COMMENTS AND DISCUSSION

Chaired by Masato Ito*

Comment by Klaus Frohberg:

As an advocate of competition of best ideas, I think we should continue to compete. However, while doing so, we should at least share what is being done elsewhere. Often the information on what kind of research is carried out in other countries and other organizations is rather weak.

I would like to add some organizational structure, that is, the layer organization. These are called development networks. These networks do not focus on agricultural research for development; they pursue all forms of development research. They are also rather young, but they do have annual meetings. The Global Development Network was held in July in Cairo.

There is the European Development Network, and Germans also try to organize themselves in a development network called DFOR, the German acronym for Deutsche Forum für Entwicklungsorientierte Forschung. Here we also have all development researchers present, but I must admit that, currently, the focus of the German network members is taken very much on agricultural research. These networks are open to other research organizations. Their memberships are open to nongovernmental organizations, as well as organizations that do not carry out research as such but help disseminate research results like GTZ. Of course they are also open to individuals who want to join.

Development researchers in Germany organize an annual meeting to which everyone doing development research is invited. These annual meetings are very successful. The last meeting had about 500 participants. Again, this was just the German meeting. You can imagine what it would be like if you had similar meetings on a larger spatial scale.

I would like to end with a few words on interdisciplinary research. My research center, the Center for Development Research in Bonn, conducts interdisciplinary research. We have three divisions, one on natural resource management, one on political and cultural change, and one on economic problems. These three divisions are working together in solving water problems in Uzbekistan, trying to prevent the Ural Sea from drying out. Yesterday morning, Professor Tanaka remarked on another solution, that is, to have an organization with all types of research disciplines led by people who are dedicated to doing interdisciplinary research. However, we have a lot of doctoral students who have to take lessons on interdisciplinary research. The economic students do not like to go into natural resources, but they are forced to listen to these lectures as well, and they are forced to write term papers together. This is a very helpful undertaking.

Comment by Stephen Tyler:

The International Development Research Center (IDRC) is a development-oriented organization, but we see our small role in contributing to international development as being through applied research. We fund research by developing country scientists in their own countries. In our view, the generation of knowledge and the creation of expertise locally is a very crucial part of the development process. We focus most of our efforts in the poorest countries in the world as a way to empower organizations and experts in those countries.

A key element of our structure: while we were created and are largely supported by the government of Canada, our board of governors is independent. Almost half of that board consists of distinguished

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international scientists, researchers, and experts from developing countries. So even in our governance, we respond very much to the needs of the South. Just in terms of scale, of this total staff, we have about 60 scientific professionals around the world. About three-quarters of our budget comes from the government of Canada and the rest from contracts and special research arrangements with other agencies. We have six regional offices. Our headquarters are in Ottawa. We do not do the research. Rather, we work with our partners to define research programs which are problem-focused. The research is undertaken by developing country specialists and researchers. About 15 to 20% of our projects also have collaboration from Canadian partners.

I agree very much with the comments of Professor Demment about the importance of taking time to establish relationships and build real partnerships for that kind of research collaboration. In terms of agriculture and development, one of three programming areas for IDRC is environment and natural resource management. Here we focus on food and water security, on eco-system management for human health and development, and on equity in access to biodiversity.

Across the center we have 12 different program initiatives. Six of them, about 40% of our program budget, are on environment and natural resources. Three different regional programs focus on participatory approaches to natural research management: one in Latin America in the Caribbean, one in Asia, and one in Africa and the Middle East. In addition, we have urban agriculture programs, eco-system approaches to human health, and biodiversity. We also have programs in other areas besides environment and natural resource management. These 12 programs are multidisciplinary; they combine disciplinary inputs and focus on problems. They are not country-specific but cross regional boundaries. We have strong support for networks of researchers who are engaged in these programs to interact and learn from each other. We are very much focused on the impact of our research on changes that are brought about by this research, as well as on capacity building. We have developed tools to evaluate how well we are performing there.

That's all I really want to say about IDRC.

Comment by Kenichi Higo[†]:

The International Rice Genome Sequence Project is one of the most successful international collaborations in genome research. Not only Japan but also Korea, China, Taiwan, Thailand and India have participated in the project. Moreover, non-Asian participants from South Africa, Brazil, the United Kingdom, the United States, and France also joined this project.

Last December, there was a ceremony in Tokyo to commemorate the completion of a high-quality draft sequence. Three papers have been published so far in international journals such as *Nature* and *Science* by scientists from Japan, China, and the USA. As we now have much information on the rice genome in the database, everybody in the world is working toward the functional analysis of the rice genome. First, the scientists have worked on the rice genome, and then they are trying to apply their results to wheat and maize research.

Our institute has been involved in the Genome Project in the past twelve years. Over that time, we have accumulated many resources and now have several thousand DNA markers for mapping, more than 30,000 cDNA clones, and mutant rice lines. These resources are stored at our institute and are available to scientists from academic societies and non-profit organizations by just paying handling fees. We also have been constructing databases at our institute that are open to the public through our webpage. We are also trying to link various databases including one in the IRRI.

Under the circumstance that these materials and information are open to the public, what sort of collaboration is really necessary? You do not have to ask for collaboration just to obtain materials because it

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is already almost free. One type of collaboration in which we have great interest is the CGIAR Challenge Program called "Unlocking Genetic Resources in Crops for the Resource Poor." We plan to provide in-kind contribution for this program by assigning several scientists specifically working on the project.

We also started bilateral collaboration with the IRRI for selected targets. An agreement was signed in 2002. We were supposed to submit a work plan within three months, but we are still updating the plan because the situation is changing in the genomic research area. For example, you might have noticed a news release that one American company has started commercializing a rice genome microarray. We first asked the company whether they were interested in commercializing the microarray and they started selling it this November. Anyone can now access the rice microarray.

Another kind of collaboration would be to establish some sort of network-type or consortium-type collaboration. Some people are interested in the Functional Rice Genomics Consortium, and we are still discussing what sort of agreement can be attained. One of the biggest agenda may be intellectual property rights.

Noguchi:

Dr. Demment emphasized the importance of human resource development. A very long time has passed, and we are still short of talented people. How have you acquired a program leader or opinion leader for the success of the CRSP model? Do you have any education system to train such a good program leader or designer for the success of the CRISP model?

Demment:

One of the things that is very good about the assessment process is that you get the opportunity to see the leadership of the assessment and how it is managed. We carefully interact with the assessment teams as they proceed. By the end of the assessment process, we have a very good idea of whether we have a good leader and a good team. We make some of our decisions based on that. It is very clear that the qualities required of the team leader are often qualities that are not embodied in all scientists. It takes some experience with that leadership position to be able to judge whether or not you are going to have a good team or not. Often you find that in the assessment process that the leadership will change, that the team itself will recognize that the person who started isn't the one that they want in the end. A good team has fairly open communication and often we see an evolution of leadership within a CRSP program.

Hitoshi Nakagawa (JIRCAS):

In training scientists from developing countries, Dr. Demment mentioned that, in some cases, scientists have been reluctant to return to their home countries. Apparently they want to stay in the United States and obtain a Green Card. How do you handle this problem?

Demment:

A Green Card is a document that is worth quite a bit of money in the open market in the United States. It is a passport to a job. This has always been a big problem with USAID. It is particularly a problem when you take somebody from Kenya, you bring them to Purdue University, you teach them genetics, they do their research on soybeans in the United States, they attend agronomic conferences, they make all of their connections in the United States (and those are the most important connections we as scientists make), and then you say, "Oh, by the way, go back to Kenya where you don't know anybody in the scientific community because you have been in the United States for four or five years."

The good thing about the CRSP model is that this project forms a research context within which each individual Ph.D. dissertation makes sense in the context of solving the problem in his/her own country. The Kenyan may go to Purdue for a year and take courses, but then he/she goes back and does three years of field

work in his/her country with a partner in a project from the University of Nairobi. So he/she gets his degree from Purdue but then works with fellow scientists on the team at the University of Nairobi. In that situation, it is much more conducive, so we have a return rate of about 95%. Given our recent immigration policies, that actually will be closer to 100%.

Leah Buendia (Philippine Council for Agriculture, Forestry and Natural Resources):

One of the famous modalities for collaboration is networking. It seems that there has been a proliferation of networks nowadays—commodity-based networks, regional networks, global networks, and the like. I would like to get the ideas on how we can rationalize networks nowadays. For someone like me from a developing country, the mindset is to join all the networks to benefit from all. So how can we now rationalize the networks?

Saint-Martin:

Your question goes back to the question raised by Mr. Frohberg on the priories: how do you set up the priorities in the world of agricultural research for development? Today, there is an emergence of civil society organizations with much more empowerment. This is very important when you consider how a network is working and how the issue that this network is treating has an empowerment of all the stakeholders involved in the approach. If you take a cash crop, the network is important. You can meet producers, consumers, users and processors, and scientists. In this way, the network gives you good guidance on how applicable the network to which you want to contribute is. With the CIRAD, we try to support the network at the regional level in the South. In West Africa, for example, the regional organizations have developed networks with all the stakeholders. When they come from the countries at the regional levels with all the stakeholders, they give us some good incentive to go there and support them.

Demment:

My experience with networks is most strong in East Africa with ASARECA, an organization with regional commodity networks. I think the networks are very excellent ideas. One of the things that you see in the NARS in East Africa has been that often the scientists within the agricultural research institutes themselves lack access to the kinds of exchange and resources they need to properly express their creativity. The networks in a sense elevate them above the local organization of the NARS and allow them to more fully participate in regional issues. Therefore, the problem is not whether you participate in too many, but rather how much you wish to concentrate your efforts on a particular network. I see it as a very positive activity. In fact, I think that it is really a way for regions like East Africa to be able to step outside the constraints imposed by the NARS and do research at a high level that could not be achieved within the national research institutes themselves.

Oh:

In Korea we don't have many networks, but from my personal experience the key component to be successful in networking is to share what you have, whatever might be interesting or helpful to other members. Without that philosophy, networking is not working. A network will not ensure that you publish a good report, but it may certainly give some impact.