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Toward Global Partnership in Agricultural Research

**The Needs and Opportunities for Agricultural Research From
the Perspective of the CGIAR**

The attached paper is circulated as an input into the discussions leading to the *Declaration and Action Plan for Global Partnerships in Agricultural Research*.

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**Needs and Opportunities for Agricultural Research:
A Perspective from the CGIAR
ICW96 -- 30 October 96**

Background

The needs for research dealing with agriculture, fish, forests, and livestock are driven by humankind's needs for adequate quantities of food and fiber at prices that are socially acceptable and with consequences for the environment that are also socially acceptable. Through science, usually high science, each generation sees new opportunities to develop new solutions to its needs.

The pursuit of high science will drive the work of some, including to some extent, that of the CGIAR. The bulk of the System's work, however, will be to translate the products of such science, whatever their source, into products meeting the needs of poor people.

Recall that the CGIAR is people-centered and that the goals that drive it rest on poverty alleviation and protection for the environment. It is estimated that more than 1.3b people in developing countries have incomes below \$1 per day and that more than 800m people are malnourished, largely because they are too poor to buy food. Many of these people live in rural areas and depend on agriculture for their livelihoods. Virtually all of them, whether in rural areas or in urban areas, spend roughly half of their meager budgets on food.

Meanwhile, the world's population is growing, and growing most rapidly in poor countries. Indeed, according to World Bank estimates, the number of poor has increased slightly over the recent past, as the growth in population has overrun the solid gains made in personal income. Improving the lot of present and future poor will require more productive technologies which protect the environment--especially the biodiversity, the land, and the water. All of this is to say the obvious: that the challenge to research motivated by the needs of the poor is truly daunting--what some have called heroic.

Building on the past and guided by the spirit of Lucerne, the CGIAR has made strong efforts over the last two years to assess its role in the global agenda for research on agriculture. As examples, special attention has been given to clarifying the goals of the System, to fostering transparency, to encouraging closer working relationships with others involved in similar or related pursuits, to framing priorities after consultation with others knowledgeable about the needs and opportunities in developing countries, and to ensuring efficiency in the pursuit of the System's goals.

Perspectives

Against that brief background, and taking into account the advantages of regional networks, national programs, the private sector, and the NGOs, what are the areas in which the

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CGIAR will be most likely to support the global system and to approach its goals of poverty alleviation while attending the environment?

What follows describes shifts in the CGIAR portfolio, not the entire portfolio itself. These shifts are aimed at improving the fit between the CGIAR and others. They rest on a sense of what others might do, on the CGIAR's emphasis on working for present and future poor, and on the conclusion that the System's advantage lies in international public goods. The observations are structured around the five major undertakings featured at Lucerne and emerge from the Priorities and Strategies paper discussed at the MTM96 in Jakarta.

- In germplasm improvement related to crops, added emphasis will be given to pre-breeding--the art of bringing novel genes into the System's mandated products, whether from the many variants within the species, from primitive materials, from wild relatives, or from unrelated species. These additions will expand the capacity of plants to adapt to biotic and abiotic stresses while increasing the yield plateau. The efforts will incorporate new science. (Recall the evidence of that in Gurdev Khush's report on redesigning the rice plant where molecular markers, crop modeling, and new statistical designs have been a part of his pursuit.) New partnerships, certainly including the private sector, will play a featured role. In all of this, the CGIAR will concentrate on opportunities arising where NARS are weaker.

For livestock, the System will give more emphasis to molecular genetics important to disease resistance while for fish there appear to be good opportunities in improving carp species. The products that emerge will have broad applications, in effect, will be international public goods, while offering others the scope for further refinement to meet particular needs.

- In its work on resource-conserving, production systems, the CGIAR will be especially concerned with developing and testing robust and efficient research paradigms that give rise to productivity-increasing, resource-conserving technologies. These paradigms will aim to minimize the trade-offs between income and the environment, a point emphasized in FAO's *Agriculture Towards 2010*. Moreover, they will bring off-site repercussions into the analysis. Issues in water management, including themes pertaining to human health and to potable water, will receive more attention. Livestock and forest systems will also receive more attention as will work on the interactions between land-based and coastal systems.

The world will benefit from a more consistent, systematic, and environmentally sensitive framework for research on integrated natural resources management. Such a framework will, indeed must, rest on the insights and actions of producers and consumers, national programs and universities, of CGIAR Centers, and of high science, whatever its source. Achieving our collective aims will be a daunting task. The requirements are stringent. New insights in biology and in the organization and functioning of institutions will be among those requirements.

National programs, NGOs, and CGIAR Centers have stepped into the arena. The Systemwide Program on Irrigated Rice-Wheat Based Systems for the Indo-Gangetic Plain, the

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Systemwide Livestock Program, and the Systemwide Initiative on Participatory Research and Gender Analysis for Technology Development are but three examples.

- For germplasm conservation and management, the System must remain especially concerned with its obligations to the global community for genetic resources relevant to the CGIAR's mandated products. Beyond that, and more generally, the System will give more attention to refining the world's understanding of the complementarities between ex-situ and in-situ conservation, to reduce the cost and increase the reliability of both techniques, and to train others in their use.
- In the policy arena, more emphasis will be on improving "the rules of the road", especially in those areas of broad concern where other CGIAR expertise brings an understanding of the opportunities through biology, as in issues related to common property and open access. Again, the System has a challenging opportunity from gaining a more profound understanding of the role and characteristics of institutions. (We heard that yesterday from CIAT's report, among others.) For example, studies commissioned by TAC underscore the importance of community institutions in successful efforts to conserve natural resources. As well, the System has an advantage in training others in the analysis of policy and in promoting the public understanding on which policy changes ultimately rest.
- Efforts in strengthening national systems will give more attention to training and research as these relate to management of research enterprises, facilitating the introduction of useful techniques and tools for research managers. Once implemented, these techniques will bring greater efficiencies in management and, as just one potential advantage, the promise of stronger domestic and international support for national research. As well, the System must respond to the demands for training in the new techniques coming into the researcher's tool kit.

In each of these arenas the System must **also** be prepared to play the role of honest broker in stimulating interaction, in providing appropriate information, and in reaching out to others whose competencies might be useful in achieving the System's broad goals, including those who can contribute to priority setting. The range of working relationships with national programs, with universities, with NGOs, and with the private sector, already expanding rapidly, will continue to multiply.

Final Remarks

In brief, then, while needs and opportunities for the global system are almost uncountable, the CGIAR will emphasize those that will make the most difference to the poor and, simultaneously, in which it has a clear advantage. The System is a dynamic organization. It has regularly given evidence of its capacity to adapt to important changes in circumstances. Its current portfolio of activities and its current tool kit again attest to its agility in adapting. Thanks to the emphasis on the global system and on openness, which has given the CGIAR a much broader view of the possible, the System is well positioned to play its role in translating needs into opportunities for the poor of today and tomorrow.

Final