German NGO Forum
Environment & Development

Food Without Farmers?

Agricultural research needs a profoundly changed CGIAR

German NGO Forum Environment & Development

Published by:
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Funding of the publication by Brot für die Welt as well as the European Community is gratefully acknowledged.

This document has been produced with the financial assistance of the European Community. The views expressed herein are those of the German NGO Forum Environment & Development/Deutscher Naturschutzring and can therefore in no way be taken to reflect the official opinion of the European Community.

Bonn, May 2001

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Introduction

Food without farmers? This provoking title was chosen not to point to technologies how to produce food on fully mechanized farms, or even without farms or land, maybe in laboratories…. That would have been a different and a rather unreal topic.

Civil Society Organisations are concerned about a development towards an agricultural production that continues to rely on farmers, but in a different way. Farmers in the North produce food on farms, with an average size that has increased over the past decades. Equally, the number of people fed by a Northern farmer has increased and set these people free for other productive work, as economists put it. Production methods and associated research have changed considerably. Farmers are under constant pressure to invest heavily and update their installations, too often with the help of subsidies. Food has to become cheaper. The paradigm is: Yields have to be increased, and everything – except for the weather - is under control: Soil, water, fertilizer, pests, diseases, and, as a comparably new development, genetics. Control is so tight that phenomena that were not expected can simply be ignored or hushed up, like the Bovine Spongiforme Encephalopathy. Although BSE existed in England it was not systematically studied for many years. How could farmers not have noticed? Where were the farmers whose task is to ensure healthy food production, appropriate livestock keeping, unspoiled soil and water, and rich biodiversity? Are they distracted by other objectives? Only a small percentage of Northern farmers produce outside the mainstream. They reject short-term economics and refuse to externalize environmental cost.

Farmers in the South work in equally unromantic but different settings. Most of them live in poverty or under its constant threat. During the past decades, many countries, and first their farmers, impoverished. Other countries have moved up to or passed the threshold and reduced the percentage of urban and rural poor. None of them managed to conserve their agricultural resources well enough so as not to raise concerns of international scientists taking stock of the world's state of the environment. Farmers decided on high yielding varieties, and landraces disappeared by the hundreds, although they carried genes that may have helped to fight future types of pests or diseases, or to tackle climate changes. Only extremely limited mechanisms are in place to conserve these invaluable genetic resources. Farmers used Northern soil preparation techniques, only to learn decades later that old, more sustainable techniques are being rediscovered by scientists. Decades ago, African farmers were taught to grow maize instead of cassava or sorghum, only to come back to their more reliable food security crops. Integrated pest management is increasingly incorporating traditional pest control techniques and replaceing calender-based pesticide applications. Irrigation dams and canals were built with high costs. That experience is not completely over, however, irrigation techniques developed by farmers are already documented and re-teaching has started.

Food production based on technologies developed by scientists without farmers is rarely sustainable. This is one aspect of "Food without Farmers?", to which two of the articles in this publication relate:

- Thomas Becker analyses the attempts of the world's largest international agricultural research organization, the Consul-tative Group on International Agricultural Research (CGIAR), to carry out participatory research with farmers and comes up with proposals from the NGO perspective and suggestions for improved co-operation between the CGIAR and NGOs.

- Ilse Köhler- Rollefson picks up a widely neglected topic, namely Domestic Animal Diversity. She discusses activities of FAO and the International Livestock Research Institute (ILRI) of the CGIAR in this field and underlines the need to recognize the value of local breeds and stock raisers rights, and to adequately support both.

Globalization and trade liberalization may improve food security through increased access to food at a global level, yet all people may not benefit equally. Access to resources, be it land, water, or seed that is endowed with suitable genetic resources, is a commonly accepted prerequisite for agricultural production. *Food security seems impossible without farmers' secure access to resources. This is another aspect of "Food without Farmers?".*

How can agricultural research contribute to equitably distribute increases in global food production and to ensure that farmers have access to resources? Kristin Dawkins suggests new important fields of research to the International Food Policy Institute (IFPRI) of the CGIAR. Aileen Kwa encourages research institutions, especially the CGIAR, to study the impact of liberalization more thoroughly, and to look into the effects of increasing OECD subsidies.

To implement these and other demands on the CGIAR, the CGIAR would have to change more profoundly than what was proposed by the Change Design and Management Team. Not only structures but also orientation and the attitude towards farmers, Civil Society Organisations, the Private Sector, and scientists from National Agricultural Research Systems need a major CHANGE. A Global Forum on Agricultural Research (GFAR) was created to consult and include these "Stakeholders", but the CGIAR Change propositions accorded the GFAR a minor role. The CGIAR is in danger of isolating itself from its stakeholders. Ann Waters-Bayer, Chair of the CGIAR-NGO Committee summarizes the Change discussion, which, for the first time in the CGIAR's history, was openly accessible. In a next step, decision-making on the Change and beyond the Change, vitally needs to be opened up.

Most of the contributions in this publication were produced for the International Workshop of Non-Government and Small Farmer Organisations on Research for Poverty Alleviation, Dresden, Germany, 19-20 May 2000, while the article on Domestic Animal Biodiversity was prepared for the International Workshop on "Experiences in Farmers Biodiversity Management", held at the Biosphere Reserve Schorfheide-Chorin, Germany 16-18 May 2000. Both workshops were part of the NGO/SFO activities accompanying the Global Forum on Agricultural Research, Dresden, 21-23 May 2000. Ann Waters-Bayer added an up-to-date contribution on the CGIAR Change discussion.

Bonn, May 2001

Participatory Research in the CGIAR

By Thomas Becker, AGRECOL[1]

1. Historical overview over participatory research activities in the CG

Participatory research is not new to the CGIAR. Its history dates back to the 80s when first attempts were made to come into closer contact with farmers. The limitations of a pure commodity orientation were seen quite early by some and led to the development of farming systems research approaches. Although this brought researchers into closer contact with farmers, the question, whether farmers had an active enough participation soon came up and led to experimentation with more farmer participation and to the development of first approaches to do research with farmers. Examples were the work of Mike Collinson at CIMMYT, David Norman at IITA, Christine Okali, Ellen Taylor-Powell and others at ILCA, Clive Lightfoot at IRRI and ICLARM, Michel Pimbert at ICRISAT, Sam Fujisaka at IRRI, as well as CIAT's participatory plant breeding program which was started in the 80s. Most widely known was probably the Farmer-back-to-Farmer model that was developed at CIP. Some of these approaches were well known in several arenas, although, in the CGIAR, they were restricted to a few pockets. The mainstream of biological scientists within CGIAR remained highly skeptical and untouched.

During the next phase, centers took different directions regarding these initial attempts. In very few centers like CIAT, work progressed and advances were made, which finally led to some kind of institutionalization, for example with an increased number of scientists who are knowledgeable in participatory research and the establishment of the core-funded system-wide program for participatory research and gender analysis. However, most of the early attempts did not arrive at a meaningful institutionalization. The lack of clear coordination mechanisms and the marginalization of social scientists led to the fragmentation into a number of largely independent localized initiatives, especially at those commodity centers, where farming systems research had been strong and came to its limits during the nineties. An important factor for the difficulties of participatory approaches to research and development was World Bank's agricultural policy at that time. The infamous training and visit system for extension (T&V) which is firmly based on the technology transfer approach had been developed and was spread all over the world until recently, creating a very difficult environment for more integrated approaches to innovation development with user involve-

[1] The author would like to thank the following persons who provided valuable information and comments on the drafts: Jacqueline Ashby, Wolfgang Bayer, Ann Braun, Kirsten vom Brocke, Anja Christinck, Mohan Dhamotharan, María Fernándes, Susanne Gura, Jürgen Hagmann, Frank Hartwich, Volker Hoffmann, Gerdien Meijerink, Kirsten Probst, Louise Sperling, Gabriele Stoll, Graham Thiele and Ann Waters-Bayer. Nevertheless, the views expressed here are my own and do not necessarily reflect the views of those mentioned here.

ment. In the CGIAR, the drive to go back to strategic research during the beginning of the 90s seemed to mean the end for many of these dispersed participatory activities within the system.

In recent years there is a revived interest for participatory research approaches, now for quite different reasons. International agricultural research is in a crisis, with serious doubts about the scale and the nature of its impact emerging. Criticism was mostly related to lacking impact in eliminating rural poverty, which, among other reasons, led to a stagnation of funding. Donors started to demand more visible impact and more farmer integration into research in order to produce more relevant results. Contributing factors to the changed donor behavior were experiences with public administration reforms toward more accountability and client orientation in a number of donor countries. Centers reacted differently to these demands, but in general this has led to a renewed interest in participatory research approaches within the CG.

Today, activities are situated at different levels, ranging from the system-wide initiative on participatory research and gender analysis, to small and largely unknown projects at different centers. However, every center feels compelled not to ignore the donor demand for more farmer participation and the publication of participatory activities is well over-represented in centers' public-relation brochures as compared to its relative importance in actual CG-research. The pressure to change from outside as the main driving force certainly bears the danger of external overselling.

Until recently, most participatory research activities in the CG were at the level of applied and adaptive research or even technology transfer. Examples are:

- On-farm varietal selection, identification of farmers' preferences
- Involvement of farmers in testing of IPM technologies
- Tree nursery management and dissemination
- Seed multiplication with farmers
- Validation of tillage and soil conservation practices

Quite a number of these down-stream applications of participatory research can of course be understood as strategic in the sense that they developed and validated methodologies that found wider application within and outside the CG-system. However, they were and are often not perceived as that. An interesting example is CIP's involvement in the development of integrated crop management (ICM) for sweet potato, as a direct result of farmer-researcher interactions about rice-IPM in areas where farmers rotate rice with sweet potato.

There are, however, a number of examples for participatory research activities that were framed with explicit strategic goals like methodology development, e.g.:

- The system wide initiative on participatory research and gender analysis,
- ICRISAT's millet breeding program,
- CIAT's development of the CIAL approach[2] and its bean and cassava breeding program,
- IIMI's participatory approaches to irrigation management and others.

[2]CIAL is the abbreviation for „comité de investigación agrícola local" (local agricultural research committees), community-owned and -managed research services staffed by volunteer farmer-researchers with links to formal research and extension services.

2. The state of the art of discussions about former participation in the centers

Opinions regarding the value of participatory research and farmer participation for the CG cover a considerable spectrum. The one end is held by scientists who do not consider participatory approaches to research to be proper science at all. To them farmer participation means the end of good research. Some see participatory research as a better way of technology transfer, which is not the task of CG. There is probably quite some consensus nowadays about the usefulness of participatory research for adaptive and applied research. Some argue, however, that this should also not be done by CG, but rather by NARS, extension and NGOs. A last view has taken root during recent years: farmer participation should not only be used for adaptive and applied research, but should be seen as strategic at all levels and stages of research processes.

A major problem for a wider integration of farmer participation in programs is that scientists with real experience with participatory research are still the minority by far. Accordingly, opportunities for the integration of farmers into research programs are often not seen. This concerns scientists and management alike.

Senior management has rather diverse levels of understanding, but at the level of the technical advisory committee (TAC), director general and board of trustee chairs, it tends to view participatory research as a donor fad and a misallocation of money. There are, however, exceptions who see participation as critical, especially for research in marginal areas.

This situation seems to be changing slowly. The new vision and strategy paper proposal, which was prepared for GFAR, emphasizes a sharper focus of work on poverty reduction and on targeting those areas and groups with a high incidence of poverty. It also emphasizes the need to make use of participatory approaches on different levels, like priority setting, research planning and for NRM research.

Another indicator for the changing attitude is the system wide review of plant breeding that included participatory plant breeding systematically as a component.

Probably the most important improvement is that today the issue of farmer participation in research can be discussed more seriously with most scientists.

3. Difficulties in the CGIAR with participatory research

The problems of the CG with participatory research are located at different levels. One of the underlying reasons is the CGIAR's narrow conception of agricultural research as natural sciences, partly due to the widely held view that good science is natural science. For agricultural research in the CG, social sciences are at best assigned a supportive function. Especially basic research and partly also strategic research is conceived only as biological research. Sociological reflections on the foundations of science, and more specific on the foundations of agricultural science have never been on the CGIAR's agenda and the CG has always avoided epistemological questions about the theoretical assumptions underlying its understanding of knowledge and how scientists can come to grips with other forms of knowledge[3]. The CG has therefore until now hardly been able to conceptualize innovation development in rural areas with a more holistic perspective where different sciences are integrated on the different levels. This problem is as old

[3] Epistemology is the theory of cognition and knowledge.

as the CG itself, surfacing now again with the renewed interest in participatory approaches to research. If farmer participation is not to be understood and used only as field methods, its theoretical underpinnings from social sciences will have to be elaborated and a clear theoretical and conceptual framework will have to be elaborated.

Another core issue is the low degree of institutionalization of participatory research in the system. This has implications for the strategic orientation regarding participatory approaches, for the number of scientists and managers with experience in participatory research, for the level of understanding of its potentials, for the attitude toward participatory research, for frame conditions like the reward system, and for the possibilities to exchange experiences and networking.

The low level of commitment of senior management to actively support participatory approaches is one of the reasons for its weak institutionalization in the system. However, the problems raised in the following seem to be in a dialectic relationship with institutionalization: they are reasons for the low level of institutionalization and are in turn results of it.

Orientation

- Agricultural research is natural science and follows a natural sciences logic, with a few ingredients from social science. Epistemological questions are not dealt with.
- The CGIAR has been focusing on data production and product results, not on process results.
- Accordingly, the reward system in the CG is still very much based on the production of data instead of impact and process results. Researchers have very little incentive to do participatory research with the risk of becoming marginalized.

Understanding

- Participatory research is often seen as a threat to classic research paradigms and not so much as complementary.
- There is some diversity regarding the understanding of demand driven, client-oriented or participatory research approaches in senior management. Its strategic dimension is not well understood by all.
- The potential of participatory approaches, if at all, is seen only in adaptive and applied research, which is not seen as the task of the CGIAR.
- Commodity orientation of centers, which is still prevailing, hinders a more holistic and systemic cooperation with farmers, which is especially difficult when farmer participation should move up-stream.

Staffing

- There are not enough senior researchers with experience in participatory research at centers. Most researchers working with participatory approaches are young, on soft money and don't have enough incentives or possibilities to stay. Problems with continuity and quality are the consequence.
- The number of experienced practitioners of participatory approaches in general is low.
- Practitioners of participatory research have often been out posted, thereby hindering exchange and better integration.
- Social scientists are still a very marginal group in CG-centers. In this small group, most social scientists are economists, leaving a large blank on other pressing social sciences issues.
- A major drawback for a wider implementation of participatory research approaches is that traditional economists are often either highly skeptical of PR or if not skeptical then without experience in participatory research.

Capacity building and exchange

- Experts in participatory approaches and methods who are hired for that function (advise and help in research planning on how to integrate farmers in projects and programs) are lacking at most centers.
- There are too few opportunities to learn, either in workshops, training courses, or in practical application.
- There have been too few possibilities to exchange and network for practitioners, mainly because there were too few practitioners. Today this situation is changing with the medium of e-mail and since the system wide program has started to tackle such problems.
- Similarly, there has been very little institutionalized collaboration and networking between the different centers. This has also slowly been changing since system-wide programs are working.

4. Strategies regarding participatory research

4.1 Overall strategy in the CG regarding participatory research

When looking at the history of participatory research in the CG, it seems that management's strategy for a long time was to marginalize participatory efforts within the system. It is only recently that donor pressure for more impact in poverty reduction and for more farmer participation is mounting, that participatory research activities are being used for advertisement and public relations. Today it seems that a stage is reached where more room for participatory research is given. However, a clear strategy of management regarding participatory research is not visible, not to mention effects on the CGIAR's structure and organization as well as its procedures for research planning. The untenability of the situation is also clear to TAC: the draft paper on a new strategy to be discussed at the MTM in Dresden focuses work more explicitly on poverty reduction and on areas with high incidence of poverty and speaks of the usefulness of participatory research approaches. How much of it is only for the paper and how much will actually be pushed through remains to be seen. The paper went through a first metamorphosis after the discussions at the special CGIAR Consultative Council meeting, where now some of the suggestions about more participation, focus on less favorable environments and NRM are in danger of getting lost in a sea of words. The paper indicates that these changes would also imply organizational changes, but does not make any suggestions as to what and how. They will probably point in the direction of departing slowly from commodity mandates towards eco-regional mandates for centers, which would mean a major reorganization at centers' level.

The vision paper also stresses the need to invest in what is called "modern science". This is elaborated on the one hand as: "functional genomics; new, powerful and increasingly affordable computing, information and communication technologies; remote sensing and spatial modeling" and on the other hand as "better understanding of human dynamics, social capital, and social organisation leading to participatory approaches to research and development and community management of common resources, i.e. forests, water, rangelands; and concepts of integrated natural resources management (INRM) permitting a more consistent System wide approach to soil and water management research and to work on management of coastal environments".

Whether this means heavy investment into "high-tech", including bio-tech and some marginal down-stream applications of participatory research, or, an integration of participatory research approaches with traditional and new "high-tech" approaches, remains to be seen. In general, the

vision paper offers a useful specification of the vision and goal, but is very vague about strategies, probably for strategic reasons.

4.2 Applied and proposed strategies of participatory initiatives in the CG

Practitioners of participatory research in the CG have much clearer ideas of what needs to happen within the system. They see an urgent need to better institutionalize participatory approaches within the system, which would require core commitment and more continuity. Participatory research should not be left to young scientists with short assignments, but should be firmly supported by management. More senior researchers are needed, who are knowledgeable or become knowledgeable on farmer participation in order to spearhead the insertion of PR approaches into the main CG research programs.

A second issue of institutionalization is the need for more inter-center, system-wide networking and exchange. Such an investment would enable the CG to better draw on its own experiences and to facilitate organizational learning. Related to that, it is hoped that lobbying, networking and publishing about participatory research can bring isolated and scattered effort in the CG to higher visibility.

Another lever for change is seen in donor pressure for more farmer participation. It is important, however, that donor commitment to the issue has a long-term perspective with multi-year funding, if changes are to be substantial.

Quite some effort is put into attempts to produce hard data that should prove the impact of participatory research approaches and their superiority for certain areas, like for example:

- Faster adoption of innovations
- Development of fewer white elephant technologies
- A better reach to the poor
- More sustained farmer innovation
- Other research efficiencies like lower cost for adaptive research

An important issue is the question of down-stream or up-stream participation. It is seen as crucial to reverse the trend of applying and seeing participatory research mainly within applied and adaptive applications. It is argued that the CGIAR's comparative advantage lies in the application of participatory research to strategic and pre-adaptive research, such as:

- Research methodology development, e.g. participatory research methodologies for use by NARS, NGOs, GROs, POs[4] and others and approaches to participatory research in common property management of natural resources
- Pre-breeding
- Plant breeding with segregating lines and early breeding populations biotechnology
- IPM component designs
- Geographic information systems (GIS)
- System modeling of resource flows
- Decision support tools for soil management and land use planning
- Domestication of wild germplasm, including trees

5. Proposals from the point of view of NGOs

A number of proposals have been dealt with implicitly or explicitly in parts 3 and 4.2 of the paper. In this section, I would like to highlight only the most important ones and the ones where we hold differing points of view.

[4] National Agricultural Research System, Non-Government Organizations, Grass Roots Organizations, Producer Organizations

A crucial issue is the re-conceptualization of agricultural research. The system should depart from its understanding of agricultural research as natural sciences carried out in a natural sciences mode and develop an epistemological basis for its research that integrates natural sciences and social sciences perspectives. Such a theoretical foundation is viewed as instrumental to tackling poverty problems in marginalized areas by providing a basis to seriously integrate the different disciplines that are linked to rural development and to develop stable structures for an in-depth dialogue with farmers.

The debate about up-stream or down-stream research is quite interesting. We agree that farmer participation should not be viewed as a down-stream activity for applied and adaptive research only and that it is of vital importance to insert farmer participation into strategic research and priority setting. However, our experience is that farmer participation and farmers' priorities cannot adequately be dealt with through surveys, short visits or short participatory exercises. A real dialogue that enables better mutual understanding requires time, effort, appropriate communication methods, a change of attitudes and behavior from lecturing and information extraction toward joint learning and researching, as well as some visible improvements for the farmers involved, which can only be assured in longer-term interactions that have an impact at farmers' level. It is here, that research and development are inseparably linked. Therefore we believe that it is crucial to develop approaches to tightly integrate down-stream and up-stream applications of farmer participation for research.

We appreciate the sharper focus on poverty reduction and on marginal areas with high incidences of poverty as is proposed in the TAC vision paper to be discussed at the mid-term-meeting. We also appreciate the shift from commodity orientation toward an eco-regional approach, which is imperative if farmers' reality is to be the basis for research. However, we would like to stress the importance of social and cultural factors for adapted innovation development and propose to frame the new approach as eco-socio-regional. This could provide a viable basis for the development of adapted concepts and methods.

The structural, organizational and procedural innovations required to implement such a shift are not to be underestimated and some of them are quite obvious. I would like to point to an issue that is often undervalued and neglected. How could more flexibility be inserted into current procedures for priority setting, research planning and implementation in order be able to react on problems identified during interactions with farmers and other stakeholders? This is also a critical question for donors and their funding, monitoring and evaluation rules and regulations.

We have some doubts about the usefulness of trying to prove the superiority of participatory approaches for certain areas with hard data. We believe that this is largely a waste of time and effort that will lead nowhere. Institutionalization could be served better by

- Documenting examples of participatory research in such a way that others can learn from it,
- Designing participatory research projects with a focus on developing adaptable methodologies and providing learning opportunities for those involved, as well as for outsiders in all phases of the project.

We see a need for the creation of a new support function that would assist other researchers in planning and implementation of research projects in terms of how farmers can constructively be integrated during the different phases. This person would not necessarily have to be a social

scientist; he or she would have to be knowledgeable about participatory research approaches and about agricultural research in order to be able to provide such an advisory function. This function could also include training and on-the-job backstopping.

Apart from such a backstopping function, we see a need to considerably shift the balance between social scientists and natural scientists in centers, if farmer participatory research is to be up-scaled seriously. There has been progress in that respect in some centers, but certainly not enough on a general level.

We support the higher importance given to exchange and networking. We believe that much more effort needs to be made in this area in order to better exploit the knowledge within and outside the system and to promote organizational learning. This is a challenge that senior management should tackle with more emphasis.

Exchange, networking and an advisory function are means of capacity building, however, we believe, that in general more emphasis should be put on capacity building in critical areas.

A difficult issue is the reward system of the CG as well as criteria for staff selection. There is little incentive for researchers to do participatory research. This is certainly not only a problem of the CG, but of scientific institutions in general. However, it seems that the CG is not at the forefront concerning a redefinition of what is considered to be successful research and a successful researcher.

A related issue that also creates difficulties for better co-operation is the very hierarchical structure of CG-centers. It appears to be quite anachronistic and needs a serious revision, especially if partnerships and farmer participation should play a greater role in the future. This concerns both the number of hierarchical steps in the organization, as well as their sometimes quite visible translation into working relations and social relations. Partner organizations with modern structures may find it difficult to co-operate with many CG-centers in their current structure.

6. Suggestions for improved co-operation between the CG and NGOs

Although this paper has not looked into the question of CG-NGO cooperation, we would like to outline some areas and issues for improved cooperation in the future. In the following we do not pretend to speak for the totality of NGOs, rather for those NGOs that deal with rural development with a participatory approach.

Most NGOs do not have their emphasis of work in agricultural research, while there are a few NGOs with considerable experience in this field. The strengths of most NGOs are in community development, people's empowerment, advocacy, technology testing and adaptation. They usually have considerable experience with approaches that involve local people and maintain good links to communities.

For cooperation in participatory research approaches these strengths can be seen as useful complementarities with formal research institutions, which could be exploited much better in the future. When CG-centers embark on participatory research projects they inevitably have to deal with these questions, but often face a number of difficulties. The question of mandate soon arises, the investment needed in terms of time and money is often problematic, dialogical communication methods adapted for a certain area are often not yet developed, access to local people is often resource consuming, and advocacy on questions that cannot be

solved by research alone and that need political action is difficult to do for international research centers. Some of these issues could be tackled much better in an NGO-CGIAR cooperation. NGOs could profit from an improved understanding of research, as well as from the development of methods, techniques and organizational innovations within such a cooperation. Another benefit for NGOs could be a better international standing through the cooperation with well-known research institutions.

A possible benefit for both partners in such cooperation may consist of improved opportunities to receive funding for joint projects from donors who are often development oriented and hesitant to fund plain research.

Certainly, quite some effort on both sides is required in order to forge more joint projects. A lot of reservations have to be overcome, which will require interest, openness and tolerance to the other's philosophy, approach and modes of working. A good starting point is to understand the relationship as a partnership between equals.

A workshop on research partnerships which was held at the end of 1998 under the umbrella of the CGIAR-NGO committee, Misereor, GTZ-BEAF and IIRR identified a number of factors that play an important role for successful NGO-ARI partnerships:

- Clearly stated expectations including strengths and limitations of the partnership;
- Definition of indicators to evaluate the partnership;
- Dissemination of research results in user-friendly format;
- Transparency in use and allocation of funds;
- Open communication;
- Clarification of institutional structures and responsibilities;
- Consideration and planning for cross-cutting issues;
- Phasing of the activities with clearly defined goals and targets for each phase; and
- Attitude reversals to do away with biases and stereotyping.

Another important insight that emerged from the analysis of 12 selected cases of research partnerships was the need for personal commitment from all the people involved. The importance of human interrelationship was identified as a key to successful partnerships as well as the time required building them. If we do not want to leave this to coincidence, we should develop platforms that facilitate the creation of such relationships.

Implementing the Convention on Biodiversity with Respect to Domestic Animal Diversity

By Ilse Köhler-Rollefson, League for Pastoral Peoples

Background

The FAO (FAO, 1999; FAO/UNEP, 1995) is alerting the global community to the alarming figures in respect to domestic animal diversity. It estimates that about one third of the world's recognized 5000 livestock and poultry breeds are endangered and that breeds become extinct at the rate of one per week. Nevertheless, the subject has received much less attention than plant genetic diversity and hardly any awareness appears to exist about the problem of animal genetic resource erosion among either donor agencies or among NGOs and groups at the grassroots level. Contrary to the situation with plant genetic resources, approaches for participatory conservation are lacking, although the majority of the threatened Animal Genetic Resources (AnGR) are vested with traditional pastoralist and farmer communities. Domestic animal diversity is an outcome of these very diverse ethnic and social groups managing domesticated animal populations in a wide variety of habitats and manipulating their genetic composition according to their own needs, cultural preferences, indigenous knowledge and ecological conditions.

The reasons why indigenous breeds become extinct are manifold. Factors include replacement or cross-breeding with exotic breeds, alienation of common property resources (due to break-down of traditional management institutions, crop cultivation, irrigation projects, wildlife protection, tourism, etc.), political conflicts (land disputes and wars), natural disasters (droughts, floods, cyclones), technological advances (replacement of work animals by machines), integration into the global economy, unfavourable marketing and policy environments for local livestock products, and others.

Article 8 of the UN Convention on Biological Diversity states that genetic resources should be conserved in the "surroundings where they have developed their distinct properties" - which with respect to livestock is a reference to the farming and pastoral communities that have nurtured local breeds. Furthermore, the CBD spells out that "the knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity are respected, preserved and maintained". Clearly, the spirit of the CBD calls for a participatory approach to animal genetic resource conservation.

Formal Research on Animal Genetic Resources and the CBD

Let us now look at the activities and approaches of the two international institutions that have shouldered responsibility for finding solutions to the problem of animal genetic resource erosion, in the light of the provisions made in the CBD.

FAO

The Food and Agriculture Organization has been given a world mandate to study, advise, and set guidelines on conserving livestock genetic resources for present and future food security. A core activity of FAO's Initiative for Domestic Animal Diversity (DAD) is the establishment of a database to inventory and monitor AnGR resources worldwide — the DAD Information System or DAD-IS (http://www.fao.org/dad-is). Designated national coordinators in FAO member countries provide the information that is entered into DAD-IS. They characterize breeds according to their production characteristics and population size. The former include milk yield, lactation length, milk fat, litter size, birth weight, adult weight, and adult wither height. Population data recorded in DAD-IS include total population size, total number of females bred, total number of males used for breeding, etc. Up to date more than 5000 livestock and poultry breeds have been registered in DAD-IS. Currently, documentation is further being refined with individual countries compiling national status reports.

Going beyond documentation, the FAO Initiative is also involved in capacity building for achieving conservation of those breeds classified in the database as endangered and critical. Another task is to promote sharing of precious genetic resources as well as free access to this global "public good". To achieve this, the Initiative has set up an intergovernmental mechanism, a technical programme of management support for countries, a cadre of experts, and a country-based global infrastructure of national coordinators. Accepting that it will neither be possible nor even desirable to save the large number of recognized breeds, the FAO has invested heavily into a project of establishing genetic distances between the breeds of various species. The aim is to identify those breeds that are taxonomically most distinct and should therefore be prioritised for conservation (Barker, 1999).

The FAO has commissioned an expertise on the implications of the CBD for the management of animal genetic resources and the conservation of domestic animal diversity (Strauss, 1994). It makes the point that "the indigenous knowledge that has helped to produce and maintain domestic animal diversity is largely unexplored and yet this knowledge is essential in order to understand and continue developing these animal genetic resources." (FAO n.d.).

ILRI

Activities at the International Livestock Research Institute in Addis Ababa also focus on genetics at the molecular level such as establishment of a phylogenetic tree for cattle breeds of Africa and Asia and mapping of genetic traits. Again, these efforts are undertaken with an eye on identifying those genetic resources that are most worthy of being saved. ILRI makes no reference to the CBD (mention of which is also notably absent in the New Vision and Strategy of the CGIAR 2000). In its breed survey questionnaire it however asks for certain information on "adaptive and unique attributes" to be supplied from the Indigenous Knowledge of Farmers.

ILRI has made the following public goods available according to information presented at its website (http://www.cgiar.org/ilri/products):

- A database on the distribution and physical performance characteristics of

African cattle, sheep and goats

- A phylogenetic tree for cattle breeds of Africa and Asia
- Methods for determining ruminant breeds at risk of extinction
- A reference herd of N'Dama-Boran crossbred cattle serving as an international Resource for a global project to develop a primary genetic map of cattle
- The first mapping of quantitative trait loci controlling resistance to haemoparasitic disease of major economic importance (animal trypanosomiasis)
- A set of genetic markers disclosing superior disease (trypanosomiasis)-resistant animals for use in livestock breeding programmes.

Omission of indigenous knowledge

The data collection strategies and databases of both institutions are geared towards the needs of scientists and representatives of government institutions. Rooted in formal scientific concepts and values, they are not designed to integrate and make use of indigenous knowledge. This results in an incomplete picture of the actual situation on the ground that could interfere with conservation efforts.

- Stock raisers and scientists use different terminologies and categories when referring to local livestock breeds. Farmers' breed classification systems may be more refined than the latter, indicating the existence of breeds that have escaped scientific attention. For instance, scientists opine that India's donkey population has not diversified into breeds, but local donkey experts distinguish at least three, phenotypically quite distinct types of donkey that hail from three different areas — making them, in all probability, three breeds or at least strains. Similarly, pastoralists had long known a camel breed from India with high milk-production potential before it was reported scientifically for the first time (Köhler-Rollefson and Rathore 1995).
- Stock raisers evaluate breeds differently than scientists. Whereas the latter are chiefly interested in documenting the output per single production cycle (under optimal husbandry conditions), feed and system efficiency is of greater relevance to farmers who raise animals under severe environmental constraints and have to cope with seasonal shortcomings in fodder supply. In addition, many breeds are appreciated for characteristics that have little to do with productivity, such as ritual significance, social role and aesthetic aspects.
- Population data that are based on scientific breed concepts and do not draw on local breed definitions and terminologies can be misleading. This is illustrated by the case of the Tharparkar cattle in India where no agreement obtains among scientists about which animals are to be subsumed under this category. Some scientists count the entire cattle population (several tens of thousands of head) in the two districts of India where it occurs (or once occurred), while others consider only the couple of hundred animals kept on state breeding farms as "true Tharparkar". Local people on the other hand do not know what 'Tharparkar' means and instead refer to it as 'Sindhan' (Köhler-Rollefson 2000).

As the FAO acknowledges, the sustainable management of AnGR is only feasible with the active participation of farmers and pastoralists. "The most rational and sustainable way to conserve animal genetic resources is to ensure that locally adapted breeds remain a functional part of pro-

duction systems" (FAO, 1999). Adoption of local categories and understanding of local institutions for managing AnGR resources would be a prerequisite for the development of such participatory approaches.

Furthermore, omission of indigenous knowledge and perspectives results in an evaluation of animal breeds on the basis of their outputs of cash products only. It is exactly the conception of animals as commodity producing machines while ignoring other vital traits that has been a prime mover in genetic resource erosion. On the other hand, domestic animal diversity in the South has evolved precisely because its people and cultures relate to animals in a different manner and accord them variable social status and ceremonial roles.

Hence reducing animals to gene sequences is neither legitimate nor will it serve the purpose of conserving domestic animal diversity. We must bear in mind that it was farmers and pastoralists who have created domestic animal diversity by subjecting animal populations to diverse cultural and ecological regimes. Scientifically designed manipulations of gene pools such as artificial insemination, embryo-transplantation, and now cloning on the other hand have invariably resulted in genetic homogenisation. (That this can have positive effects is not disputed here, but represents an entirely different matter).

Setting priorities for breed conservation via molecular genetic techniques is a scientific shortcut that ignores the human dimensions of domestic animal resources. It would seem much more urgent and appropriate to establish a dialogue with the ethnic groups and communities that are associated or have co-evolved with the respective breeds[1]. Understanding of their needs, priorities and attitudes should form the basis for developing conservation strategies. Science alone cannot be expected to conserve DAD, nor will in-situ conservation on government farms and standardized husbandry conditions suffice. Instead, we need to foster as large a diversity of approaches to conservation as possible by getting rural development NGOs, pastoralist associations and others into the picture!

Value of Local Breeds

One important factor driving the process of animal genetic resource erosion is lack of confidence in the value of local breeds. For decades, southern livestock breeds were a priori regarded as less productive than their northern counterparts. Furthermore, it was believed that genetic improvement by selection within the breed was too time-consuming to be worthwhile; hence all energies were spent on attempting a quick fix by crossbreeding. There is now increasing evidence that local breeds may not only be superior, but also that their productivity can be further improved within reasonable timeframes. One example concerns the various zebu cattle breeds (including Ongole, Gir, Kankrej) that were exported from India to Brazil, Australia and other countries earlier this century. In their new homes they have been improved on genetically and come to represent prime beef or dual purpose producers, whereas the Indian populations have decreased in number, become diluted due to cross-breeding and in some cases are regarded as threatened. Some private initiatives in India, such as that by the Gir cattle-breeding farm of the Shri Bhuvaneshwari Pith in Gujarat, show that considerable improvements in milk production can also be achieved. Examples where efforts to replace local breeds with imported ones were reversed include

[1] Not all breeds are associated with particular communities; many of them are composite breeds - the results of scientific efforts to create new breeds, but local farmers never adopted that. It is questionable to what extent they need to be conserved.

- The Indo-Swiss goat project in Rajasthan initially tried to popularise crossbreeding of local goats with Swiss breeds but then came to the conclusion that the native Sirohi goat was superior in many ways (Kropf et al., 1992).

- In Mexico, the Criollo pig was almost replaced by imported white pigs despite its usefulness for smallholders, its ability to make use of local feed and its better taste (Anderson et al., 1999).

- From South Africa there is the case of the Nguni cattle, which is disease resistant and can thrive on poor pastures. The government upgraded this breed by crossbreeding with European breeds but the improved animals also required much higher inputs, which became unaffordable to small farmers. Now there are efforts to re-supply farmers with Nguni cattle whose population has decreased (Blench, 1999).

Stock Raisers Rights

So far there have been no efforts to give credit to stock raisers for their role in nurturing domestic animal diversity, in tune with the concept of "Farmers Rights". This may in part be due to the fact that the significance of indigenous knowledge and institutions in breed formation processes has not yet filtered into general awareness. Animal scientists subscribe to the opinion that local livestock breeds have evolved only in response to ecological conditions without any intellectual inputs by pastoralists or farmers. Documentation of indigenous institutions and practices of animal genetic resource management is hence of crucial importance.

Unfortunately this has not yet happened, although the NGO initiative in India to establish People's Biodiversity Registers provides some valuable pointers. Its intention is to protect people's rights to their intellectual property and natural resources by building an open and transparent system on biodiversity resources from village level upwards (Utkarsh, 2000). It is urgent to extend a similar approach to pastoralists and farmers knowledge on domestic animal resources as well, since it is quite likely that the indigenous breeds from the South that currently receive little appreciation may at some stage in the not so distant future be in great demand in the North as well.

Northern high performance livestock is dangerously inbred and has lost many of its fitness traits. For instance, modern chicken strains are no longer able to hatch their young, because brooding behaviour is no longer present. Turkeys and certain pig breeds often can not mate naturally because of heavily developed chest and thigh muscles respectively and depend on artificial insemination for their reproduction. German cows only survive for an average of 2.7 lactation cycles. Farmers who want to raise poultry under natural conditions outside factory farming systems face problems of finding chicken that can survive outside cages.

To ensure at least a modicum of fitness and vitality in future populations of food-producing animals, and to keep genetic options open, access to fresh genetic material will therefore always be required. Since most of the wild relatives of today's domesticated animals are extinct, a major source of such material lies with the livestock raised by herders and farmers under extensive, subsistence-oriented production systems in the South. This is already being utilized for such purposes by northern livestock industries. In 1990 Australia imported embryos of 269 Tuli and 264 Boran cattle from Zimbabwe and Zambia to improve its Friesian stock in regards to fertility, docility and environmental stress resistance. These imports were hailed as saviours of the northern Australian cattle industry (RAFI/UNDP, n.d.). The threatened

N'dama cattle were used to create a new hardy, disease resistant breed called Senapol that is now raised in the southern US.

The danger of big corporations' free-for-all bio-prospecting among indigenous genetic resources is definitely real. As a recent paper on swine genetics recounts, "Some genotypes formerly not among the ones of economic interest for the industry became targets of the breeding companies' research programs which aimed at discovering and transferring specific genes from these genotypes to the industrial genetic lines. This is for example the case with the highly prolific Chinese breeds and the Iberian pig with excellent meat quality for production of extensively cured pork products" (Pereira et al. 1998).

Given that the stock breeding industry zealously guards and patents their own genetic materials, there is a moral imperative to extend similar protections to traditional stock raisers and breeders — although, granted, this will be no easy task.

Conclusions

Currently few benefits seem to percolate down to pastoral and farming communities from AnGR related activities currently pursued by formal sector international and national institutions. Agendas are pursued predominantly from the so-called "genetic resource angle" that seeks to save or rescue breeds in their role as carriers of genetic material that might have some economic potential in the future and could be valuable for humanity at large. While the important role of many indigenous breeds in sustaining rural livelihoods is also highlighted by the FAO, the existing strategies are insufficient for supporting and facilitating sustainable management of AnGR by farmers and pastoralists. We must be aware that extinction of a breed is often the outward symptom of an existential crisis experienced by the people who previously depended on it. Many breeds can best be saved by supporting the associated communities in their livelihoods through appropriate policies, such as those that ensure access to pastures and markets.

In order to conserve domestic animal diversity in the South in line with the stipulations of the Convention on Biodiversity, activities must be expanded to include the following strategies:

- Documentation of the local/indigenous institutions, breeding practices, and cultures of the peoples who nurtured and shaped so many hardy livestock breeds.
- Decentralization of activities to involve stock raisers themselves in on-the-ground conservation. Pastoralists with their long history of co-evolution often have a culturally highly developed sense of guardianship, partnership, or even personhood vis-à-vis their animals. This heritage should make them the lead actors in conservation efforts
- Ensuring that the specific ethnic groups and societies receive benefit from sharing the unique genetic resources they have created.
- Adoption of a more comprehensive sustainable livelihood approach towards conservation by instituting policies and programmes that secure access to pasture and animal health care and create a level playing field for the marketing of the products of local breeds.
- Information for pastoralists and breeders organizations about the rights they have been accorded in countries that are signatories to the CBD
- Capacity building of NGOs to take up roles as intermediary actors between governments/ research institutions on

one hand and farmers/pastoralists on the other.

In summary, it is both technically and ethically imperative to open channels of communication with stock raisers and to institute mechanisms for reaching the grassroots groups — those who have shaped and stewarded different breeds down through the centuries and who stand to lose the most if these unique resources disappear from the fact of the earth. In order to successfully implement the Convention on Biodiversity, a close integration of the activities of all stakeholders - researchers, governments, civil society, but especially livestock keepers and pastoralists - is absolutely essential and steps towards this goal should be taken without further delay.

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Tab. 1: Numbers of breeds of the major livestock species recorded in he FAO Global databank for Animal Genetic Resources, and the numbers estimated to be at risk *(source: R. M. Blench, 1999)*

Species	Recorded	At risk	% at risk
Donkey	77	9	37.5
Buffalo	72	2	3.6
Cattle	787	135	23.2
Goat	351	44	16.5
Horse	384	120	43.3
Pig	353	69	26.0
Sheep	920	119	18.1
Yak	6	0	0
Dromedary	50	2	4.0
Bacteria camel	7	1	14.3
Alpaca	4	0	0
Llama	4	0	0
Guinea-pig	?	?	?
Duck	62	29	46.8
Turkey	31	11	35.5
Chicken	606	274	45.2
Muscovite duck	14	5	35.7
Goose	59	28	47.5
Guinea-fowl	22	4	18.2
Quail	24	16	66.7
Pigeon	19	4	21.1
Total	**3851**	**872**	**22.6**

Tab. 2: Livestock breeds at risk by region *(source: R.M. Blench 1999)*

Region	Recorded	At risk	At risk %
Africa	396	27	6.8
Asia Pacific	996	105	10.5
Europe	1688	638	37.8
Near East	220	29	13.2
South-Central America	378	15	4.0
North America	204	59	28.9
World	3882	873	22.5

Trade and Food Security: an Urgent Call for Better Agricultural Research

By Kristin Dawkins, Institute for Agriculture and Trade Policy
Minneapolis, MN USA - October 2000[1]

Introduction

Few will deny that food security for all is a crucial goal for humanity, and that agricultural research can and should contribute to achieving this ambition. Such a goal was adopted by the United Nations World Food Summit in 1996. That same year, a network of national agricultural research centers and a host of regional and international research centers, universities, non-governmental organizations and farmers' organizations as well as donors and the private sector founded the Global Forum on Agricultural Research (GFAR). Its mission is "to mobilize the world scientific community" towards alleviating poverty, increasing food security and promoting the sustainable use of natural resources. It also set itself the task of facilitating "the participation of all stakeholders in formulating a truly global framework for development-oriented agricultural research."

The GFAR held its first major meeting in Dresden, Germany in May 2000. In preparation, German non-governmental organizations (NGOs) hosted a workshop for farmers' organizations and other NGOs from around the world. Among their conclusions[2]: "In order to succeed, the GFAR should … have a wider scope than just agricultural research in order to address the issues that ultimately affect smallholders worldwide such as agrarian reform, the equitable access to natural resources, policy issues, research in its broad perspective, organization of markets, income policy, and farmers' and consumers' rights."

Whether GFAR2000 will ultimately be judged a success may depend on how the network of research institutions implement their "Global Vision," articulated in an official "Dresden Declaration."[3] The Declaration emphasizes the value of "a progressive shift of paradigm … towards a holistic 'Knowledge Intensive Agriculture' accessible to small and poor farmers" that

[1] Portions of this paper were drafted with support from the United Nations Food and Agriculture Organization as part of background documentation for the FAO/Netherlands Conference on „The Multifunctional Character of Agriculture and Land," Maastricht, 12-17 September 1999 and submitted to the United Nations Conference on Trade And Development / Non-Governmental Liaison Service Consultation with NGOs held on 12-14 December, 1999 in Geneva.

[2] "Dresden Declaration of NGOs and Farmers' Organizations," 21 May 2000, Dresden, Germany.

[3] "Dresden Declaration 'Towards a Global System for Agricultural Research for Development,'" 25 May 2000, Global Forum for Agricultural Research, Dresden, Germany.

"includes the access to resources by farmers such as land, water and genetic resources." The Declaration also states that "Globalization and trade liberalization may improve food security through increased access to food at a global level, yet all people may not benefit equally."

How then can agricultural research help to equitably distribute increases in global food production; ensure that farmers have access to land, water and seeds; respect and promote the knowledge of small and poor farmers; and address the organization of markets, income policy and farmers' and consumers' rights?

Need for an assessment of the impacts of trade liberalization

During the 1996 World Food Summit, there was fierce debate over the role of trade policy in achieving food security. At that time, the Uruguay Round had barely taken effect and the debate had a theoretical ring to it. Most studies tended to project supply-demand shifts between and among countries induced by liberalization, assuming the reduction of price supports in the North will lead to the elimination of over-supply. For example, a 1995 study by the United Nations Food and Agriculture Organization (FAO) projected that the Uruguay Round, concluded in 1994, would result in price rises ranging from 4% to11% for most commodities by 2000.[4] The World Bank projected that some prices would rise modestly, up to 3.8% in the case of wheat, while others – especially tropical products – would fall more or less by 1%.[5]

It is apparent, at the close of the year 2000, that these projections were seriously mistaken and evidence is accumulating that rural welfare in the developing world is in serious decline.[6] Commodity prices are at historical lows, for both northern export crops and tropical products. Producers all over the world face tremendous difficulties in bringing their crops to market. Analysis is desperately needed to understand why, to evaluate the impacts on small and poor farmers and rural communities everywhere, and to propose reforms to the Uruguay Round Agreement on Agriculture (AoA) that will indeed improve farmers' incomes and global food security. This urgency is all the greater, given that Members of the World Trade Organization (WTO) are now engaged in talks preparing to renegotiate the AoA over the next few years.

Of the network of international agricultural research institutions, the Consultative Group on International Agricultural Research (CGIAR), there has been virtually no analysis of trade policy – although some of its members have taken positions consistent with the theory that trade liberalization will have a beneficial impact on trade in developing countries. For example, one of the CGIAR institutions, the International Food Policy Research Institute (IFPRI) based in Washington DC, produced a series of regional "Vision 2020" documents on "Getting Ready for the Millenium Round" but all of them, whether focused on Africa or Europe or any other region of the world, equate trade liberalization with efficiency, growth and wealth, regardless of the distributive issues.

[4] FAO (1995), „Impact of the Uruguay Round on Agriculture," Food and Agriculture Organization CCP:95/13: Rome.

[5] Goldin and van der Mensbrugghe (1995), cited in "The State of Food and Agriculture: 1995," United Nations Food and Agriculture Organization, Rome, 1995.

[6] UNCTAD (1997), THE LEAST DEVELOPED COUNTRIES: 1997 REPORT; Murphy, Sophia 1999, „Trade and Food Security: An Assessment of the Uruguay Round Agreement on Agricuture," Catholic Institute for International Research: London; International Workshop on WTO Agreement on Agriculture, Research and Information System for the Non-Aligned and Other Developing Countries, Institute for Agriculture and Trade Policy and ActionAid: New Delhi.

IFPRI did issue a study in January 1999[7] analyzing the distributive impacts of regional trade agreements, but it is based on data that precedes the era of liberalization. Of 77 studies cited, 55 of them were published before 1995 and use even earlier data sets – when not even the North American Free Trade Agreement (NAFTA) had yet taken effect. The abstract to this paper further enthuses, "There are even bigger welfare gains when models incorporate aspects of "new trade theory" such as increasing returns, imperfect competition, technology transfers, trade externalities, and dynamic effects such as links between trade liberalization, total factor productivity growth, and capital stock accumulation." Ironically, the sub-title of this paper is "The Search for Large Numbers," demonstrating the emphasis on aggregate wealth creation.

If it is food security that concerns us, there is a tremendous need for up-to-date empirical analysis that is disaggregated by region, nation, crop, and most particularly household and community-level impacts. This research must also consider impacts on natural resources, on resource availability to communities, and on the distribution of increments in both costs and benefits throughout the commodity chain – from the costs of production inputs to farm-gate prices to export prices and all of the marketing, processing, shipping and distributional elements of the local, regional and global food systems.

The Uruguay Round AoA, agreed in 1994, calls for such a careful assessment before further liberalization is undertaken. Specifically, Article 20 states that WTO Members commit themselves to "further reforms in national agriculture support and protection programs … taking into account the experience to that date" and "the effects" of implementing liberalization. It notes that such an assessment should also take into account "non-trade concerns, especially (according to the preamble of the AoA) "food security and the need to protect the environment" as well as "special and differential treatment to developing country Members."

The findings of such an assessment could trigger another part of the Uruguay Round agreements of critical importance to developing countries: the Marrakesh Decision on Measures Concerning the Possible Negative Effects of the Reform Process on Least-Developed and Net Food-Importing Developing Countries. This 1994 decision committed developed countries to provide compensation to low income food deficit countries if they are adversely affected by higher food prices as a result of implementation of the AoA.

Analysis by the FAO since 1995 suggested that for all low-income food deficit countries, their food import bill will indeed be $9.8 billion higher in the year 2000 than at the start of the Uruguay Round negotiations, of which $3.6 billion – a 14% increase – would be directly attributable to the Uruguay Round results.[8] The International Monetary Fund (IMF) disputed the FAO findings, however, on grounds it overstated the degree of liberalization likely to occur from 1995-2000 and subsequently overstated the likely price changes. The IMF claimed the 1996 "food price spikes" were "unrelated to the Round" and that "declining stocks [predicted as an outcome of the Round] do not necessarily imply proportional

[7] Robinson, Sherman and Karen Thierfelder (1999), "Trade Liberalization and Regional Integration: The Search for Large Numbers," International Food Policy Research Institute Trade and Macroeconomics Division, Washington DC.

[8] FAO (1995), „The State of Food and Agriculture: Agricultural Trade: Entering a New Era?" Food and Agriculture Organization Agriculture Series No. 28, ISSN 0081-4539: Rome.

declines in food aid."[9] With this disagreement over price projections and their direct causes in hand, the WTO Committee on Agriculture decided in 1996 not to trigger the Marrakesh Decision's compensation provisions for low income food deficit countries. (The last sentence is not completely clear to me)

Research needs on factors in farm price fluctuations

Agricultural prices, like most other commodity prices, have been in steady decline in inflation adjusted terms since the Second World War. At the same time, the cost of production of most farm commodities has steadily risen. The gap between costs and prices has been bridged in a number of ways including off-farm employment, debt, and direct government payments. Even with these measures, millions of farmers have failed to earn sufficient income and therefore been forced to leave production altogether, in both the developed and developing countries.[10] Although many farmers have left the land, the land has not generally left farming. Instead, new technologies have substituted for labor and other inputs, too. Most fields have continued to be farmed in ever larger units, requiring purchases of larger farm equipment, artificial fertilizers, more pesticides, and so on – generating significant negative environmental impacts and economic decline in many rural communities.

Alongside the general downward trend in farm prices there has also been an increase in price instability. Current prices are at record low levels, while just three years ago many commodities reached record high prices. At that time farmers responded by planting more land than before.[11] Predictably, this turned a world shortage into a world surplus – driving world prices down again to today's crisis levels.[12] A very small increase in imports or exports, or extraordinarily good or bad weather, can cause dramatic changes in prices. Overall, if these changes result in prices below the cost of production of the average producer there will be hardship in the countryside, and if they are well above the cost of production they will cause hardship among landless consumers – both rural and urban.

Governments have attempted to insure against extreme price fluctuations related to unpredictable environmental factors, technological and policy innovations, and other causes of uneven supply. Land set-asides, import and export controls, supply management, and price floors are typical of the kinds of measures that governments take to keep prices within acceptable ranges. The storage of reserves is another effective means of smoothing supply, demand and price variations.[13]

Generally, the goal of trade liberalization is to bring domestic prices in line with world market prices and to allow

[9] IMF (1995), „The Uruguay Round and Net Food Importers," International Monetary Fund: Washington DC.
* This paper was drafted, in part, with support from the United Nations Food and Agriculture Organization as part of background documentation for the FAO/Netherlands Conference on "The Multifunctional Character of Agriculture and Land," Maastricht, 12-17 September 1999.
[10] Commission of the European Communities (1991), "The Agricultural Situation in the Community," Brussels; OECD (1987), "National Agricultural Policies and Agricultural Trade: the European Community," Organization for Economic Cooperation and Development: Paris.

[11] Lehman, Karen and Mark Ritchie (April 1996), „World Food Shortages and the Threat to Sustainable Farming: The Paradox of Higher World Market Prices for Grains," Institute for Agriculture and Trade Policy: Minneapolis.
[12] Solman, Paul (3 February 1999), "Low Commodity Prices May Not Fully Recover; World Bank Fears Difficulties for Emerging Economies." FINANCIAL TIMES: London.
[13] Sarris, Alexander (1998), "Price and Income Variability," OECD Workshop on Emerging Trade Issues in Agriculture," Organization for Economic Cooperation and Development: Paris.

world price signals to influence domestic production patterns.[14] Trade liberalization aims to limit the type and magnitude of government interventions allowed in order to do so.

But other factors than government support need to be considered. Few studies projecting prices into the future take into consideration the cartel power of ever fewer buyers in the monopsonistic global market, or the potential impact of competition policy in response.[15] And anomalies can occur. The 1996 price spike,[16] for example, was caused by bad weather across much of the planet and severe blight in the U.S. wheat crop, as well as the elimination of government grain reserves, in part due to the Uruguay Round. Whether, over the long run, the so-called convergence of domestic and world market prices will cause world commodity prices to rise or whether they will continue their fall further is unknown.

Towards empirical research

For Example Mexico: Although long-run projections cannot be compared with actual prices for years to come, especially because many of the provisions of the Uruguay Round are being phased-in over time, there is a record available for the NAFTA agriculture agreement implemented January 1, 1994. A study[17] by the Commission on Environmental Cooperation recently found that in Mexico, where trade liberalization in farm products is quite advanced, maize prices fell 45% from 1990 to1997 (in constant 1994 pesos). Perhaps more important than this level of decline is a comparison of prices to costs of production: while Mexican maize lost nearly half its value in the market, the prices of major agricultural inputs about doubled in the same period. In 1997, the economy of the rural sector shrank by 6%, despite Mexico's Gross Domestic Product growing by 7%.[18] Certainly there were many factors influencing these prices – from weather to currency exchange rates and national law – but agricultural liberalization was influential.

This study was conducted as part of a research model developed by the NAFTA Commission for Environmental Cooperation (CEC)[19], which appears to be the only fully comprehensive analysis based upon actual experience describing the impacts of trade policies on agriculture, the environment and rural sustainability. It traced four major processes through which activity generated by NAFTA can affect the environment – production, management and technology; physical infrastructure; social organization; and government policy – and evaluated their respective impacts on the air, water, land and biota of North America. The indicators chosen for each were explicit, and environmental, economic,

[14] Sarris, Alexander (1998), „Price and Income Variability," OECD Workshop on Emerging Trade Issues in Agriculture," Organization for Economic Cooperation and Development: Paris.

[15] Barbour, Paul (March 1999), "WTO Reform to State Trading Companies and the Implications for National Food Security of Developing Countries, Institute for Agriculture and Trade Policy: Minneapolis.

[16] FAO (October 1998) "Assessment of the Impact of the Uruguay Round on Agricultural Markets", CCP 99/12, Food and Agriculture Organization: Rome.

[17] Nadal, Alejandro (1999), „Maize in Mexico: Some Environmental Implications of the North American Free Trade Agreement (NAFTA)" in ASSESSING ENVIRONMENTAL EFFECTS OF THE NORTH AMERICAN FREE TRADE AGREEMENT (NAFTA): AN ANALYTICAL FRAMEWORK (PHASE II) AND ISSUE STUDIES, Commission for Environmental Cooperation: Montreal, p.110-118.

[18] ATP (October 1998), " Washington DC Meeting on the WTO Agreement on Agriculture: Food Security, Farmers and a Fair Place for the South," Institute for Agriculture and Trade Policy, Foundation Charles Leopold Mayer pour le Progres de l'Homme, Solagral: Minneapolis, p. 5.

[19] NAFTA CEC (1999), ASSESSING ENVIRONMENTAL EFFECTS OF THE NORTH AMERICAN FREE TRADE AGREEMENT (NAFTA): AN ANALYTICAL FRAMEWORK (PHASE II) AND ISSUE STUDIES, Commission for Environmental Cooperation: Montreal, pp.5-41.

social and geographic factors unrelated to NAFTA's rules and institutions as they affected trade. Transborder investment flows were considered separately, before formulating conclusions. One of the conclusions drawn from the study is that "the differential pace and degree of reduction and elimination of tariffs and other trade barriers under NAFTA can have major impacts on production and consumption substitution in ways that are not optimal for economic efficiency or environmental enhancement…".

With regards to maize genetic resources diversity, Alejandro Nadal concludes in a further study that 2 million small farmers in Mexico, the center of diversity for corn, are being pushed out of corn landraces production by the NAFTA provisions.[20]

For Example Kenya: An NGO study in Kenya[21], where liberalization has been implemented over the past decade as part of its structural adjustment program, found that the prices of exported crops, especially tea, coffee and horticultural goods, have risen but the terms of trade (output prices relative to input prices) for the agriculture sector as a whole fell from 93.4:100 in1991 to 87.6 in 1995. As in Mexico, devaluation contributed to this trend, increasing the costs of imported inputs as well as increasing the value for exports. Nonetheless, Kenya's rate of economic growth fell from 4.9% per year in 1995 to 2.9% in 1998, while that of the agricultural economy fell from 4.4% to 2.3%. For maize, the major staple food crop of Kenya, farmers earned, on average, just 57% of the cost of their production: the price of imported fertilizers relative to the price of maize rose from 1.95 to 3.00 through the 1990s. As a result, Kenya has become a net maize importer. With the privatization of Kenya's National Cereals and Produce Board, government reserves have been greatly reduced, leaving Kenya's imported food security a function of commercial interests.

For Example Indonesia: In projecting the impacts of agricultural trade liberalization on Indonesia's rural sector, the Center for Agro Socioeconomic Research of Bogor found that, in the aggregate, rice production will not change greatly due to a strong comparative advantage in lowland farming in Java, but the impact on soybeans will be substantial. These researchers expect domestic soybean prices to decrease 40% over four years and, because world prices are relatively unstable, risks to producers will increase significantly. Liberalization of input markets will increase costs to farmers, with disproportionate impacts on smaller farms depending upon the agro-climatic and socio-economic circumstances.Technological improvements can compensate, to some degree, but at the farm level, the study concludes, "impacts of market and trade liberalization are strongly negative on agricultural income." [22]

The WTO Committee on Agriculture has spent well over a year coordinating a process of "Analysis and Information Exchange" concerning the implementation of the Uruguay Round Agreement on Agriculture in preparation for the next negotiations towards "continuation of the reform process." Findings indicate that tariff levels remain high for many products of export interest to the South, and that tariff escalation – by which tariffs on processed products are higher than those on the corresponding primary commodity – continues to be an obstacle for developing

[20] Nadal, Alejandro (2000): "Corn and NAFTA: An Unhappy Alliance", in The Seedling, June 2000 (http://www.grain.org)

[21] Barasa, Thomas (1998), "The Impact of Trade Liberalization on Agriculture and Food Security in Kenya," International Workshop on WTO Agreement on Agriculture, Research and Information System for the Non-Aligned and Other Developing Countries, Institute for Agriculture and Trade Policy and ActionAid: New Delhi.

[22] Erwidodo (March 1998), „The Impacts of Trade Liberalization on Food Production and Farm Income: A Multilevel Modelling Approach," Australia Centre for International Agricultural Research Indonesia Research Project, Working Paper No. 98.08: Adelaide, Australia.

country exporters.[23] Quotas and safeguards appear to be insufficient remedies, nor are the required reductions in domestic support in the North sufficient to open markets significantly. The transmission of price instability in the world market to domestic markets has increased the burden of developing country governments, while food aid is shrinking relative to commercial imports – adding to their costs.[24]

Nonetheless, there is a shortage of data with which to evaluate the actual impacts of trade liberalization on farm income and rural welfare, particularly in the developing world. The South Centre, an intergovernmental agency in Geneva that serves as a think-tank for its developing country members, has prepared a 27-point "Checklist to Assist the Preparation of Country Experiences on the Impacts of the WTO Agreement on Agriculture."[25] (See appendix.)

As the WTO AoA talks gather momentum, this type of analysis at the country level will grow in importance. "The argument is not that trade is responsible for the discouraging development situation," commented Cuba, the Dominican Republic, Honduras, Indonesia and Pakistan in a joint statement in March 1999, at symposia sponsored by the WTO regarding trade, environment and development, "Rather, the contention is that this situation exists in the context of increasing liberalization of trade. And, hence, there is an obvious need to critically examine the role of the global trade regime in development."[26]

The role of agribusiness in the Uruguay Round Agreement on Agriculture (AoA)

One of the goals of the Uruguay Round was to bring U.S. and European agricultural policies more fully under the disciplines of the General Agreement on Tariffs and Trade (GATT). Although the original GATT agreement struck in 1947 had excellent agricultural trade rules, both the U.S. and European approaches to agriculture policy were largely exempted from the GATT rules by the mid-1960s.[27]

For example, Article VI of the original GATT agreement defines and condemns dumping. Article XI in the original GATT text permits governments to adopt domestic supply management, even allowing restrictions on imports that might favor domestic producers, in order to control production levels and avoid the temptation to export surpluses and to relieve "critical shortages of foodstuffs."[28]

For the United States, both the Uruguay Round and the NAFTA negotiations were designed to make changes in the external

[23] Lindland, Jostein (September 1997), "The Impact of the Uruguay Round on Tariff Escalation in Agricultural Products," United Nations Food and Agriculture Program ESCP/No.3: Rome.

[24] Konandreas, Panos, Jim Greenfield and Ramesh Sharma (23-24 November 1998), "The Continuation of the Reform Process in Agriculture: Developing Countries' Perspectives," United Nations Food and Agriculture Organization, paper presented to the seminar on "Latin America and the Caribbean in Face of the Furthering Process of Multilateral Agricultural Reforms": Santiago.

[25] South Centre (1998), "Checklist to Assist the Preparation of Country Experiences on the Impacts of the WT O Agreement on Agriculture" in " Washington DC Meeting on the WTO Agreement on Agriculture: Food Security, Farmers and a Fair Place for the South," Institute for Agriculture and Trade Policy, Foundation Charles Leopold Mayer pour le Progres de l'Homme, Solagral: Minneapolis.

[26] ICTSD (March 1999), "WTO Holds First-Ever High-Level Meetings on Sustainable Development but Environment and Development Agendas Still Don't Mesh," BRIDGES Vol.3 No.2, International Centre for Trade and Sustainable Development: Geneva.

[27] Porter, Jan and Douglas Bowers (August 1989), "A Short History of U.S. Agricultural Trade Negotiations," Economic Research Service, United States Department of Agriculture: Washington DC; Raghavan, Charkravarthi (1990), "RECOLONIZATION: GATT, THE URUGUAY ROUND AND THE THIRD WORLD," Zed Books and Third World Network: Penang.

[28] Article 11.2, General Agreement on Tariffs and Trade, 1969.

and internal agricultural policies of other countries and of the United States itself. The U.S. negotiating position was largely determined by the purchasing departments of major corporations and the chief negotiators were drawn from their ranks. For example, the Reagan Administration appointed a long-time executive of the Cargill company to head the U.S. delegation in the AoA talks.[29] The European Union, in the middle of the negotiations, abandoned farm price support policies that had been in effect since the beginning of the European Community in favor of U.S.-style government subsidies.

Thus, it should not be surprising that the Uruguay Round results meet the needs of agribusiness corporations to a great extent, and do not support sustainable agriculture or rural development in either the North or the South. For example, the enormous farm bail-outs provided by the U.S. taxpayers in 1999-2000 – some $18 billion worth – accomplished little more than enabling some farmers to keep the bankers at bay for another season. Many farms went bankrupt anyway, while the grain exporting companies like Cargill enjoyed the lowest commodity prices in fifty years.

While such bailouts violate the spirit of trade liberalization, there is no way Cargill and its fellow exporters would give them up. Extensive bilateral negotiations between the EU and the U.S. during the Uruguay Round culminated in a deal often called the "Blair House Agreement" that was then effectively imposed on the rest of the GATT parties. The Blair House Agreement tied reductions in both domestic support and export subsidies to baseline levels of 1986, when stocks and subsidies were at their peak, thus giving both the EU and the US ample flexibility in meeting their obligations.[30] It also defined a "peace clause" (Article 13) forbidding for nine years – that is, until 2003 – any country's taking action against another country's support programs that fit into the exempt categories known as the "blue" and "green" boxes, and demanding "due restraint" regarding actions against export subsidies.

One perverse result of these provisions is that the U.S. and Europe are able to "legally" increase their export dumping through both export subsidies and other mechanisms. While the AoA formally allows 25 out of 132 WTO members to subsidize exports, just 3 of them are responsible for 93% of all subsidized wheat exports and just 2 of them are responsible for subsidizing 94% of butter and 80% of beef exports.[31] Many agree these export subsidies should be disallowed.[32]

However, a lack of agreement over what is and is not an export subsidy persists. Governments have endless ways to re-package and re-name subsidies and manipulate currencies in ways that dramatically alter domestic prices relative to the world price. And in the United States, the lack of anti-trust enforcement has enabled a few monopolistic companies to control the market, forcing farmers to sell their production at prices far below their cost of production. Some critics argue that these forms of export dumping ought also to be disallowed.[33]

[29] Resume of Daniel Amstutz, file copy.

[30] Jenkins, Robin (November 1993), "Blair House: A Look at the Blair House Agreement and its Consequences for Small Farmers North and South," European Ecumenical for Development: Belgium.

[31] Konandreas, Panos, Jim Greenfield and Ramesh Sharma (23-24 November 1998), „The Continuation of the Reform Process in Agriculture: Developing Countries' Perspectives," Food and Agriculture Organization, paper presented to the seminar on „Latin America and the Caribbean in Face of the Furthering Process of Multilateral Agricultural Reforms": Santiago.

[32] Letter from Sicco Mansholt to Arthur Dunkel (1990), published in "Gentle GATT: GATT Briefing on the GATT, Uruguay Round, and Agriculture," European NGO Network on Agriculture and Development (RONGEAD), No. 1: Lyon.

[33] Ritchie, Mark (November 1999), "Eliminating Export Subsidies: One Way Forward," Institute for Agriculture and Trade Policy, Minneapolis.

Least-developed countries and net-food importing countries sought market access and better prices for their exports[34] and achieved several concessions, although these appear to be insufficient to overcome immediately negative impacts resulting from the AoA.[35] The WTO Secretariat found that developing countries' share of world agriculture exports had not changed from 1990 to 1996.[36] Few developing countries can afford to increase their support for farmers, whether through investment or input subsidies or any other government payments. There are numerous other loopholes disabling the special and differential treatment (S&D) provisions as drafted in the AoA, which provides inadequate provisions for technical assistance and no financing to help build their production and export capacity.[37]

Correcting the Uruguay Round: more research needs for the way forward

Given the failure of the WTO to launch a new comprehensive round after the Seattle Ministerial Meeting, the "built-in" agenda agreed to in 1994 now represents the core of the negotiating process underway – and the AoA is at the core of the built-in agenda. In order to progress beyond the current stalemate, a balance will need to be found on three key disagreements: a solution to export subsidies and, more importantly, export dumping; operationalizing special and differential treatment for developing countries; and non-trade concerns including ecological considerations and food security.

Both the Cairns Group (Australia, Argentina, Brazil, Canada, Chile, Colombia, Fiji, Indonesia, Malaysia, New Zealand, Paraguay the Philippines, South Africa and Thailand) and the United States are calling for the elimination of the "blue box" exempting the European Union's domestic support programs, and export subsidies, which would primarily affect the EU – given the nature of the U.S. market. The EU in turn has shown an interest in cracking down on the US' relatively extensive use of the "green box" and its export credit programs.[38] Neither the Cairns Group nor the EU, however, has broached U.S. dumping of agricultural commodities as an anti-competitive practice.

Phasing out dumping: medothodological research needs

Instead of continued arguments over what is or is not an export subsidy, negotiators could simply agree to phase-out and then eliminate export dumping. One of the many benefits of directly reducing dumping is that it could bring immediate improvements for many producers in the Third World who have been devastated by export dumping from the United States, Europe, Canada, and others. At some agreed upon date in the future all food exports could be priced at or above the

[34] Raghavan, Charkravarthi (1990), „RECOLONIZATION: GATT, THE URUGUAY ROUND AND THE THIRD WORLD," Zed Books and Third World Network: Penang.

[35] Konandreas, P., R. Sharma and J. Greenfield (21-24 January 1997), "Overview of the Impact of the Uruguay Round on World Agricultural Markets and SADC Region," in THE URUGUAY ROUND AND AGRICULTURE IN SOUTHERN AFRICA: WORKSHOP PROCEEDINGS, Food and Agriculture Organization: Rome.

[36] WTO (19 June 1998), "Agricultural Trade Performance by Developing Countries 1990-96," Background Paper by the Secretariat, AIE/S10, World Trade Organization: Geneva.

[37] IATP (October 1998), " Washington DC Meeting on the WTO Agreement on Agriculture: Food Security, Farmers and a Fair Place for the South," Institute for Agriculture and Trade Policy, Foundation Charles Leopold Mayer pour le Progres de l'Homme, Solagral: Minneapolis pp.10-15.

[38] (9 April 1999), „EU to Push for Examination of Green Box in WTO Agriculture Talks," INSIDE U.S. TRADE: Washington.

cost of production. This would narrow the debate into two areas. First, how to determine the full cost of production by which dumping would be judged. Second, what timeline to use for phasing out dumping. A five-year phase out would be a reasonable approach, but the precise timing hardly matters. Some countries and some crops might take longer. Some poor countries might get additional flexibility. Whatever the timeline, by the end all countries will stop dumping.

The formula for calculating the full cost of production would consist of two major components – the expenses paid by the producers themselves and those paid by the taxpayers. The average cost of production paid by producers is determined each year in all major exporting countries by the national government. In the United States, this is done by the U.S. Department of Agriculture. The other part of the cost of production, the cash value of the expenses paid by taxpayers, has been calculated for most crops for each of the major food exporting countries by the Organization for Economic Cooperation and Development (OECD). OECD uses a formula, often called the Producer Subsidy Equivalent (PSE), to determine the cash value of various government programs. This PSE formula is surprisingly comprehensive and accurate, given the elusive nature of most government farm programs.

This full cost of production for each crop would be determined by adding up all of the expenses paid by farmers together with those paid by the taxpayers and then divided by the total production in order to determine the average cost of production on a per pound, bushel, or tonnage basis. If this cost of production was higher than the average export price, this would be considered dumping and subject to reduction over the agreed period of time.

If a country refuses to commit to reducing dumping or, more likely, there is backsliding on commitments, the response should be swift, simple and strictly WTO-legal: importing countries would simply impose countervailing duties, as the U.S. government now does on industrial imports dumped into North America. This anti-dumping tariff would be large enough to bring import prices of dumped goods up to proper levels. Producers worldwide could expect to cover their costs in the global market.

Net food importing countries would of course require significant transitional assistance to redevelop their capacity to produce. A global fund for development assistance for developing countries could be generated by a tax on speculation in the global commodities markets. While such a proposal would be controversial and years in coming, the Marrakesh Decision should be triggered immediately and retroactively. Other provisions for special and differential treatment, in the AoA as well as in other Uruguay Round Agreements – particularly the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) – must also be operationalized immediately.

Multifunctional agriculture: a way to food security and environmental sustainability?

A ban on dumping would also be responsive to Cairns Group and Southern complaints about "multifunctional agriculture"[39] – that is, that subsidies considered as payment for the ecological services

[39] European Union (24 September 1998), „Contribution of the European Community on the Multifunctional Character of Agriculture," World Trade Organization AIE/40: Geneva; Tanikon Seminar (June 1998), „Summary Report on Multifunctional and Sustainable Agriculture (with reference to the next WTO Round)," Swiss Federal Office of Agriculture: Bern; Rome Declaration (1996), World Food Summit Plan of Action: Rome.

provided by sustainable agricultural practices spillover in any case as export subsidies. As Australia put it, "the terms multifunctionality and non-trade concerns are being used as post-facto justification for continuing high levels of trade distorting protection of agriculture."[40] And yet, there is a tremendous need to convert the North's industrial agriculture system to one that is environmentally benign and sustainable.[41] Norway argued, in a paper submitted to the WTO[42], "[Multifunctionality] may also be characterized as positive externalities or public goods related to agricultural production." Japan[43] and the Republic of Korea[44] have noted their support for multifunctional agriculture in papers submitted to the WTO Committee on Trade and Environment, emphasizing the ecological functions of terraced rice production and food security respectively.

If the cost of production, by which dumping is calculated, were to include the costs of converting to sustainable production systems, world prices would indeed rise considerably – generating no doubt a strong comparative advantage in world markets for products from the South.

[40]Austalia (4 September 1998), „Non-Trade Concerns," Paper Submitted by Australia, World Trade Organization AIE/36: Geneva.

[41]Bruges Group (October 1997), "Agriculture and Rural Development: A European Challenge – Debates About Agenda 2000," Bruges Group Secretariat: Saint Gely, France.

[42]Norway (2 June 1998), "Non-Trade Concerns in a Multifunctional Agriculture: Implications for Agricultural Policy and the Multilateral Trading System," Paper Submitted by Norway, World Trade Organization AIE/22: Geneva.

[43]Japan (15 February 1999), "Environmental Effects of Trade Liberalization on Agriculture," Submission by Japan, World Trade Organization WT/CTE/W107: Geneva.

[44]Republic of Korea (22 September 1998), "Non-Trade Concerns in Net Food-Importing Countries," Paper from the Republic of Korea, World Trade Organization AIE/39: Geneva.

For a UN Convention on sustainable food security

In the long run, there is a need to negotiate a multilateral agreement on food security and the sustainable production and distribution of agricultural goods and services within the United Nations system, so that non-trade concerns will not always be trumped by the concerns of traders.

Multilateral collaboration on the development of a viable global food security should proceed under auspices of the United Nations system, in collaboration with civil society. Nations can agree to develop a framework for negotiating a "Sustainable Food Security Convention" or some such instrument with the purpose of elevating food security to the highest level of priority within international law.

Such a convention could establish a global network of local, national and regional reserves for staple foods, subject to independent audits, and national food security plans to enhance farmers' capacity to produce nutritious and safe foods – exempting these plans from WTO rules and disciplines when said rules undermine them. The convention could mandate international commodity agreements among importing and exporting countries both for concessional food transfers and to supplement domestic production to meet national demand for staple foods, without resort to dumping. It could also guarantee that access to the fundamental inputs of agriculture – land, water and seeds – be ensured as the *a priori* human right of farming communities.[45]

[45]The U.N. Sub-Commission on the Promotion and Protection of Minority Rights passed a resolution August 17, 2000, on "Intellectual Property Rights and Human Rights" (E/CN.4/Sub.2/2000/L.20)., suggesting the TRIPS Agreement may conflict with fundamental human rights and requesting numerous intergovernmental agencies, including the WTO and the UN Office of the High Commissioner for Human Rights, as well as UN Secretary-General Kofi Annan to submit written comments evaluating this interpretation.

Financial and technical mechanisms could be negotiated as part of the convention to implement its provisions and to aid governments in disputes with other entities such as the WTO or national patent offices that might arise over food and agriculture policy. Financing could be achieved through member contributions, a tax on agricultural commodity trade, or the proposed "Tobin tax" on international financial transactions.[46]

Conclusion

In short, there is a need for an internationally coordinated approach to food security, aimed at increasing stability in the food supply by reducing volatility in agricultural markets while making both production and distribution systems sustainable over time. Such an approach requires that food security be planned and implemented primarily at the local and national levels with support for diversified peasant and family farm systems. These non-trade concerns can be complemented by trade and trade policy, but they must not be displaced by trade liberalization.

Idealistic, perhaps. Politically ambitious, no doubt. Sound, maybe.

There is a dire need for research to evaluate the several analyses expressed in this document. This research agenda would include not only empirical studies of the disaggregated impacts of trade liberalization to date, including on the distribution of costs and profits throughout each commodity chain, but also an examination of:

- The effects of various anti-monopoly regimes on agriculture prices;
- How the calculation of production costs and dumping could be accurately and fairly undertaken;
- The potential for a ban on export subsidies and dumping to stabilize domestic markets worldwide and open world markets for the South;
- The historical efficacy of government programs for land set-asides, import and export controls, supply management, and price floors in the North;
- How grain reserves and commodity agreements could be structured to help stabilize both global food supplies and prices;
- The potential for subsidies for multifunctional agriculture to enable a transition to rural sustainability in both the South and the North;
- Alternative mechanisms for confessional food aid and emergency relief;
- The possible effects of a global tax on agricultural commodity trade and possible mechanisms for distributing the revenues;
- The effects of the TRIPS Agreement on food security, balance of payments, seed distribution, natural resources and technology transfer; and
- The terms of reference for a UN Convention on Sustainable Food Security.

International agricultural research organisations could contribute substantially to many of these research needs.

[46] Details on this proposal for a "Sustainable Food Security Convention" are available in the "Plan of Action to Achieve Universal Food Security," drafted for the 1996 World Food Summit and revised 20 September 1999 by an international consortium of non-governmental organizations. Copies can be obtained on the Internet at http://www.iatp.org/foodsec/library/admin/uploadedfiles/Proposal_for_the_Negotiation_of_a_Food_Securit.htm or by from Karen Lehman, Institute for Agriculture and Trade Policy, fax: 612-870-4846 or email klehman@iatp.org

APPENDIX ONE:

GATT ARTICLE VI - Anti dumping and Countervailing Duties

1. The contracting parties recognize that dumping by which products of one country are introduced into the commerce of another country at less than the normal value of the products, is to be condemned if it causes or threatens material injury to an established Industry in the territory of a contracting party or materially retards the establishment of a domestic industry. For purposes of this Article, a product is to be considered as being introduced into the commerce of an importing country at less than its normal value if the piece of the product exported from

(a) is less than the comparable price, in the ordinary course of trade, for the like product when destined for consumption in the exporting country; or,
(b) in the absence of such domestic price, is less than either
(i) the highest comparable price for the like product for export of any third country in the ordinary course of trade, or
(ii) the cost of production of the product in the country of origin plus a reasonable addiction for selling cost and profit.

Due difference shall be made in each case for differences in conditions and terms of sale, for differences in taxation, and for other differences affecting price comparability.

2. In order to offset or prevent dumping, a contracting party may levy on any dumped product an anti-dumping duty not greater in amount than the margin of dumping in respect of such product. For the purposes of this Article, the margin of dumping is the price difference determined in accordance with the provisions of paragraph 1.

General Agreement on Tariffs and Trade, 1969.

APPENDIX TWO:
ELEMENTS OF THE "CHECKLIST TO ASSIST THE PREPARATION OF COUNTRY EXPERIENCES ON THE IMPACTS OF THE WTO AGREEMENT ON AGRICULTURE" PREPARED BY THE SOUTH CENTRE, GENEVA [EXCERPTED]

Market Access

1. What are the major agricultural exports? Identify new exports, if any, in the post UR period.
2. Which are the major markets for major agricultural exports? Identify new markets, if any.
3. What is the share of agricultural exports in the total country exports? Identify any increase or decrease, if any, in the post UR period.
4. What are the major agricultural exports that benefit from any preferential market access in the developed markets? Identify any increase or decrease in the volume of such exports.
5. What are the major agricultural exports that are subject to tariff rate quotas? What has been the rates of utilization of these tariff rate quotas?

Domestic Support

1. Has it been easy to calculate the Aggregate Measure of Support (AMS)…in your case?
2. What has been the impact of inflation on the calculation of domestic support?
3. Have the domestic support measures exempt from the reduction commitments (green box measures) been sufficient to allow the implementation of national polices for increasing agricultural productivity and improve food security? If not, identify the measures that should also be included in the green box.
4. What domestic support policies in the agricultural sector have traditionally been used in the country? Are these included in the green box measures?

Food Security

1. What are the major food imports? What are the major sources of these imports?
2. What is the share of food imports in total imports? Identify any increase or decrease in the share in the post UR period.
3. What is the value of food imports as a percentage of total export earnings? Identify any increase or decrease.
4. What is the share of food aid in the total food imports? Identify any increase or decrease.
5. What is the share of domestic food production in the total domestic food requirements? Identify any increase or decrease.
6. What has been the trend of staple food prices in the domestic market?

General

1. What is the total area under cultivation? Identify any increase or decrease in the post UR period.
2. What are the areas under cultivation of food crops and export crops respectively?
3. What is the share of the total labor force employed in the agricultural sector?
4. What is the rate of rural unemployment? Has it increased in the post UR period?
5. What is the percentage of population living in rural areas? Identify any increase or decrease.
6. What is the size of the average farm? Has it increased? It will also be helpful to include the experience of small/subsistence farmers.

Excerpted from the Annex of the Proceedings of the Washington DC Meeting on the WTO Agreement on Agriculture: Food Security, Farmers and a Fair Place for the South, organized by the Institute for Agriculture and Trade Policy, Fondation Charles Leopold Mayer pour le Progres de *L'Homme and Solagral, 30 September – 4 October, 1998.*

APPENDIX THREE: ELEMENTS FROM ANNEX 2 OF THE URUGUAY ROUND AGREEMENT ON AGRICULTURE CONCERNING "DOMESTIC SUPPORT: THE BASIS FOR EXEMPTION FROM THE REDUCTION COMMITMENTS" [EXCERPTED]

1. Domestic support measures for which exemption from the reduction commitments is claimed shall meet the fundamental requirement that they have no, or at most minimal, trade-distorting effects or effects on production. Accordingly, all measures for which exemption is claimed shall conform to the following basic criteria: (a) the support in question shall be provided through a publicly-funded government programme (including government revenue forgone) not involving transfers from consumers; and (b) the support in question shall not have the effect of providing price support to producers; plus policy-specific criteria and conditions set out below.

2. Government service programmes…which include but are not restricted to the following list, shall meet the general criteria in paragraph 1 above and policy-specific conditions…below:
   (a) research…
   (b) pest and disease control…
   (c) training services…
   (d) extension and advisory services…
   (e) inspection services…
   (f) marketing and promotion services…
   (g) infrastructural services…

3. Public stockholding…shall correspond to predetermined targets related solely to food security. The process of stock accumulation and disposal shall be financially transparent. Food purchases shall be made at current market prices and sales from food security stocks shall be made at no less than the current domestic market price for the product and quality in question.

4. Domestic food aid…shall be in the form of direct provision of food…or the provision of means to allow eligible recipients to buy food either at market or at subsidized prices. Food purchases by the government shall be made at current market prices and the financing and administration of the aid shall be transparent.

5. Direct payments to producers…shall meet the basic criteria set out in paragraph 1 above, plus specific criteria applying to individual types of direct payment as set out in paragraphs 6 through 13 below…

6. Decoupled income support…not related to, or based on, the type or volume of production…[or] on the prices, domestic or international, applying to any production undertaken in any year after the base period… No production shall be required in order to receive such payments.

7. Government financial participation in income insurance and income safety-net programmes…

8. Payments (made either directly or by way of government financial participation in crops insurance schemes) for relief from natural disasters…

9-11. Structural adjustment assistance provided through producer retirement programmes…resource retirement programmes…[or] investment aids…

12-13. Payments under environmental programmes…[or] regional assistance programmes…

Politicising Research: Trade and Agriculture and an Enabling Institutional and Policy Framework

By Aileen Kwa, Focus on the Global South

Research organisations must be willing to confront the political

Today, too much emphasis is being placed on how to increase food supply at the global level. Research institutions are busying themselves with racing towards yet another revolution of high yielding varieties, this time the Gene Revolution. Many institutions are unfortunately short sighted, and this is not accidental. Governments suffer from the same myopia. They, like the research institutions are being unduly influenced by private sector interests.

We have more than sufficient food at the global level. The key issue for people who are food insecure and poor is not the technical know-how of how to increase yields, but is in fact about dealing with politics.

i) The politics of the control over resources needed for food production
ii) The politics of food production
iii) The politics of food trade.

Ultimately, it is politics, power, greed and profits which are the key obstacles blocking access to food for the poorest, rather than the issue of needing more knowledge about how to produce food. The research that is needed, is research into issues over the control of resources, the issue of who produces food, for whom and at what costs, and research into how the status quo can be changed. There are many cases all over the world where innovative and successful strategies have been tried with success, where communities have empowered themselves and fought for control over resources and entitlements. These examples can be transplanted and adapted to local conditions. There are also the many methods of sustainable and ecologically sound agricultural practices that have been successful. Knowledge of these methods can be actively disseminated to other communities, countries and regions.

However, this type of research is political (rather an apolitical, as research is always made out to be). To do this type of research, researchers and institutions must know that what they engage in is contentious and the knowledge they are creating will be a fight over power.

What type of research is actively promoted? What type of research is silenced? This leads also to the question of what type of knowledge is funded as opposed to what type of research does not get funds. Are research institutions prepared to stick their necks out, take risks in stepping in the direction that may be in opposition to the interests of the multinational corporations and may not even get government approval? These are fundamental questions that the GFAR and CGAIR must address. Activist research is no less than a hero's journey, and institutions sincerely wanting to help the poor, must be ready to walk the rough and narrow path.

Just as an example of what I am talking about – I found some glaring contradictions in one of the GFAR documents entitled 'Agriculture in the early 21st Century'. On the first page, the paper first states that '… the important contributions of the CGIAR Centers to the development of the green revolution is one of the main explanations of this extraordinary success in agricultural production'.

The Green Revolution was the harbinger of high input agriculture in many developing countries. Yet later on in the paper, the GFAR states that high input agriculture has not been proven to be energy efficient. The papers observes that grain crops grown with high and low inputs show that on the average, those with low inputs are almost 5 times more energy efficient than those grown with high inputs. In the Philippines, moving from the traditional to the modern system of rice production implied an increase of 3000 per cent of energy inputs to a 116 per cent increase in yield.

Activist research would ensure that these types of findings are uncovered, and that the research results are then fed back and allowed to influence the claims and assertions on the green revolution. This is political. What type of knowledge is validated and what is ignored or sidelined is contentious because of vested interests.

Development-centered Vs a profit-centered vision on agriculture and trade

In a recent study[1] by FAO of 14 developing countries' experience of agricultural trade liberalisation, the FAO concluded the following:

i) Few studies showed improvements in agricultural exports in the post-UR period. There was little change in the volume exported or in diversification of products.

ii) On the other hand, food imports were reported to have risen rapidly in most countries. The balance of payments situation for developing countries has therefore been aggravated by higher import bills.

iii) There was a trend towards the concentration of farms in a wide-cross section of countries. The effect was that while productivity increased, 'the process also marginalised small producers and added to unemployment and poverty'.

iv) The import surges had detrimental effects on the production capacity of staple products in developing countries. 'More often than not, these (imports) were the very commodities that were vital for the economy of these countries – in terms of food supply, employment, economic growth and poverty reduction'.

[1] FAO 1999 'Synthesis of country case studies', FAO Symposium on Agriculture, Trade and Food Security, Geneva 23-24 September.

What has gone wrong?

Research must also be led by a vision. And the two should actively interact – the vision will feed the research and viz versa. The present problems trade is exacerbating and creating for developing countries is due to a misguided, profit-centered rather than development-centered vision of agriculture and trade.

Today, it is the policy environment that sets the direction and vision about food security and agricultural trade. The policy direction is predominantly crafted by the World Bank, the IMF and the WTO. The key players in these institutions are of course the OECD governments, particularly the US and EU governments. Their agenda in turn is largely reflected in most conventional agricultural research.

Through policies, the financial and trade institutions and key governments have defined food security as the availability of food at the global level. Trade has been heralded as *the* instrument for improving food security for developing countries. Through the market, developing countries can find their comparative advantage. Trade is therefore the vehicle to efficiency.

Developing countries are encouraged to specialise and export, rather than ensure their own self-sufficiency. Take for example, a revealing statement made by the US at the 1996 World Food Summit. Washington's position was that 'Pursuit of higher levels of food self-sufficiency has not been limited to developing countries, but they are less able to bear the costs of foregone economic efficiency, and thus, such policies are relatively more damaging to their economies and to food security'.

The FAO throws another perspective on this issue in a recent paper[2] on agricultural development and food security. The paper makes the observation that for a large number of developing countries, the agricultural sector remains largely underdeveloped in production both for the domestic market and for exports. At the same time, in most of these countries, the agricultural sector lies at the center of their economies. Agriculture, it says,

- Accounts for a large share of Gross Domestic Product (GDP),
- Employs a large proportion of the labor force,
- Represents a major source of foreign exchange,
- Supplies the bulk of basic food and provides subsistence and income for large rural populations.

It concludes that 'significant progress in promoting economic growth, reducing poverty and enhancing food security cannot be achieved in most of these countries without developing more fully the potential capacity of the agricultural sector and its contribution to overall economic development' (our emphasis, FAO, 1999[2]).

Therefore, a development-centered vision of agriculture recognises that agriculture is not just another sector of the economy.

Briefly, the following should be crucial elements informing a development-centered vision of agriculture and trade:

1) Food security is the accessibility of food for even the poorest. For the majority of poor in developing countries, production and accessibility are two sides of the same coin. Food is only accessible if people have the entitlements or resources to produce it. This is because agriculture is main means of livelihood. If food production is taken out of their hands, the rural majority are unlikely to

[2] FAO 1999 'Issues at stake relating to agricultural development, trade and food security', FAO Symposium on Agriculture, Trade and Food Security: Issues and Options in the Forthcoming WTO Negotiations From the Perspective of Developing Countries'. 23-24 September.

have access to other forms of employment that will allow them to purchase food on the market.

2) For developing countries to address the issue of food security for the poor, communities, countries and regions should strife to be as food self-sufficient as possible. Trade should be a means to attain food that cannot be grown locally.

3) Countries should therefore attempt to diversify their production to meet primarily national needs. That is, priority should be placed not on export crops, but on locally consumed agricultural products.

4) Food production should be in the hands of many, rather than a few transnational corporations in order to ensure accessibility. Similarly, knowledge of food production must be available to all. The patent system is therefore anti-poor and anti-development since it does not encourage the natural diffusion of knowledge.

5) Ecologically sound methods of agriculture must be promoted, rather than industrialised agriculture. High input agriculture penalises the poor and has been environmentally destructive. The system rewards the corporations that produce the chemical inputs – increasingly also the same corporations producing the bulk of the food.

Research directions

Some suggestions for research institutions include the following:

1) There should be thorough research on the exact effects of trade liberalisation in agriculture in all countries, particularly as a result of IMF, World Bank and WTO policies. A comprehensive study should cover the impact of liberalisation on food security, domestic production capacity, rural employment and poverty in developing countries.

2) Unlike the claims of GFAR and CGAIR, low prices of food have not led to decreased poverty for the majority 1.3 billion living under US$1 a day, or 2.8 billion living under US$2 a day. Yes, low food prices have helped the urban poor. However, this is not where the majority of the poor people are, or where the most acute poverty is usually found.

Low food prices instead are destroying the production base in many developing countries. For example, the cost of production of corn, in Mindanao, Philippines, is twice the depressed world market price of corn. Small farmers are going out of business as a result.

Research must be carried out on the effects of depressed world prices on the livelihoods of small farmers and on poverty in developing countries.

3) The character of agricultural production has been radically transformed in the last 2-3 decades, with transnational food corporations monopolising agricultural production. This is the case in the developed countries, and this structural change is also increasingly taking root in developing countries. Not only are the food corporations expanding and integrating horizontally, but also they are integrating vertically, so that the entire production process, from gene to supermarket shelf can be controlled by a single company.

The top 3 seed companies account for 20 per cent of global seed trade. The top 10 agrochemical companies control 91 per cent of the agrochemical market. Between 85-90 per cent of world agro-exports are controlled by 6 of the largest transnational corporations (TNCs). 60

per cent of the global trade in grain products is dominated by a few TNCs.[3]

In such an environment where huge companies dominate at every level of production, the prices or products are clearly not transparent. Prices at the farm gate are pitifully low because the corporations purchasing the products work as a cartel. They argue that the low farmgate prices are due to depressed commodity prices, however, they are the ones setting these prices.

We know only the tip of the iceberg of how food corporations control the markets. More research is definitely needed:

i) Which companies are operating where and what do they control? How much of which markets do they control?
ii) How and to what extent are prices being distorted by the foodcorporations?
iii) What is the impact of the food corporations on market development, price and availability of food in the world market?
iv) What is the effect of diminishing competition on developing countries' agricultural economies and their farmers?
v) Research on the possibility of implementing an effective multilateral competition policy in agricultural trade that can protect the small players.

Research institutions can also look into the positive alternatives and strategies communities have created in response to the concentration of agriculture.

4) Dumping (the sale of goods in world markets at less than the cost of production) is common-place today and poses a huge problem for developing countries. However, we do not even know the extent of dumping. One key problem is that dumping is detected by comparing prices in the exporting country and in the country where the product is imported. A serious problem arises when even in the exporting country the product is sold at below cost. (E.g., US based grain companies pay US farmers less than the cost of production for their crops, which is then sold on the international market at below the US domestic price, competing unfairly with other countries' exports).

All forms of dumping must be prohibited because of the negative effects on developing countries' producers. Research institutions can find out the extent to which dumping takes place and help with continually monitoring the incidence of dumping.

5) The total of OECD subsidies (measured by the OECD Total Support Estimate) amounted to 335 billion in 1998. This is a significant increase from the 292 billion in 1986-88 (the base period used in the WTO's Agreement on Agriculture). Overall support levels provided by the OECD countries have therefore increased despite reductions in the supposedly trade-distorting support category.

It is a well-known fact that even supposedly non-trade distorting subsidies do affect production. There must be more research on the extent to which the various forms of subsidies distort prices and production levels, and the effects of these distortions on small farmers, food security and domestic production capacity in developing countries.

6) Emerging research is revealing that liberalisation of developing countries' economies does not necessarily bring about growth. Rather, it is how competi-

[3] Varma, S 1999 'Actionaid's Response to the MAFF Consultation Paper: World Trade Organisation Negotiations on Agriculture', November.

tive a country is, instead of how open it is. Some studies by UNCTAD for example, have shown that liberalisation in economies that are not competitive have brought about deindustrialisation rather than growth.

Research institutions could therefore look at empirical studies on the conditions and factors which bring about growth or deindustrialisation in the various different types of economies. It would be useful for developing country governments and for the financial and trade institutions in setting policies if the links between growth, level of openness and competitiveness were clearer.

7) Finally, we need more research in ecologically friendly agricultural methods. Indeed, attempts to increase yields are most efficient if ecologically sound methods are used. For example, sustainable agricultural methods, which emphasis the use of organic fertilizers and the principle of having diverse crops are likely to benefit especially the poor.

The priority of research must be to put domestic needs first, particularly in terms of increasing the production capacity for staple foods for the local population, rather than pursuing exports as an engine for growth. This is not to say that exports should be halted, but instead, in the interest of food security and accessibility, it should be a secondary priority.

Creating an enabling policy environment

The most important feature of an enabling policy environment is policy flexibility for developing countries in the area of trade.

Today, developing country governments are very limited – by IMF and World Bank conditionalities, and also by the WTO. Import barriers in developed countries have risen, rather than decreased, especially on the key agricultural products[4]. While developing countries are made to open up, unfortunately, overall OECD subsidy levels have increased rather than decreased.

While the WTO's Agreement on Agriculture has done little to address the distortions of agricultural trade policies in developed countries, it has been a major factor in influencing national policies and opening up the markets of developing countries.

Given the following factors:
- the vagaries of the international trading system,
- the unpredictability of the world's financial markets (the not too infrequent occurrences of financial crises to even robust economies),
- the need for developing countries to build up their national production capacity especially in key agricultural products,

developing countries should be given greater policy space rather than be limited in their policy choices, as is the case today. The fate of national economies can change very quickly, yet the policy framework and options for developing countries remains relatively inflexible.

[4] An ESCAP study reveals that the EU's final bindings for the year 2000 are almost two-thirds above the actual tariff equivalent for 1989-1993. For the US, they are more than three-quarters higher. Furthermore, for major agricultural products, developed countries' tariffs are about twice as high as those of developing countries. For 2 major cereals, wheat and maize, the bound tariff rates for developing countries are 94% for wheat and 90% for maize. In contrast, the OECD average in the first year of implementation (1995) was calculated at 214% for wheat, 197% for barley, 154% for maize (FAO 1996).

There are some suggestions for providing greater policy flexibility:

a) All developing countries should be able to use a positive list approach to declare which agricultural products or sectors they would like liberalised. That is, only the products which are declared by a country are subject to liberalisation commitments under the WTO. The World Bank and IMF's conditionalities should likewise be adjusted. When economic circumstances change, countries should also be able to notify and readjust their liberalisation commitments.

b) Allow developing countries to re-evaluate and adjust their tariff levels. Where it has been established that cheap imports are destroying or threatening domestic producers, developing countries should be allowed to raise their tariff bindings on key products to protect food security.

c) There should be greater flexibility in levels of domestic supports developing countries are allowed to provide. This is not the case at present under WTO commitments.

d) Developing countries should be able to invoke a Special Safeguard mechanism during times of low world prices or when imports exceed a certain maximum amount. For example, a developing country which has low import tariffs

The Process of Change in International Agricultural Research for Development and the Role of NGOs

By Ann Waters-Bayer, NGO Committee of the CGIAR

Background to the current process of change in the CGIAR

The CGIAR (Consultative Group for International Agricultural Research) has been in existence for almost 30 years. There are many dedicated scientists in the 16 international research centres in the "System" who want to contribute to combating hunger in developing countries. However, in recent years, critical voices have become louder and are demanding a revision of the System. As pointed out by the EIARD Working Group (EIARD 2000), some of the criticisms have included:

- problems in extending benefits of the "Green Revolution" to marginal areas
- problems in forging new partnerships beyond the System
- unhealthy competition between CGIAR international agricultural research centres (the "Centres") and national agricultural research systems (NARS) for donor funding
- duplication of efforts when several Centres base staff in the same region
- inflexibility in responding to new research challenges.

At International Centres Week in October 1999 (ICW99), the CGIAR decided to start an exercise of defining its future up to the year 2010. At the Mid-Term Meeting in May 2000 (MTM2000) in Dresden, the Technical Advisory Committee (TAC) presented a draft paper entitled "A Food Secure World for All: Toward a New Vision and Strategy for the CGIAR". This drew in part on an electronic conference held in December 1999 and January 2000 that involved mainly people who are or were in the System. A Synthesis Group was formed at MTM2000 to pull together the results of the various studies, papers and contributions on structure and governance made by the TAC, Centre Directors Committee, various other committees (including the NGO Committee of the CGIAR), some regional research fora and other groups and individuals, and to present a proposal for restructuring to ICW in October 2000.

In July-August 2000, a second electronic conference was held on CGIAR governance, organisation and structure. This involved a wider group of about 500 stakeholders, including some people from NGOs. During this wider discussion, it became clear that, "if the CGIAR wants to

base its new organization on a broadly shared understanding of what the System is about and what it should be doing in the next ten years, then it needs to spend more time and effort in building that consensus before moving ahead into the questions of structure, organization and governance" (Berdegue & Escobar 2000). Nevertheless, because of tightening money belts and impatience among many critics of the System, the CGIAR felt obliged to move ahead as quickly as possible with a restructuring process.

At ICW2000, the TAC Vision and Strategy paper, which had been revised after the discussions in Dresden, was adopted. The main "planks" of this paper were:

1. focus alleviation of poverty and hunger
2. bringing "modern science" to bear on productivity and institutional issues related to poverty and food insecurity
3. priority to sub-Saharan Africa and South Asia
4. regional approach to research planning and implementation
5. seeking new partners to improve problem identification, research and dissemination of results
6. adopting a task force approach to address priority issues
7. serving as a catalyst within the global agricultural research system.

Also at ICW2000, the Synthesis Group reinforced the idea of a regional approach to agenda setting: defining priorities for the totality of agricultural research in each region and defining the role of the CGIAR within that broader regional agenda. It also proposed a federation with a lean central structure, but it was not clear whether this referred only to a federation of the 16 Centres or would also replace the informal association of governments, international and regional organisations, and private foundations known as the CGIAR. Many questions remained open, such as accountability to "shareholders" (donor members from North and South) and stakeholders (those who affect and are affected by CGIAR activities), legal status, funding sources, and the composition and role of a board and/or other governance mechanisms. However, some "quick wins" were given support, such as re-aligning the programmes of the CGIAR Centres to allow for closer collaboration and avoid duplication of efforts; pooling common services of Centres, particularly those for raising public awareness and mobilizing resources; and eliminating MTM after 2001.

The participants at ICW2000 agreed that a Change Design and Management Team would be given the task of generating concrete proposals for improving CGIAR structure, organisation and governance by MTM in May 2001 in South Africa.

Creation of the GFAR: a parallel and complementary process

Also in response to criticism that the CGIAR Centres had little positive impact on agricultural development and were setting their priorities without adequate participation of the intended users of the research (small-scale farmers and the national research and extension organisations that should be supporting them), the CGIAR decided in 1996 to set up a Global Forum on Agricultural Research (GFAR). This seeks to bring together the key stakeholders in international agricultural research for development (IARD): farmer organisations, NARS in developing countries, NGOs, "advanced" research institutes in industrialised countries, donors and the private sector. The main aims are to involve all these stakeholder groups in formulating a global framework for IARD and to promote closer collaboration between them in research for poverty reduc-

tion, food security and sustainable management of natural resources. Particular attention is given to forming and/or strengthening regional, subregional and national fora for IARD in the South. Various meetings of stakeholder groups at these levels culminated in a global conference held in Dresden in May 2000, prior to the MTM2000 of the CGIAR.

Partly as a result of a concerted effort of the Forum Environment and Development in Germany to bring together as many people from NGOs and small-farmer organisations (SFOs) as possible to discuss IARD immediately before the GFAR and CGIAR meetings in Dresden, several representatives from NGOs and SFOs from both the North and the South attended these latter two meetings. This gave these civil-society organisations a much greater opportunity than had ever existed before to discuss the approaches, methods and contents of IARD with CGIAR members and people from the Centres.

The external review of the GFAR was quite favourable, and the process of building up fora at several levels is continuing. The NGOs that were involved in the GFAR regard this as a possibility to strengthen the participation of NGOs and SFOs in setting the research agendas, but there is still a long way to go to set up the mechanisms that will institutionalise this participation. There are plenty of statements being spoken and printed about involvement of civil society in decision-making and implementation, but few examples of real partnership between NGOS and SFOs, on the one hand, and international and national research institutes, on the other. Institutional cultures are slow to change.

A member of the NGO Committee, Jean Marc von der Weid from Brazil, brings NGO perspective into the GFAR Steering Committee. The NGO Committee supports the idea of using the GFAR structure for regional priority setting for the CGIAR. However, if the NGOs and SFOs are to have a real influence in this process, then considerable efforts will have to be made to ensure more than token participation in discussions of agricultural research at these various levels. At the moment, the opportunities for influence by NGOs are better at global level than at regional or national levels, where this influence could have more direct impact on research practice and related policy.

First steps in the process of change design and management in the CGIAR

Immediately after ICW2000, the CGIAR Chair and World Bank Vice-President Ian Johnson set up an eight-person Change Design and Management Team (CDMT). It includes management specialists from both inside and outside of the System, half from the North and half from the South, and is headed by the former President of the Canadian International Development Agency (CIDA), Margaret Catley-Carson. The CDMT is supported by 15 resource persons from Belgium, Canada, France, India, Switzerland, UK and USA. Of the total of 24 persons who are members of and resource persons to the CDMT, three are from "Life Science" companies (Novartis and Monsanto). The CDMT is guided by a 22-person Steering Group, headed by the CGIAR Chair. This group includes individuals who bring perspectives from the Centres (ICARDA, ICLARM, IFPRI, ILRI), the co-sponsors (World Bank, FAO), southern CGIAR members (Brazil, China, Colombia, Egypt, Philippines, South Africa), largest contributors (Japan, USA), other bilateral contributors (France, Germany, Norway, Switzerland, UK), other international and regional organisations (Rockefeller Foundation) and partnership committees (one person each from the NGO Committee and the Private Sector Committee of the CGIAR).

The first meeting of the CDMT and the Steering Group took place in December 2000 in Washington DC. A strong desire for a programmatic approach to research and development (R&D) emerged clearly. The CGIAR was viewed as an association not for the purpose of supporting brick-and-mortar research centres but rather for the purpose of addressing issues of global concern through agricultural research. It was suggested that the activities in which the CGIAR researchers have specific strengths be grouped together under banners that designate the central issue being addressed or impact to be expected, e.g., dealing with climatic change, or improved human nutrition and health.

The CDMT was asked to take another look at the federation model presented (and rejected) at ICW2000 and to define more clearly the relations between the Centres and the CGIAR, including its current Secretariat, TAC and the various other components of the System. Considerable attention was to be given to questions of finance, as the stagnation and – in some cases, like Germany – the reduction in funding to the CGIAR has been a great cause for concern and, indeed, a driving factor behind the change process. The CDMT was asked to consider how policy-makers and stakeholders who influence policymaking (including civil society) in both the North and the South could be persuaded that it is vital to invest in IARD.

There was some tension between, of the one hand, the desire of some individuals, especially some from the World Bank, to have modalities of decision-making that would make the CGIAR less costly and more time-efficient and "nimble" in its responses to change and, on the other hand, the desire of some individuals to have genuine consultation or even participation in decision making not only by the CGIAR "shareholders" but also by the stakeholders in IARD.

Enhancing the inputs of civil society

In January 2001, the NGO Committee, with funding support from Ford Foundation, organised an electronic conference on enhancing civil society inputs into IARD. It was felt that key actors from civil society (e.g. NGOs; farmer organisations; environmental, policy advocacy and consumer groups) had been little involved in the process of re-organisation within the CGIAR. The e-conference was meant to encourage actors from civil society to take part in the debates about the mission, approaches, structure and governance of the System. For two weeks, 246 persons from different sectors of civil society discussed these issues.

Most participants felt that the CGIAR was not as pro-poor as it should be; some saw it as dominated by the interests of rich farmers and multinational corporations. There was consensus that the CGIAR should aim at contributing to poverty reduction, and that this required major changes in the System. It was felt that the NGO Committee should play a key role in facilitating a broad-based process of discussion and consultation to develop a vision of IARD with the following central elements:

- Poverty reduction, food security and natural resource conservation should be the main criteria in setting priorities for research. The CG should move closer to small farmers and their specific conditions and needs, especially to rural communities in regions of the world that are not likely to attract the interest of private R&D.

- The donor community must continue to support public, international and national agricultural R&D to meet the special needs of the poor and to counterbalance the effects of the dominant trends in international science and technology, particularly those related to biotechnol-

ogy and intellectual property rights (IPRs).

- Research outputs produced with public funding should not be patented.

- Social science research in sustainable agriculture and natural resource management (NRM) should be strengthened.

- SFOs must play a stronger and more direct role in the planning and decision-making processes and bodies of IARD.

- The Centres should intensify their work with NGOs, taking advantage of NGO expertise in working with the rural poor and in using participatory approaches to R&D.

- To meet this new orientation, the CGIAR must reform its organisation, governance and incentives systems and create a new organisational culture.

Participants felt that NGOs have a comparative advantage in the use of broad-based, system-oriented or holistic approaches that are needed to understand the complex issues of rural poverty, food security and NRM. Most CGIAR scientists are not equipped with the knowledge base and skills to deal with the problems of the rural poor. The strong expertise of NGOs and other civil society organisations in this respect would be a valuable contribution from civil society to IARD.

"Civil society" includes a very broad range of sectors of society with many different points of view and interests regarding IARD. It was felt that it might be a mistake to expect that the NGO Committee could speak for civil society, because this gives a false notion of homogeneity and consensus. Instead, the NGO Committee should aim to enable the many voices of civil society to be expressed. Diverse mechanisms for civil society input into the CGIAR are needed to allow different views to come through.

The major points of disagreement among participants in the e-conference related to:

- **Capacity for change within the CGIAR:**
  Many participants thought that trying to influence the CGIAR was a waste of time. Instead of seeking reform through cooperation, energies should be devoted to creating new organisations, particularly networks of groups, communities and individuals that can truly harness local knowledge and modern science and technology to reduce poverty, increase food security and improve natural resources. Others saw the CGIAR as an international institution that contains many elements deeply committed to its goals and that had become increasingly open to collaborate with others, including NGOs, national agricultural research institutes (NARIs) and SFOs. These participants thought that the NGO Committee should promote collaboration and dialogue among stakeholders in and around the CGIAR.

- **Mechanisms through which NGOs should collaborate with the CGIAR:**
  Several participants thought that NGOs should receive a significant share of the financial resources that today go to the CG Centres. Others favoured research consortia with shared funding.

- **How to implement a more "demand-driven" approach to priority setting:**
  Some participants thought this could be achieved only if NGOs and farmers are represented on Centre Boards and major decision-making committees in the System including the TAC. Others favoured establishing the NGO Committee as a permanent decision-making and monitoring and evaluation body within the CGIAR, parallel to TAC.

- **Level of research:**
  Most participants thought that the CGIAR should become more directly engaged in local and regional development-oriented research, particularly in marginal regions. Others argued that the CGIAR should produce research results with broad potential for international impact, and that its role could only be complementary to that played by other organisations working at national and local levels.

- **Role of biotechnology in IARD:**
  Some participants argued strongly against the use of public resources for biotechnology research, especially research to generate genetically modified organisms (GMOs). Others felt that some forms of biotechnology might benefit the poor, if linked to low-external-input agriculture and if the research products remain in the public domain.

The participants saw no reason why IARD funding should be restricted to the CGIAR Centres. Many participants favoured greater use of open, competitive-bidding mechanisms that would allow participation of any organisation qualified to do good-quality, pro-poor research.

They agreed that the NGO Committee should seek influence on IARD not only at global level but also at Centre level. Furthermore, it was suggested that regional and national subcommittees involving both NGOs and farmer organisations be created and supported for regular consultation on policy issues and as a basis for civil society influence on setting research priorities.

In summary, the participants felt that civil society must ensure that the CGIAR carries the responsibility of its stated mission to achieve sustainable food security and reduce poverty in developing countries and that it produce research results that are international public goods. Civil society must make the CGIAR accountable to a more inclusive regional approach to the formulation and implementation of its research agenda with full participation of SFOs, NGOs and other groups in civil society.

Second round in the change design and mangement process

The CDMT and the Steering Group met again in February 2001 in The Netherlands. For this meeting, the CDMT had prepared an Issues Paper that was short and clear, listed options and some disadvantages and advantages of these, and asked the Steering Group for its views to guide the future work of the CDMT. The results of the above-mentioned civil society e-conference were made known to all members of the CDMT and the Steering Group.

Global Challenge Programmes

Everyone in the CDMT and Steering Group seemed to agree on the proposal to create Global Challenge Programmes (GCP) to ensure more output-oriented research and to improve linkages between research and development so that the outputs really have some impact on the ground. A major motivation behind the idea of creating GCPs was to mobilise public research and development funds, as well as pledges for longer-term funding. Two possibilities of GCPs were mentioned as examples: a programme for agricultural development in sub-Saharan Africa and another for dealing with the impacts of climate change on smallholder agriculture. However, rather than defining specific GCPs, the CDMT was asked by the Steering Group to work out a process for selecting, planning and setting up such programmes and defining their governance structures.

The general feeling was that the programme approach should become the major thrust, involving a substantial part of public funding going to the System, not something done on the side while Centres continue with business as usual. It was felt that, if such a development-driven approach is taken, the re-organisation of the Centres would sort itself out on its own, as most of the public funds would be going towards the research projects at subregional and regional level under the umbrella of the GCPs, and those Centres that could not contribute to these projects would have to seek other alliances. This may drive some of the Centres into the arms of the private sector in their search for replacement of public funds. Private sector organisations may be interested in such alliances if it allows them to do the kind of research it is not allowed to do in "developed" countries. Civil society organisations will then have to decide on the ethics of seeking partnerships with such Centres through publicly funded programmes.

GCPs, GFAR and regional approaches

In the CDMT's Issues Paper, the GFAR was mentioned only once in parentheses. There was no indication (or explicit question) as to how the process of defining the CGIAR research agenda – and specifically the themes of the GCPs – would be linked with the subregional and regional processes of research priority setting that were agreed upon at ICW2000 and had already started in Latin America. During the meeting, the GFAR was mentioned occasionally in connection with constituency building (in collaboration with TAC). It was unclear whether:

1. the GCPs would be generated through the stakeholder-interaction processes being promoted through the GFAR, with the CG scientists/centres forming part of the GCPs; or
2. the GCPs would "belong" to the CGIAR, who would be in the driving seat, and the other partners would choose to join them through a process distinct from the GFAR.

When discussing the mobilisation of resources for the GCPs, the Steering Group felt that this could involve an initiative discrete from the CGIAR-centred efforts. It is foreseen that, for each GCP, there will be a Steering Group that includes representatives from the major stakeholders. This could fit into Option 1. However, when people started talking about "management" of the GCPs by the CGIAR headquarters office, the tendency seemed to go more toward Option 2 – a more centralised approach. In view of the strong support given by Southern NARIs, NGOs and some donors to the less centralised approach of the GFAR, it is highly doubtful whether they would be in favour of Option 2.

Judging by the lack of enthusiasm in large parts of the Centres to commit their time and energy to system-wide and ecoregional programmes – and the generally lukewarm attitude shown by the CGIAR to the partnership-building process being facilitated by the GFAR – the donors will have to wield a big (money) stick to convince the Centres to engage in GCPs.

CGIAR executive body

Most members of the CDMT and the Steering Group felt it would be necessary to have some kind of CGIAR executive body. This body would have the authority to decide and act on behalf of the CGIAR between the annual meetings (ICW), but major policies would still be ratified by the donor group as a whole. The main argument for creating such an executive body, which has been rejected previously by the CGIAR members, was that it would be needed to coordinate the efforts of setting up and ensuring the accountability of the GCPs.

Technical Advisory Committee

It was proposed that the Technical Advisory Committee (TAC) become a Science Advisory Committee, giving external advice about the scientific quality and relevance of the research, including ethical issues, and working closely with what might be an independent unit set up to organise external reviews. A network of expertise in agricultural and NRM research and development (not only technical scientists) would be established, and the Committee would mobilise and draw upon this network as need be. The recently created Science Partnership Committee would be subsumed into this network.

Learning from NGO experience in ecoregional programmes

The arguments for setting up GCPs are quite similar to those raised over ten years ago in the CGIAR, when it was decided to set up ecoregional programmes of interdisciplinary research on sustainable agriculture and NRM within agro-ecological zones defined according to geographic regions. These were supposed to involve partnerships of Centres, NARIs, NGOs and farmers in research that linked technical, social, political and institutional aspects to solve land-use problems. Then, too, there was talk of sharing governance, decentralising and delegating authority and responsibilities. Then, too, there was hope of attracting more donor support through a programmatic approach and intentions to channel a significant part of CGIAR funds (almost 40%) to these programmes.

If the GCP approach proposed by the CDMT is going to work, a very close look must be taken at the experiences made thus far by NGOs in the framework of ecoregional programmes, in order to avoid repeating the same mistakes and to make sure that effective linkages can be built up between the GCPs and the research being done by farmers and local agricultural agencies. Thus far, relatively little funding by donors (6% of the total budget) and little enthusiasm by Centre scientists has gone into the ecoregional and system-wide programmes. It will be necessary to find out why, so that the same reluctance or resistance is not encountered when setting up the GCPs.

The need to learn from and improve the regional programmes was recognised by the International Service for National Agricultural Research (ISNAR), one of the 16 Centres, which held an international workshop on the organisation and management of these programmes on March 2001. In preparation for this workshop, the NGO Committee sought the views of some of the NGOs listed as programme partners.

Role of NGOs and forms of collaboration

The NGOs' perceptions of their roles in interaction with research centres coloured their perception of partnership within the ecoregional programmes. Some NGOs regard themselves purely as a link in the transfer-of-technology paradigm for R&D: they do the transferring. These NGOs were satisfied to have received genetic materials, technologies, technical advice or related training materials from the Centres. However, several NGOs – especially those concerned with ecological agriculture and NRM – do not accept a role restricted to dissemination of technologies, for two reasons:

1. They feel that formal research is alienated from the realities in the field and is not providing the types of technologies suitable for their partners – resource-poor farmers, often living in marginal areas – and they therefore

have to develop such appropriate technologies themselves together with the farmers.

2. They feel that simply transferring a technology will not strengthen the capacity of farmers to adjust to changing conditions and opportunities – and it is in this local capacity to adjust and innovate that the sustainability of agriculture and NRM lies.

These NGOs are encouraging farmers to experiment with promising options, supported by scientists and/or technicians from formal research and development. These are the NGOs that are most critical of the type of collaboration they have experienced in the ecoregional programmes and in other interactions with Centres. They are interested in being involved in setting priorities for research, in planning the specific research projects, in carrying out the research together with farmers and scientists, and in disseminating not only farmer-tested technologies but also the approach to promoting farmer experimentation and innovation.

The view was expressed that the international research Centres should leave it up to NGOs, NARIs and extension services, working closely with farmers, to implement the applied and adaptive research. The Centres, in their turn, should focus on generating knowledge about the mechanisms that lead to the results, both in the field and at different policy levels. Their research agenda should be driven by demand for this knowledge, coming from below. The Centres also have an important role to play in building up the capacities of NARIs and NGOs so that they can translate this knowledge into information that is useful for supporting local research and development processes.

This reflects some of the visions that these NGOs have for their interaction with Centres. Especially people in this type of NGO expressed the feeling that, when they (along with farmers' and community-based organisations) were involved in initial workshops to launch an ecoregional programme or to be consulted about regional research needs, they were merely being used to give legitimacy to the programme – through inclusion in the list of participants – and thus to gain financial resources. Subsequently, the Centres defined the research agenda themselves and used the funds primarily for their own activities or, at the most, for some activities of the NARIs.

The forms of collaboration mentioned by NGOs who were contacted because they were reportedly involved in ecoregional programme included:

- no further involvement after an initial workshop
- very peripheral involvement (e.g. some visits to the NGO field sites by scientists and students involved in the ecoregional programmes)
- providing data for regional databases
- joint PRA studies
- joint development of proposals for adaptive research and extension
- participating in workshops and seminars to discuss research methods and results
- most commonly: facilitating on-farm testing and/or dissemination of specific cropping or farming techniques suggested by the programmes.

Strengths and weaknesses

NGOs particularly appreciated the opportunities offered by some Centres for information exchange and learning during training courses, travelling seminars, e-conferences and participation in international conferences. Databases on R&D

methods for NRM in comparable areas were appreciated, as were discussions of relevant experiences and processes. Ecoregional programmes that had opened up to a wide range of partners and operated in a networking mode received good marks.

Referring to the specific ecoregional programmes with which they were in contact, the NGOs mentioned weaknesses such as:

- lack of clarity of the roles of the partners within the programme, because clear agreements and Terms of Reference were not worked out; also the potential benefits were not clear, particularly for the farmers
- too much time devoted to meetings, coordination and databases during a long start-up phase but very little concrete research activity
- high expenditures for the convening workshops but then a lack of donor support for the proposed collaborative research
- lack of transparency regarding availability or use of funds
- many activities under the "ecoregional" banner are simply a continuation of the conventional commodity-oriented production-enhancement research of the Centres
- too much emphasis on describing the benchmark sites and, even then, primarily only in biophysical terms, whereas social, political and institutional aspects are much more important for sustainable agriculture and NRM
- too much emphasis on complicated techniques in computer-based modelling and GIS that are of little use for research and development in the South
- little to no involvement of NGOs in the overall planning of the ecoregional programmes and seldom any feeling of genuine partnership with the other stakeholders (Centres, NARIs) in the sense of mutual accountability and shared responsibility.

Opportunities and threats

Despite all these weaknesses, the NGOs that have been in contact with ecoregional programmes strongly support the principles behind them and wish they would be put into practice. A desire was expressed to really plan and implement activities together with researchers, with listening and learning on both sides. NGOs that work in the field with resource-poor farmers feel that they can offer to these programmes:

1. their knowledge of the on-the-ground realities of the farmers, and
2. their insights and experience in innovative ways of approaching extension and service delivery (which can also be a topic of research), farmer experimentation and local capacity building.

They welcome closer interaction with research centres for sharing of ideas and materials, cross visits, training and follow-up coaching and advice in some aspects of research, and in joint analysis of outcomes of farmer-led research.

Most national and smaller NGOs operate on the basis of discretely funded projects, also to cover staff salaries, and do not have unrestricted funds that they can invest in ecoregional collaboration or networking. Some NGO people perceive the researchers in the Centres, including the coordinators of the ecoregional programmes, as operating on programme funds, whereas the NGO people have to invest their unpaid (non-project) time in the networking involved in the programme. The uncertainty of funding in most NGOs

makes it very difficult for them to enter into longer-term (several-year) research agreements, and they have no ability to "match" financially any kind of activity within the ecoregional programmes, not even by making "in-kind" contributions, e.g. staff time. This creates obstacles for NGOs to support or take advantage of ecoregional programmes.

Based on their experience thus far, the major threats that NGOs mentioned when referring to future regional research collaboration were the following:

- Researchers from the Centres, particularly the technical scientists, will continue to dominate the programmes and follow their own agenda, not being willing to share responsibilities and resources with NGOs and other actors in the NARS; NGOs will be used only to gather data for research and to disseminate results, but will not be accepted as real partners in the research process.

- donors will not give strong support to ecoregional research, as this would require closer collaboration between donors and a change in donor procedures.

Recommendations and next steps

Some of the recommendations made by NGOs for future regional research collaboration were:

- The ecoregions should be based much more deliberately on political and administrative regions that can be loci for alliances in development-oriented research, including policy and institutional aspects.

- The ecoregional programmes must have a much stronger input of social sciences (not just economics), including training of the technical scientists in communication techniques and multidisciplinary teamwork.

- Centres can serve a useful role as conveners of agriculture R&D consortia but should regard themselves as facilitators rather than implementers; as capacities and experiences in collaboration are built up, the consortia should be free to decide if the convening power is still necessary and, if so, who among the partners will have this responsibility.

- More NGOs should be involved in the ecoregional programmes but, rather than bringing together many organisations that may be motivated only by prospects of gaining access to funds, collaboration should start with those NGOs that are already working closely with farmers in developing and testing innovations that farmers regard as useful and build up from there, strengthening and broadening alliances based on real work in the field.

- The ecoregional programmes can play an important role in developing R&D methods in NRM but these should be methods applicable by organisations in the South with limited equipment and financial resources.

- Greater opportunities should be created for staff of NGOs to share information and experiences with other partners and to gain a clearer overview of the ecoregional programme of which they are a part, not only through electronic communication but also during brief but intensive learning workshops.

- Within the jointly-designed broad ecoregional programmes, there should be competitive grant schemes for specific projects, open to NARIs, universities and NGOs with a proven track record in development-oriented research. NGOs and SFOs should be involved in defining the criteria for evaluating the project proposals, and NGOs and SFOs that are not competing for the grants should

be involved in the evaluation of the proposals.

- NGOs and SFOs should be involved in ecoregional programme steering groups at subnational, national and international levels, as well as in monitoring and evaluating the outputs of the programmes.

- External reviews should examine the aspects of partnerships, division of responsibilities, transparency and accountability within the ecoregional programmes.

- NGOs and SFOs must make a concerted effort to obtain external funding that will allow them to make strong inputs into the process of regional priority setting and in designing and implementing ecoregional programmes.

The review of the experience with the ecoregional programmes revealed that one of the major weaknesses was lack of donor commitment. It was argued by some donors that the research proposals within the programmes were not of sufficient quality for funding. This is hardly surprising, as the type of interdisciplinary and multi-stakeholder consortia that were to be set up were new to IARD. Donor commitment to support large collaborative programmes involving decentralised research to solve major development problems identified by stakeholders must include funds for building up the partnerships, with strong involvement of NGOs and SFOs, and for developing fundable proposals. Otherwise, the GCPs will face the same problems as the ecoregional programmes.

Third round in the CDM process

In the meantime, the CDMT had worked quickly to produce a revised version of its proposals for restructuring the System and made this available via the web already in March 2001. It was also distributed widely by email by the GFAR Secretariat. The CDMT received numerous responses from donors, regional fora, Centre Directors, Centre Boards, the private sector, NGOs and concerned individuals. This is a CGIAR change process that includes wider consultation and appears to be more transparent than any that has gone before, but the reins of power in terms of decision-making are being pulled in more tightly.

The April 2001 meeting of the CDMT and the Steering Group revealed the strong thrust by the donors – foremost the World Bank – to make the CGIAR an institution governed by the "shareholders". The Consultative Council, in which also stakeholders were members, will be eliminated, as will the Mid-Term Meeting of donors and stakeholders from the Centres, other research institutes in North and South, private industry and civil society. Instead, an Executive Council composed of a small number of "shareholders" will act on behalf of the CGIAR members between annual meetings. While this is a move toward much stronger control by the donors, the proposal to form Steering Committees for the new GCPs that will be composed of representatives of all stakeholders involved is a move toward broader-based governance of these integrated research and development programmes. It is clear where civil society should be focusing its efforts to realise influence on governance.

During the April meeting, it was made clear that the GCPs, although "global" in name and implication, could be regional in application. Most of the donors present gave a strong vote for restructuring the System through a quick shift (within five years)

of at least half of CGIAR funding toward GCPs rather than Centres.

However, the procedure for identifying the themes and establishing the partnerships for these GCPs became less rather than more clear in the revised proposal by the CDMT. Although the vocabulary of regional priority setting is still used, the actuality will probably be that a few Centres will assemble existing activities under a "global" banner and will proceed more or less as before. It will be up to the donors to insist on partnerships with other actors in research and development and to withhold funding until fair and binding agreements with these partners have been made. At the same time, initiatives need to be taken at regional and subregional levels by non-CG actors to draw up programmes and projects under "global" programmes, based on their regional priorities. Here, the GFAR can play an important supportive role in ensuring the participation of civil society organisations, but this will be possible only if the donors provide sufficient funds for this purpose.

In the proposed structure for the CGIAR, there is no independent body that oversees the activities and decisions of the donors and ensures that public funds are being used in the interests of the poor in the developing world. The entity that comes closest to this will be the Science Council (the proposed name for the new TAC) and its supporting "pools" of scientists and development experts at global and regional levels. More individuals concerned with social, institutional and ethical issues are supposed to be included.

NGOs and SFOs will have to be strategic in securing positions within bodies of influence, including the Science Council and its "pools" of experts, the Boards of Trustees of the Centres, the Steering Committees of the GCPs, and the evaluation missions for the Centres as well as the GCPs and the projects under their umbrella.

In order to support and coordinate these efforts to "infiltrate" the System and to facilitate links between the various NGO and SFO representatives in governing bodies and evaluating missions, there will be a need for a civil society entity – possibly with the legal form of a foundation – devoted to ensuring that civil society interests are promoted in IARD. Another important task of such an entity would be to keep a watchful eye on the activities and decisions of the System, to make deviations from the mandate known to the public and to exert political pressure on the System to fulfil its mandate.

Such groupings of civil society organisations have already been formed in some countries. These and additional initiatives and networking between them deserve support, as do the efforts to strengthen civil society inputs into IARD at subregional and regional levels. To stimulate the creation of such bodies and to ensure good communication between them, a professional body is needed with one or more full-time employees. Initially, such a body would have to be funded from outside sources and could be part of an existing institution, such as the GFAR Secretariat or ISNAR.

In addition, now that the Mid-Term Meeting and Consultative Council will be eliminated, more opportunities will have to be created to allow direct exchange between donors, scientists and stakeholders of IARD. These must be very deliberately pursued through the global, regional and subregional fora on agricultural research for development (under a renamed and correspondingly focused GFARD).

The NGO Committee can help to make voices of civil society heard within the System and can work closely with the CGIAR Secretariat and civil society organisations to keep Centres, GCPs, NGOs and SFOs informed about opportunities for collaboration. However, in the structure of the System as proposed by the CDMT, the NGO Committee will have neither the power nor

the resources to exert strong political influence on the directions taken by the System. Such influence can be exercised only through close collaboration of the NGO Committee with independent external organisations of civil society.

Planning the strategy of civil society to influence IARD

In a continuation of the project supported by Ford Foundation, the NGO Committee will host an international workshop of civil society organisations in mid-May 2001 in Frankfurt, Germany. This will be followed by a regional workshop for NGOs and SFOs in southern and eastern Africa, to be held in Durban, South Africa, immediately before MTM2001. At both these workshops, the CDMT proposal for change in the CGIAR will be discussed.

The NGO Committee hopes that a working group can be set up, comprising members of the Committee, the NGO representatives in the GFAR and representatives of other organisations, especially SFOs, with sufficient independent funding to be functional and effective. Such a body – a Civil Society Council or Foundation – will be able to engage with the CGIAR, donors and other actors in IARD from a much more powerful position than can the NGO Committee. Judging from the reactions of civil society thus far to the CDMT proposals, the meeting will probably seek how to strengthen NGO and SFO involvement in setting priorities for and implementing research and development programmes in regions defined in geo-political terms.

The subregional and regional fora being organised under the umbrella of the GFAR are currently dominated by scientists in the NARIs, most of whom show little concern for the negative effects of capital-intensive agriculture and globalisation and show little understanding for the underlying causes of poverty, hunger and natural resource degradation. A concerted effort will have to be made to strengthen the influence of NGOs and SFOs on agricultural research to push the agenda of resource-poor farmers.

The workshops will focus on defining mechanisms through which civil society can influence IARD, both within and beyond the CGIAR, and can establish genuine partnerships in agricultural research and development at regional and local levels.

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