototypes; the socio-economic context of food production, availability and access by the disadvantaged; and the policy and institutional environment – has only recently started to attract the attention of those involved in the technology generation process.

The latest scientific achievements are transforming the institutional context of agricultural research. Advances in genetic sciences have led to an increasingly profound knowledge of the genetic map of living organisms, whereas improvements in gene transfer techniques are making it possible to generate plant species and varieties that promise resilience and adaptability to harsh agricultural environments hitherto considered unfit for agricultural production. Developments such as these can potentially change the economics and even the very structure of agricultural production.

The private sector has now become a particularly strong player, pouring massive investments into state-of-the-art research. Furthermore, intellectual property rights and breeders’ rights are gaining increasing importance within the knowledge generation process, while issues relating to farmers, rights, international public goods with transparent developmental objectives, and critical questions relating to access to technology and knowledge empowerment, are currently generating a lively public debate, cutting right across scientific, legal, economic, environmental and institutional constituencies.

Building New Partnerships

The International Consultation on the NARS Vision of International Agricultural Research took place in Rome in December 1994, hosted by IFAD, and examined the
question of how the NARS in developing countries could play an active part in shaping a vision for international agricultural research. Participating NARS representatives pointed to specific niches in which they felt capable of making a meaningful contribution to the global research system, through to the next century.

The partnership between NARS, the CGIAR Centres and the private sector represents a collective, global capacity to provide solutions to strategic problems and to fulfill the overall objective of combating rural poverty – an objective which has now become an integral part of the CG’s overall mandate and philosophy.

Increasing the relevance of technology to small farmers, and improving the chances of adoption of that technology by the farmers themselves, is also the rationale for the current, progressive move from international strategic and applied research towards national and more location-specific research efforts. Many donors are already supporting initiatives to transfer some of the responsibilities of international centres – particularly with regard to training and on-farm testing – to stronger, national research institutions. A step in the right direction here is also being made by the establishment/strengthening of collaborative research networks and consortia arrangements that draw-in national programmes as full and effective partners in research and training.

While the individual strengths of NARS, CGIAR Centres and the private sector may vary, their collective strength is undeniably formidable. There are exceptional opportunities today for new forms of partnership, due to the arrival of new research tools, such as biotechnology, genetic engineering, information technologies and others, in many aspects of which NARS can provide effective leadership.

A GLOBAL FORUM FOR AGRICULTURAL RESEARCH - A REALITY

The CGIAR celebrated its 25th anniversary in October 1996. One of the major highlights was the Global Forum on Agricultural Research (GFAR), considered as a milestone in the history of the CGIAR. The Forum brought together, for the first time, representatives from all the stakeholders in the global agricultural research system. These include leading scientists and research scientists and resource persons from the CGIAR, NARS, universities and the academia, the advanced research institutions, the private sector, civil society/NGO community and farmer organisations, as well as the international donor community and, of course, the members of the CGIAR.
The GFAR was successful in obtaining explicit expressions of support from the broad range of constituencies. It must be remembered, however, that this is still an evolving process: its Plan of Action is a living document, leaving scope for constant refinement. Meanwhile, GFAR stakeholders have agreed to work together in five critical areas, which are:

(a) new institutional and organisational approaches to agricultural research and development;
(b) genetic resources management and biotechnology;
(c) natural resources management and agroecology;
(d) the development of global/regional research networks on important crops, based on a commodity-chain approach; and
(e) the establishment of a global knowledge system for agricultural research and development.

IFAD'S ONGOING ROLE IN GFAR
IFAD is currently chairing the GFAR Donor Support Group and is an active member, as a facilitating agency, of the Global Forum Steering Committee. The Fund is also playing a key role in defining the work plan and budget for all GFAR activities.

TOWARDS A SHARED, GLOBAL VISION
Food security, poverty eradication and natural resources management are not only matters of concern to developing countries, they have in fact become critical global issues; given their impact on the well-being of society in general. A truly concerted effort is needed, therefore, to provide an immediate and collective response to these challenges. The rapid process of socio-economic and environmental deterioration taking place in many parts of the world is a further indication – if one were needed – of the urgency with which action must be taken.

The potential for combining the knowledge and capacity generated by scientific advances, and utilising this combination to address development challenges, is now greater than ever. The last milestone appointment for the GFAR stakeholders was Dresden, at the Global Forum for Agricultural Research 2000 which mobilised the world scientific community for this very purpose.

Sensitive to the challenges and opportunities facing the rural resource poor, and responsive to new scientific developments, here is a truly Global Agricultural Research System for the new millennium.

Through its Research-for-Development grants programme, IFAD has supported a large number of collaborative research initiatives based on mutual strengths and needs of all stakeholders. In the process it has encouraged participation of its clients among farming communities in the developing world. Such a process of strengthening the role of the small farmers in the generation of technologies has had enormous spin-offs, including their empowerment. A sharpening of focus on socio-economic research and participatory training which takes into account a broad spectrum of non-bio-physical factors – gender relations, for instance – contributes to enhancing the self-confidence and capability of some of the Fund’s major stakeholders – the poor rural women. The individual strengths of farm households may vary but their collective strength is formidable and the effort is to capture this collective strength for charting the path towards sustainable food security and for eradicating rural poverty and bring the disadvantaged stakeholders into the global exchange of knowledge. This contributes to effective/efficient research systems, linked as they are to agents of change which afford the process to build on relevant local dynamics, traditional knowledge and coping strategies.

The above now represents the standard approach adopted in all IFAD-financed research programmes and is an important criterion used for the selection of collaborative research initiatives the Fund intends to support. Among the on-going programmes, IFAD is promoting collaboration between local research entities and farmer-run private micro-enterprises to produce Urea super-granule briquettes – a farmer-driven partnership that is proving successful not only in optimising the management of soil nutrients in resource-poor rice growing areas of Bangladesh, India, Nepal and Indonesia, but equally importantly it is creating a vibrant local economy in areas where the technology has found rapid adoption as a source.

Figure 5
A min-fundio farmer in San Luis de Palme, Argentina, stores harvested maize that is then ground into flour. He has received credit from the project to grow this maize.
Photo: Giuseppe Bizzarri
of off-farm income for the rural poor. Elsewhere in East Africa, the Fund is promoting adaptive research partnerships led by farming communities, with the assistance of NGOs, the private sector and, international and local research partners, leading to widespread adoption of sericulture and apiculture technologies that promise considerable pecuniary benefits to both farmers and middlemen alike. The latter are viewed as the change agents helping create a financially sustainable environment for the new technologies being introduced while poor farmers in Kenya, Uganda, Ethiopia, Tanzania and Zambia stand empowered by knowledge and skills to supply highly demanded products for the honey and silk industry and markets in Africa and beyond.

ABOUT THE AUTHOR
Shantanu Mathur is IFAD’s Coordinator of the Research for Development Grants Programme and Technical Adviser, Economic and Financial Analysis, Programme Management Department, IFAD. He has a Bachelor’s degree in Mathematics and two Master’s Degrees in Applied and Advanced Economics from Cambridge University. He worked as an Economist at the Food and Agriculture Organisation of the United Nations (FAO) between 1985–87 and since then, in various capacities at the International Fund for Agricultural Development including as Economist, Africa Division (1988); Resource Economist, Technical Advisory Division (1989–91); and Technical Adviser, Economic and Financial Analysis (since 1992). He has a number of publications to his credit, having edited three books on the subjects of Pro-poor Research and Development and has published many papers/articles in journals and books on the subject of development economics. He has also authored several FAO and IFAD Reports and Publications, including a number of Policy and Strategy Papers on Environment, Nutrition, the Advancement of poor rural women through IFAD Project and IFAD’s Policy for Grant Financing of Research for Development.

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