

CGIAR International Centers Week
Washington, DC.
October 26-30, 1998

Summary of Proceedings and Decisions



Shaping the CGIAR's Future



Consultative Group on International Agricultural Research (CGIAR)

CGIAR Centers

Centro Internacional de Agricultura Tropical (CIAT) • Cali, COLOMBIA

Center for International Forestry Research (CIFOR) • Jakarta, INDONESIA

Centro Internacional de Mejoramiento de Maiz y Trigo (CIMMYT) • Mexico City, MEXICO

Centro Internacional de la Papa (CIP) • Lima, PERU

International Center for Agricultural Research in the Dry Areas (ICARDA) • Aleppo, SYRIAN ARAB REPUBLIC

International Center for Living Aquatic Resources Management (ICLARM) • Makati City, PHILIPPINES

International Centre for Research in Agroforestry (ICRAF) • Nairobi, KENYA

International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) • Patancheru, INDIA

International Food Policy Research Institute (IFPRI) • Washington, DC, USA

International Irrigation Management Institute (IIMI) • Colombo, SRI LANKA

International Institute of Tropical Agriculture (IITA) • Ibadan, NIGERIA

International Livestock Research Institute (ILRI) • Nairobi, KENYA

International Plant Genetic Resources Institute (IPGRI) • Rome, Italy

International Rice Research Institute (IRRI) • Los Baños, PHILIPPINES

International Service for National Agricultural Research (ISNAR) • The Hague, NETHERLANDS

West Africa Rice Development Association (WARDA) • Bouaké, CÔTE D'IVOIRE

CGIAR 1998 International Centers Week (ICW98)

**Washington, D.C.
October 26 - 30, 1998**

Summary of Proceedings and Decisions

Shaping the CGIAR's Future



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Major Decisions



**CGIAR 1998
International Centers Week**

The Group made the following major decisions at the 1998 International Centers Week in Washington, DC.

1. The Group endorsed a new mission statement emphasizing food security and poverty eradication (See page 20.):

To contribute to food security and poverty eradication in developing countries through research, partnership, capacity building, and policy support, promoting sustainable agricultural development based on the environmentally sound management of natural resources.

2. The Group asked the CGIAR Centers to adopt congruent mission statements emphasizing their functions as global centers of frontier science. The Centers should continue to create strong synergies across the CGIAR system and, through creative partnerships, bring both traditional scientific knowledge and advanced science and technology to bear on the needs of the world's poor. (See pages 20-21.)

3. The Group endorsed the thrust of the System Review Panel's recommendations on the CGIAR's scientific agenda and directions concerning integrated gene management and integrated natural resources management. The Centers and the Technical Advisory Committee (TAC) will incorporate these broad thrusts as they set the 2000 research agenda. The recommendations on related institutional changes require further consideration in the context of other governance issues under study. (See page 21.)

4. The Group endorsed the goals and principles embodied in the System Review Panel's recommendations on broadening CGIAR partnerships. The Group agreed to implement more effective consultative processes, both within the System and with external partners, including the NGO, private sector, and scientific communities. The CGIAR will strengthen its partnership with the Global Forum on International Agricultural Research (GFAR) and explore additional partnership arrangements with national agricultural research systems (NARS) from developing countries, particularly Africa. (See page 21.)

5. The Group endorsed the strategic intent of the System Review Panel's recommendations on the CGIAR's governance and finance. The Group agreed to streamline the evaluation process, improve the efficiency of the TAC, link the Impact Assessment Evaluation Group (IAEG) more closely with TAC, continue the World Bank's leadership role in the CGIAR, improve the CGIAR's long-term financial prospects, and improve the efficiency of decision-making in the CGIAR (by improving both the structure and processes of decision-making). It noted that the recommendation for establishment of a central board requires further study. (See page 21.)

6. The Group expressed reservations about the System Review Panel's recommendations to establish the CGIAR as a legal entity, eliminate the co-sponsor status of the UN agencies that founded the CGIAR, appoint a full-time Chairman who also acts as Chief Executive Officer, and request the CGIAR Secretariat to provide staff recruitment services to the Centers. (See page 21.)

7. The Group agreed that the Chairman should organize the follow-up to the System Review report by appointing a Consultative Council to monitor the implementation of decisions made at ICW98, arrange for or conduct follow-up studies on issues requiring further elaboration, and draft action-proposals for consideration at the CGIAR's mid-term meeting in 1999 (MTM99). The Consultative Council will be broadly representative of the System as a whole and will consult with the System Review Panel, as appropriate. The Consultative Council will not have decision-making responsibility. Decisions will be taken only in plenary sessions at MTM99. The Council should make every effort to have its recommendations available to the CGIAR 4-6 weeks before MTM99. (See pages 21-22.)

8. On the recommendation of the Genetic Resources Policy Committee (GRPC), the Group endorsed the *Guidelines for the Designation of Accessions under the FAO agreements*, a new *Material Transfer Agreement (MTA)*, and a *Second Joint Statement on the Agreement Placing CGIAR Germplasm Collections under the Auspices of FAO*. (See page 52.)

9. Following discussion of "terminator gene technology," the Group decided that the International Agricultural Research Centers supported by the CGIAR, which are engaged in breeding new crop varieties for resource poor farmers in developing countries, will not incorporate into their breeding material any genetic systems designed to prevent seed germination. (See pages 52-53.)

10. The Group endorsed the Centers' intention to establish a central advisory unit on biotechnology and legal issues at the International Service for National Agricultural Research (ISNAR). (See page 53.)

11. The Group adopted a report from the Finance Committee on the 1998 financial outcome. At the aggregate level, the 1998 financial outcome of \$335-340 million is in line with the \$345 million approved at ICW97. Thirteen centers will be fully funded in 1998. The remaining three Centers will not achieve their financing targets, as approved in the 1998 financing plan. (See page 48.)

12. The Group adopted the Finance Committee's recommendations on the financing plan for the 1999 research agenda. An overall CGIAR financing plan of \$340 million was approved. (See page 54.)

13. The Group commissioned the preparation of the 2000 research plans by the centers, which will be viewed in the context of the 1998-2000 medium-term plans endorsed by the Group. (See page 56.)

14. The Group endorsed the recommendations of the External Program and Management Reviews (EPMR) for the Center for International Forestry Research (CIFOR) and the International Centre for Research in Agroforestry (ICRAF). On the Systemwide Genetic Resources Program (SGRP), the Group endorsed the recommendations made by the CGIAR subcommittee in parallel session, which call for follow-up actions by the SGRP, Centers, and TAC. (See pages 43-45.)

15. The Group endorsed the implementation of the proposed CGIAR Logical Framework. (See page 46.)

16. The Group approved the appointment of Hans Gregersen as chair of the Impact Assessment Evaluation Group (IAEG) and the two-year extension of the terms of three TAC members – Richard Harwood (United States), Magdy Madkour (Egypt), and Cyrus Ndiritu (Kenya). (See page 47.)

17. The Group accepted China's invitation to host MTM99 in Beijing. (See page 57.)



CGIAR 1998

International Centers Week

Summary of Proceedings

Formal Opening

James D. Wolfensohn

World Bank President James D. Wolfensohn formally opened ICW98. In his welcoming remarks, Mr. Wolfensohn praised the CGIAR's "extraordinary achievements" and recalled that one of his first lessons in development economics was at the hands of his colleagues in the CGIAR. As a board member of the Rockefeller Foundation thirty years ago, he visited CIMMYT in Mexico, where he walked through the fields with local farmers. Evoking this fond memory, Mr. Wolfensohn expressed his "very, very strong and very deep feeling" for the CGIAR.

The report by the System Review Panel, which Maurice Strong chaired, has extraordinary importance to development in general and to the work of the World Bank in particular, he said. The critical importance of agriculture and rural development to poverty alleviation is a central if not the central thrust of the Bank's work, and the Bank is "extremely keen" to maintain its relationship with the CGIAR. Concerns stemming from the Bank's lack of discretionary funds are unrelated to the CGIAR and the Bank is continuing its support of the CGIAR at \$45 million.

Mr. Wolfensohn compared the challenges presented by the System Review Panel to the situation he faced when he joined the World Bank three and a half years ago. Like the World Bank, the CGIAR must face up to complex issues of partnership, inclusion, coordination, legal and commercial developments, governance and financing, among others. It must do this not just in the interest of the organization, but in the interests of the 800 million people who do not have food now and the billions more whose needs will have to be met by 2025.

The Group's deliberations on the scientific and developmental aspects of the CGIAR must recognize that developing technology is one thing, but utilizing it is another. The CGIAR should think about integrating its work with property rights, rural roads, the extension of information to women, financing small enterprise, conversion of agricultural products, and developing marketing capabilities so farmers can benefit from the increased productivity. Successful and sustainable development requires bringing agricultural research together with other essential components so that the necessary communications, marketing, financing, and information flows are available to take the best advantage of research results.

In conclusion, Mr. Wolfensohn reiterated that the Bank supports the CGIAR 100 percent. He urged the Group to stand back and focus on the issues as they consider the System Review Panel's recommendations. The report of the distinguished System Review Panel is a "superb" work and provides an excellent basis for the ICW98 discussions, Mr. Wolfensohn said.

Chairman's Announcements

by
Ismail Serageldin

Ladies and Gentlemen:

The established practice has been for me to open this meeting with a policy statement. I will not do so today, however, because I do not wish to pre-empt Maurice Strong and the distinguished members of the System Review Panel who will shortly present their conclusions to you. A discussion in plenary will follow. I will offer you some comments based on that discussion. At this stage, I will only make a few announcements.

Votes of Thanks

The World Bank President's unprecedented participation in our opening session was an enriching experience. We appreciate his support. On behalf of the CGIAR system, I want to place on record our appreciation of his participation in ICW98, his great interest in the CGIAR, and his many personal interventions, which have ensured that Bank support for the CGIAR remains stable.

In the same spirit, let us give Maurice Strong and his distinguished colleagues on the System Review Panel a special welcome. The Panel, a powerhouse of intellect and a bastion of credibility, was conscientious and thorough. They consulted widely, listened carefully, and covered much ground in their report.

A review panel is required to assess the current state of the institution they are examining, before suggesting changes or adjustments for the future. In the first part of their task, they have given the CGIAR a ringing endorsement. In the second, they have advised us to celebrate our strengths but confront our weaknesses. We welcome the endorsement and the advice. We are particularly encouraged by the assertion that "there can be no long-term agenda for eradicating poverty, ending hunger, and ensuring sustainable food security without the CGIAR."

Their suggestions for the future have been carefully crafted into a set of 126 recommendations arranged under 29 thematic headings. We should not attempt to tinker with words and phrases, but respond to the broad themes proposed as a framework for the future. I am particularly pleased—but not surprised—that the Panel does not seek to force a set of prescriptions on the CGIAR but, instead, invites the CGIAR itself to "choose carefully the projects and programs that it emphasizes." Thus, we should look on the System Review not as a road map but as a compass.

The system review challenges us to shape our future. It challenges us to seize the opportunities of dazzling new developments in the world of science. It challenges us to be the

catalyst of a new international order of partnership. Above all, it challenges us to ensure that whatever we attempt or achieve will help to rescue and strengthen diminished human lives.

I thank the System Review Panel chair, Panel members, Sub-panel members, the Executive Secretary, System Review Secretariat staff, and all others who participated in and contributed to the Third System Review.

Please join me in acknowledging our appreciation in the customary CGIAR manner, with a round of applause.

I have a number of announcements to make. May I suggest that you hold the applause until the end of my announcements, when we can engage in a collective round of acclamation. Thank you.

Welcome

Uganda is represented for the first time, and we are delighted by that country's presence at the CGIAR table. I extend a warm welcome to all newcomers as well as those who have been with us before. I especially welcome the observers from Uruguay and Venezuela. We hope to greet them as full members soon.

Comings and Goings

We will be saying farewell to a number of our colleagues at a formal ceremony later this week, and I will reserve comment on them until then. Meanwhile, let me get on with other comings and goings.

COSPONSORS

I am delighted to welcome a strayed sheep that has returned to the fold. Alex McCalla, whose association with the CGIAR runs wide and deep, is back with us as the World Bank's cosponsor representative. One of my predecessors described Alex as "a class act with a great wisdom and a loud voice." I can assure you that all are in peak condition. We anticipate wise counsel from him during our consideration of the System Review and, of course, thereafter.

CENTERS

Bob Havener will be ending his multi-purpose term at CIAT in December. He was chair of the Board of Trustees, then acting Director General, then chair again, while serving concurrently as the Director General of IRRI. He now moves to the ICARDA board, where he has already been named as chair-designate.

We welcome the new Director General of IRRI, Ronald P. Cantrell, who is attending Centers Week for the first time in his current capacity. Ron Cantrell is the former head of CIMMYT's maize program. His extensive experience as an academic, researcher, and manager spans developing country institutions, the private sector, and universities. We are confident that IRRI will thrive under his leadership.

Dick van Sloten returns home to the Netherlands after some twenty years at IPGRI. As acting Director General of the then IBPGR, he successfully negotiated its transformation into a fully independent and fully international research center. We will miss him, and we wish him well in his new endeavors.

National Agricultural Research Systems (NARS)

Fernando Chaparro, who has ended his term as chairman of the Global Forum on Agricultural Research (GFAR), is the new Executive Secretary of the NARS Secretariat at FAO. So we will continue to benefit from his support.

Honors and Awards

Ruth Haug, our colleague from Norway, has been honored by her *alma mater*. The University of Maryland, where she received her Ph.D. has granted her its Distinguished International Alumna Award for her services to international agricultural research. We are delighted that she has been so recognized.

A large number of Center scientists have received honors and awards, beginning with Rebecca Nelson of CIP, who was awarded the prestigious MacArthur fellowship, for her research on infectious mechanisms of agricultural pathogens and for her work with farmers. The full list of honorees is extensive. We share their pride and respect their efforts. I have asked that all the details be published in the CGIAR Newsletter, together with information about other outstanding developments at the Centers.

Mid-Term Meeting 1999

The Government of the Peoples Republic of China has invited the CGIAR to hold its mid-term meeting in Beijing next year. I thank next year's hosts for the invitation. MTM99 will take place on May 24 through 28.

Now, please join me in a round of applause.

Adoption of the Agenda

Let us move on to the adoption of the agenda.

The System Review is the primary agenda item at ICW98, but we do have a number of other important items that deserve close attention. These include:

- The research agenda for 1999, and funding prospects,
- Kenya will report on innovative mechanisms for strengthening agricultural research,
- Biotechnology and proprietary science issues, following on discussions at a number of previous meetings, most recently in Brasilia,
- Trends in financing agricultural research,
- External Reviews, and
- Reports from the various CGIAR committees.

Colombian research efforts will be featured on the agenda. Colombia's support for the CGIAR has been extraordinary and exemplary. The current commitment is for a contribution of \$3 million a year for the next five years. I commend Colombia for this heroic effort. Please give the Government and people of Colombia a special round of applause.

We can look forward as well to center presentations on the substance of CGIAR research, aptly organized around the theme of natural research management.

When we turn to consideration of the System Review, let us do so in the CGIAR spirit that encourages full discussion, respect for differing viewpoints and, most of all, concern for those whose lives will be touched by what we decide.

As a means of enhancing our deliberations, discussion of the Review Panel's recommendations will be structured to allow debate by the system as a whole, as well as sharply focused examination of crucial issues by three working groups dealing with the major themes of the Review Panel's report: science, partnerships, and governance and finance. Final decisions will, of course, be taken by the general membership in plenary session.

Each working group will be open to all members, who can self-select the group they wish to join. A core membership with a designated chair has been identified. This will guarantee that at least those members listed in the core group will participate. It is not intended to exclude any member from taking part in working group deliberations. The core members of each working group and the room in which they will meet, is listed in a note that has been distributed and is available outside.

The three working groups are expected to facilitate decisions in plenary, by formulating action-oriented proposals for decisions by the CGIAR, and recommending mechanisms and time frames for proposed actions to be implemented.

We face a particularly significant Centers Week. With commitment and determination we can together reach decisions that will place science at the service of the disadvantaged and unconnected for many years to come.

May we adopt the agenda?

Now, without further delay, let me call on Maurice Strong.

CGIAR System Review

Highlights of the System Review Report

The centerpiece of ICW98 was the report of the third System Review of the CGIAR, entitled "The International Research Partnership for Food Security and Sustainable Agriculture." The Group received the comprehensive report, undertaken over an 18-month period, which provided an analysis of the CGIAR's science, partnerships, governance and finance. Review Chair Maurice Strong presented the independent panel's twenty-nine recommendations, noting that the report reaffirms the CGIAR's universally acknowledged record of achievement in international agricultural research.

"Investment in the CGIAR has been the most effective use of official development assistance (ODA), bar none," the report states. "There can be no long-term agenda for eradicating poverty, ending hunger, and ensuring sustainable food security without the CGIAR."

According to the Strong Panel, the CGIAR faces a unique challenge as rapid advances in science and technology radically reshape the future of the world's agricultural and food production systems. To address these challenges, the CGIAR must develop a strategy for the future founded on the System's assets, strengths, and comparative advantage. The CGIAR's strengths include its clearly focused mission, dedicated professionals, unique constituency, significant germplasm collections numbering 600,000 accessions and the ability to enhance the development of improved crop varieties, early recognition of the need to incorporate natural resources management into its research portfolio, extensive training and education programs, and policy research.

Building on these strengths and preparing for the future requires identifying and addressing the System's weaknesses. This will require the CGIAR to set long-term strategies, proactively protect access to its germplasm resources, reduce financial constraints on Centers, mobilize funds from private sources, carry out inter-Center research, and better demonstrate the impact of its research efforts, including its work in Africa.

Regarding the consolidation of Centers, the panel concluded that it would be more prudent to have a separate and more in-depth study at a later date, to help reposition Centers in relation to the new, coherent CGIAR strategy which emerges from the System Review process.

Mr. Strong emphasized that the Panel's report is a strategic policy review intended to provide a compass for the CGIAR's future research direction, not a detailed blueprint for action.

M. S. Swaminathan provided an overview of the System Review Panel's findings on science. The main thrusts of the Panel's recommendations concern integrated gene management and integrated natural resource management. The CGIAR faces a time of unmatched opportunities for the biological sciences. At the same time, there are profound ethical and safety issues, complicated by the new issues of proprietary science. The Panel recommended that the CGIAR should patent its

processes and products to assure continued public access. The CGIAR should also emphasize national and international biosafety standards.

The Panel recognized that fast-paced scientific developments require new approaches to improve sustainable productivity—for example, moving to gene management in breeding and developing ecosystem models for natural resource management. These new approaches will require a retooling of the Centers' scientific capacity. Focused inter-center efforts, which draw on outside expertise, will be required to accelerate the generation of new knowledge. The Panel emphasized the value of international research network for effective inter-center collaborations, particularly on natural resource management.

The Panel praised the CGIAR's unique character and its value as a major player in agricultural and environmental research. The CGIAR must not lose sight of its greater purpose—to transform agricultural production in the developing world. This will require linking productivity research with natural resources management. The CGIAR should utilize the phenomenal advances of modern science and information technology to pursue its mission.

The importance of CGIAR partnerships with advanced research institutions and NARS in developing countries should not be underestimated. The CGIAR should serve as both a catalyst and participant in a global mobilization to ensure that cutting edge agricultural science serves the entire human family.

Whitney MacMillan provided an overview of the Panel's recommendations on the CGIAR's governance and finance. The Panel proposed that CGIAR governance continue to be based on the principles of member sovereignty, center autonomy, and independent scientific advice. The panel also emphasized the need to update the principles of consensus decision-making, non-political operation, and informal organization.

The Panel suggested that the CGIAR extend its efforts to introduce necessary changes. Internally, the CGIAR will need to streamline the mechanisms for ensuring scientific excellence and measuring development impact. Externally, the CGIAR will be required to keep in step, as the international order transforms itself. To compete and function in the 21st century, the CGIAR must provide strong leadership, build effective partnerships, and protect access to the means of producing food.

The CGIAR's research agenda should not be held to ransom by budgetary constraints. Yet, without adequate financial support, the CGIAR cannot hope to fulfill its true potential. The Panel estimated that the CGIAR will need a budget of some \$400 million by the year 2000. This will require expanding CGIAR support from development agencies, the private sector, and the philanthropic sector.

The Panel's recommendations are designed to make the CGIAR a more nimble and responsive organization, which can foster innovation, manage and resolve conflicts, and develop well-focused, long-term strategies. The Panel outlined a governance model for the Group's consideration. The Panel's goal was to give broad guidance at the strategic level, leaving details to be determined through the in-depth analysis and decisionmaking by CGIAR stakeholders.

Working Groups

The Group systematically considered the System Review Panel's report. The CGIAR discussed the Panel's report and presentations in opening plenary sessions, then organized itself into three Working Groups to enhance focused, in-depth discussion and allow diverse viewpoints. The three Working Groups—on Science, Partnerships, and Governance and Finance—met in open sessions, with others attending ICW98 freely participating. The Working Groups met twice, each time reporting their comments in plenary, where there was further discussion by the Group. Thus the issues raised by the Panel were discussed extensively in working group and plenary sessions, enriching the final discussions and outcomes. (See box on *The Approach to System Review Discussions at ICW98*.)

Working Group I: Science. Chaired by Mr. R. S. Paroda, the working group discussed the panel's proposed paradigm shift from the founding objective of productivity-oriented research to research that integrates gene management with natural resources management. The working group also discussed the proposal that CGIAR research should move upstream, utilizing the advantages of the agro-biotechnology "revolution" to the fullest extent possible, and should be linked both to advanced research institutions and national agricultural research systems in developing countries. CGIAR science must utilize both established and new tools, achieve more progress in low-potential areas, and build on the gains in higher potential areas.

Working Group I made the following key recommendations:

- The CGIAR's proposed new mission statement should reflect the overarching objective of the CGIAR's science, which is to address the needs of the rural and urban poor, and particularly, poor women, in developing countries.
- The CGIAR's science program must be holistic and systems-based, and integrate the thrusts of gene management and natural resource management through knowledge-based approaches.
- The Centers' integrated gene management (IGM) approach should be based on the conservation, characterization, and sustainable and equitable use of biodiversity. Systemwide plant breeding efforts should address a balanced integration of traditional breeding with modern marker-assisted breeding and bioengineering technologies. The objectives of IGM should include nutritional security.
- The Centers' natural resource management approach (NRM) should adopt "intensive" rather than "precision" farming methods, emphasize stronger partnerships with national agricultural research systems, utilize GIS methodologies, and include minor and underutilized crops.
- The Centers' policy research should be carried out in partnership with NARS and regional fora. The CGIAR should provide information and policy options for multilateral government negotiations, but avoid taking positions or advocating specific policies.

- The CGIAR's strategy for Africa should take into account the continuing degradation of Africa's natural resource base. The degradation of natural resources in South Asia should be acknowledged.
- The scientific capacity of TAC should be strengthened and revitalized as part of the streamlining of the Committee structure.

Working Group II: Partnerships. Chaired by Mr. Henri Carsalade, the working group discussed the Centers' progress in developing broad-reaching partnerships. The renewed CGIAR has fully accepted the conclusions embodied in the Lucerne Declaration and Action Plan that there is no room for divisiveness in the agricultural effort if we are to feed some 100 million more people each year. The press of population, unsustainability of environmental degradation, and demeaning reality of continuing economic inequities demand fully integrated partnerships, the use of appropriate technologies, and the utilization of available opportunities. The Centers need a system of partnerships which helps each partner contribute to the best of its comparative advantage.

Working Group II made the following key recommendations:

- The CGIAR should put more emphasis on building the policy research capacities of national agricultural research systems.
- Collaborations with national agricultural research systems should be more strategic and facilitate South-South cooperation.
- There should be greater coordination among international agricultural research centers, African national agricultural research systems, and donors. An agricultural development strategy focusing on Africa, which builds on existing programs, should be pursued.
- The CGIAR should develop and strengthen its partnerships with advanced research institutions and international scientific organizations, including professional societies at the national level.
- The CGIAR should strengthen partnerships with the private sector to expand collaborative research opportunities and assure that products emerging from research by the Centers and their partners can be utilized efficiently and effectively.
- The CGIAR should expand its interactions and consultations with the Global Forum on Agricultural Research (GFAR).
- The Centers, as well as the CGIAR, should develop mechanisms for better production and use of information about CGIAR research. Since components of a Global Knowledge System already exist, there is no need to develop a new system.
- The NGO and Private Sector Committees should be retained as part of a streamlined Committee structure, but their memberships should be broadened to include individuals with grass roots and Center experience.

- The Centers should give high priority to eco-regional research conducted in collaboration with national agricultural research systems. Inter-Center collaborations on Systemwide programs should be strengthened.

Working Group III: Governance and Finance. Chaired by Mr. Andrew Bennett, the working group noted the Panel's concern about the continuing suitability of the informal system of governance, under which the CGIAR has functioned for over a quarter of a century. It recognized that what was appropriate and effective in the past is not necessarily appropriate for the future. Recently, the CGIAR has modified its governance by introducing standing committees and mechanisms for strengthening partnerships.

Working Group III made the following key recommendations:

- The CGIAR should improve its decision-making process to increase efficiency, effectiveness, accountability, and transparency throughout the system.
- Working Group III did not endorse the formation of a central board, as proposed by the Panel. Instead it recommended further examination of the issue.
- World Bank leadership should continue, but Working Group III did not endorse the proposal for a full-time Chief Executive Officer.
- Wider membership would increase ownership and help in agenda-setting, but Working Group III cautioned that the CGIAR should not become a mini-United Nations.
- The CGIAR should strengthen its mechanisms to ensure scientific excellence. External Program and Management Reviews should be streamlined, and Centers should have sufficient resources to carry out special reviews. To measure development impact across the system., IAEG should link more closely with TAC.
- There should be a follow up mechanism to work with the Chairman to implement agreed action, and to review and prepare recommendations for decisive consideration by the Group at the next mid-term meeting (MTM99). This mechanism could be a Consultative Council or task force, with broad representation and clear terms of reference.

On issues of finance, Working Group III supported CGIAR efforts to seek support from three constituencies: development agencies, the private sector, and the philanthropic sector. The discussion of specific financial issues was deferred to the plenary discussion of the Finance Committee's report.

(For the full text of the Working Groups' recommendations, see Annex IV: *Consolidated Comments of Working Groups on System Review Recommendations.*)

Plenary Discussion

The comments and conclusions of the three working groups were consolidated into a single working document which captured in tabular form the various discussions of the working groups reported in plenary. (See Annex IV.) Based on the consolidation, the Group reached agreement on the panel's first three recommendations and concluded that on the other recommendations more elaboration was required. It discussed briefly how various components of the System could provide more study and comment.

On the recommendation to amend the CGIAR's current mission statement, the Group agreed to include a reference to "developing countries" and to request the Centers to modify their own mission statements to be consistent with the CGIAR's amended mission statement. It was noted that the Centers' mission statements should be specific and focused enough to allow evaluation of the performance of each Center.

On the recommendation that the International Agricultural Research Centers strive to serve as global centers of frontier science and technology, the Group discussed the need to place greater emphasis on links and partnerships with national agricultural research systems and agricultural research institutes, primarily through the Global Forum.

The recommendation that the International Agricultural Research Centers adopt a dual strategy to improve sustainable food security and the generation of greater opportunities for rural income was adopted without change.

Recognizing time pressures and the richness of the System Review Panel's report and its discussions at ICW98, the Group agreed that there is a need to give more thought and more detailed attention to many of the recommendations in the Panel's report. It discussed the structure and composition of a follow-up mechanism and the importance of Southern participation, with several members offering resources to support the participation of members from the South.

The Group also reaffirmed that there was no intention to have the System Review Panel's final report modified based on the working group comments and the plenary discussion. A popular version of the report will be published to reach wider audiences of opinion leaders and policymakers.

Decisions

The Chairman thanked the System Review panel for its ringing endorsement of the CGIAR's past achievements and for providing recommendations to construct the CGIAR's path for the future. Following discussion of the recommendations and the working groups' comments in plenary, the Group:

- Endorsed a new mission statement emphasizing food security and poverty eradication. The statement reads as follows:

To contribute to food security and poverty eradication in developing countries through research, partnership, capacity building, and policy support, promoting sustainable agricultural development based on the environmentally sound management of natural resources.

- Asked the CGIAR Centers to adopt congruent mission statements emphasizing their functions as global centers of frontier science. The Centers should continue to create strong synergies across the CGIAR system and, through creative partnerships, bring both traditional scientific knowledge and advanced science and technology to bear on the needs of the world's poor.
- Endorsed the main thrusts of the Panel's recommendations on the CGIAR's scientific agenda and direction concerning integrated gene management and integrated natural resources management. The Centers and TAC will incorporate these broad thrusts as they set the 2000 research agenda. The recommendations on related institutional changes require further consideration in the context of other governance issues under study.
- Endorsed the goals and principles embodied in the System Review's recommendations on broadening CGIAR partnerships. The Group agreed to implement more effective consultative processes, both within the System and with external partners, including the NGO, private sector, and scientific communities. The CGIAR will strengthen its partnership with GFAR and explore additional partnership arrangements with NARS from developing countries, particularly Africa.
- Endorsed the strategic intent of the Panel's recommendations on the CGIAR's governance and finance, but agreed that further deliberation is required in a number of areas. The Group agreed to streamline the evaluation process, improve the efficiency of TAC, link the Impact Assessment Evaluation Group (IAEG) more closely with TAC, continue the World Bank's leadership role in the CGIAR, improve the CGIAR's long-term financial prospects, and improve the efficiency of decision-making in the CGIAR (by improving both the structure and processes of decision-making). The recommendation for establishment of a central board requires further study.
- Expressed reservations about the Panel's recommendations to establish the CGIAR as a legal entity, eliminate the co-sponsor status of the UN agencies that founded the CGIAR, appoint a full-time Chairman who also acts as Chief Executive Officer, and request the CGIAR Secretariat to provide staff recruitment services to the Centers.

Next Steps

Recognizing that further work in connection with the System Review recommendations is the responsibility of the CGIAR, the Group agreed that the Chairman should organize the follow-up to the System Review report by appointing a Consultative Council. The Council's primary responsibilities would be to monitor the implementation of decisions made at ICW98, arrange for or conduct follow-up studies on issues requiring further elaboration, and draft action-proposals for consideration at the CGIAR's mid-term meeting (MTM99).

The Consultative Council should be broadly representative of the System as a whole, consult with the System Review Panel as appropriate, and hold meetings open to all CGIAR members. The Council would eliminate the need for the *ad hoc* stakeholder consultations convened by the Chairman in the past.

The Council will not have decision-making responsibility. All decisions will be taken only in plenary sessions at MTM99. The Council should make every effort to have its proposals and recommendations available to the CGIAR 4-6 weeks before MTM99.

Subsequent to ICW98, the composition of the Consultative Council was determined as follows:

Composition of the CGIAR Chairman's Consultative Council

To Follow up the CGIAR Decisions on the System Review

Northern members

Canada
Germany
Japan
The Netherlands
Sweden
Switzerland
United States

Southern members

Brazil
China
Colombia
India
Iran
Philippines
Uganda

Multilateral Organizations and Foundations

Arab Fund for Economic and Social Development
European Commission (EC)
International Fund for Agricultural Development (IFAD)
Rockefeller Foundation

CGIAR Standing Committees (Chairs)

Oversight Committee (OC)
Finance Committee (FC)
Technical Advisory Committee (TAC)
Non-Governmental Organization Committee (NGOC)
Private Sector Committee (PSC)

Cosponsors

Food and Agricultural Organization of the UN (FAO)
UN Development Programme (UNDP)

Centers (Two representatives from each)

Committee of Board Chairs (CBC)
Center Directors Committee (CDC)

The Approach to System Review Discussions at ICW98

Overview

The Third System Review of the CGIAR challenged the Group to shape the future of the CGIAR and position it for relevance, vigor, and effectiveness in the new millennium. The twenty-nine recommendations from the System Review Panel provided a starting point for that process. To enhance deliberations and increase the efficiency of decision making, the Group's discussion of the recommendations was structured to allow unfettered debate by the system as a whole, as well as sharply focused examination of crucial issues by three working groups dealing with the major themes of the Panel's report: science, partnerships, and governance and finance. Final decisions were taken by the Group in plenary session.

The task of the working groups was to delineate issues and options, and submit action points for consideration in plenary. Each working group was representative of the system as a whole, and working group meetings were open.

Discussions of the System Review Panel's report at ICW98 encompassed:

- Presentation of the report by Maurice Strong and panel members
- Questions and comments in plenary
- Discussion by working groups
- Review in plenary of reports from the working groups
- Informal discussions at the heads of delegation dinner
- Decisions in plenary

The Approach

Given the wide range of concerns covered by the System Review, there was need to focus the discussion on substantive issues. There was also need to ensure the participation of all stakeholders in the discussion so that the decisions taken by the CGIAR would be based on a broad consensus. To achieve these aims, over one-half of the meeting time available during ICW98 was reserved for the discussion of the System Review Panel's report and recommendations (17 out of 32.5 total hours).

With more than 600 people attending ICW98, focused discussion on key themes and crafting of action proposals required work by small groups. Work by small groups helped to facilitate--not replace--consensus decision making by the Group. Thus, it was essential to carefully balance (and sequence) items to be covered in the plenary with those to be addressed through working groups.

About one-third of the time devoted to the System Review was allocated to focused discussions through working groups. Three working groups were formed -- covering science, partnerships, and governance and finance. Each working group took as its starting point the Panel's report and recommendations, but expanded the discussion beyond the report as necessary.

Terms of Reference

The terms of reference for the working groups were as follows:

1. Consider the System Review recommendations and help focus the discussion by identifying the key issues and options in the areas of:

Working Group 1	Science
Working Group 2	Partnerships
Working Group 3	Governance and Finance

2. Propose CGIAR action in these areas:

- Endorse the recommendations as stated.
- Endorse with qualification.
- Initiate further study before CGIAR action
- Do not endorse—propose an alternative (status quo or other)

3. Recommend specific mechanisms and timing for implementing each proposed CGIAR action.

Each working group was chaired by a CGIAR member and included as members individuals from a wide cross-section of the CGIAR. The working groups met concurrently and in open session, providing all ICW98 participants an opportunity to voice their views on specific issues in a focused discussion.

The composition of the three working groups follows:

Working Group 1	Working Group 2	Working Group 3
R. S. Paroda, Chair (India)	H. Carsalade, Chair (FAO)	A. Bennett, Chair (UK)
M. Altieri (NGOC)	F. Chaparro (NARS)	M. Badawi (Arab Fund)
N. Clarke (ILRI)	S. Dryden (PSC)	S. Barghouti (ICRISAT)
A. El Beltagy (ICARDA)	T. Fogelberg (Netherlands)	B. Dreesmann (NGOC)
J. Lewis (USA)	J. de Haas (Germany)	P. Egger (Switzerland)
Y. Mitsui (Japan)	K. Nwanze (WARDA)	W. Falcon (CIMMYT)
T. Reeves (CIMMYT)	M. Pineiro (IFPRI)	M. Petit (World Bank)
C-G. Thornström (Sweden)	G. Scobie (CIAT)	M. Williams (ICLARM)

Honors and Awards

The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) received the 1998 King Baudouin Award, the CGIAR's highest accolade, which recognizes the most outstanding scientific work done by a CGIAR center in partnership with national research and development organizations. His Excellency Ambassador Alex Reyn of Belgium was present when the 1998 award was given to ICRISAT for the development of high-yielding and disease resistant pigeonpea varieties and for its contribution to agriculture and human welfare in developing countries. ICRISAT is the first center to win two consecutive King Baudouin Awards.

The Chairman's Excellence in Science Awards recognize outstanding scientific achievements by CGIAR scientists and support staff. During a ceremony in plenary, the Chairman presented the 1998 awards:

- ❑ *Promising Young Scientist* – Dr. Keith Ballingall, International Livestock Research Institute (ILRI), for his research on how the genetic make-up of cattle influences their immunizations with ILRI's novel vaccines.
- ❑ *Outstanding Local Scientist* – Dr. Kedar N. Rai, International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), for his major contributions to the pearl millet research program.
- ❑ *Outstanding Local Scientific Support Staff* – Dr. Imad Eujayl, International Center for Agricultural Research in the Dry Areas (ICARDA), for his outstanding contributions to ICARDA's biotechnology program.
- ❑ *Outstanding Scientific Partnership* – International Center for Living Aquatic Resources Management (ICLARM) and its partner institutions, the Bureau of Fisheries and Aquatic Resources (Philippines), Freshwater Aquaculture Center of the Central Luzon State University (Philippines), and Institute of Aquaculture Research (Norway), for producing a highly improved strain of tilapia, a hardy freshwater fish from Africa, under the Genetic Improvement of Farmed Tilapia (GIFT) project. The GIFT tilapia provides a means of improving aquaculture production and making fish more affordable for many poor people.

Lowell Hardin, an internationally known agricultural economist who was one of the founders of the CGIAR system and governance, received the Nyle Brady Award for his outstanding contributions to the CGIAR.

M.S. Swaminathan and James Peacock received special scrolls of honor for their contributions and accomplishments during their tenure as Chairs of the Genetic Resources Policy Committee (GRPC) and the Impact Assessment and Evaluation Group (IAEG), respectively.

The Group cited Justin Yifu Lin and Keiji Kainuma for their service to the CGIAR and contributions as members of the Technical Advisory Committee (TAC).

By unanimous consent, the Group passed a resolution thanking Michel Petit for his service and many contributions as a cosponsor of the CGIAR representing the World Bank and as Chair of the Finance Committee.

The text of the resolution reads as follows:

"In recognition of his strong interest in tropical agriculture, his enthusiastic participation in the CGIAR renewal program, his effective leadership of the Finance Committee, his innovative pursuit of partnerships through ESDAR, and his dedicated commitment to the mission of the CGIAR, the members of the CGIAR wish to record their gratitude to Michel Petit for his distinguished service as a cosponsor of the CGIAR (1988-1998), representing the World Bank, and Chair of the Finance Committee (1993-1998), and to offer him warm felicitations for the future."

International Centers Week: Centers Forum

Throughout its deliberations, the System Review Panel focused on the importance of linking productivity research with the environmentally sound management of natural resources.

As in past years, a portion of ICW was devoted to Center presentations on key issues related to CGIAR research themes. Reflecting the Panel's focus, natural resources management (NRM) was selected as the main theme for the Centers' Forum at ICW98. In consultation with the Secretariat, Centers selected among four main topics for their presentations: 1) New Approaches to NRM; 2) New Tools for NRM; 3) Policy Issues in NRM; and 4) New Institutional Modalities in NRM. The main points of these presentations (most of which were visually illustrated) are summarized:

Natural Resources Management: New Approaches

International Center for Tropical Agriculture (CIAT)

CIAT's strategy in integrated natural resources management utilizes a landscape perspective; it deploys research capacities in biotechnology, soils and cropping systems, Geographic Information Systems (GIS) and participatory research to develop information, methods, tools and technology of global relevance. This strategy serves to confront land degradation and rural poverty, and aims at enabling rural people not just to grow better crops but to achieve sustainable livelihoods by managing their landscape in partnership with outside stakeholders.

CIAT developed GIS tools as components of decision support systems that help stakeholders with conflicting interests to identify common problems at the landscape scale. In Honduras, CIAT has developed GIS-based decision support tools to help watershed stakeholders decide where to work and which farmers to work with as they plan a local program to control burning of forest. Other research involves genetic improvements of the rooting ability of higher-yielding plants and other technology options that improve productivity but are also environmentally sound.

CIAT has identified a test to screen plants for fast, medium, and slow nutrient release associated with organic matter quality characteristics. This test can be done in one day and provides a powerful tool to screen the thousands of legumes in CIAT's germplasm collection.

Agroenterprise projects help small farmers to be competitive and take care of the environment. Small agroenterprise development is supported by biotechnology. CIAT trains national programs to use molecular markers for identifying traits needed to produce environmentally sound, high-value products.

In summary, CIAT's strategy uses an integrated approach to develop technologies that multiply options for improved land management and livelihoods and generate information

supporting stakeholder decisions. Substantial results and impact are emerging in many countries.

International Centre for Research in Agroforestry (ICRAF)

The first step of ICRAF's research agenda is identifying key poverty and natural resource management problems and their driving forces in different locations. One important result is a prediction of the risk of deforestation in the Congo Basin. This has enabled a representation of the site where ICRAF is working in southern Cameroon.

ICRAF's second step is working to enhance the food production and income functions of the trees. Work on improved fallows, for example, has resulted in significant increases in maize yields following a two-year-long fallow. Three years after this fallow, ICRAF found substantial increases in yield over and above the yields with the natural fallow.

ICRAF's third step focuses on enhancing a number of ecosystem functions of the trees. ICRAF has worked with the Alternatives to Slash and Burn Consortium to determine if agroforestry systems sequester substantially more carbon than crops, pasture and grasslands. It has also evaluated the tradeoffs between food security and ecosystem resilience, and undertaken policy work aimed at conflict resolution. This research shows that there are no land use systems which generate high profits and high biodiversity—no ideal win-win situation. There are, however, complex agroforestry systems, which have a reasonable level of diversity and profitability.

The final step involves extrapolating and disseminating results through pilot projects in which NGOs, farmers' organizations, and extension services are involved. ICRAF also conducts research on policy implementation, using participatory methods. One important result has been a new decree in Indonesia that empowers some 7,000 indigenous smallholders with economic rights and explicitly recognizes the role of local institutions in sustainable resource management.

ICRAF's natural resources management paradigm builds upon the genetic improvement paradigm, but differs from it in several ways. Its objectives are multiple in order to meet farmers' needs; but it also aims to enhance ecosystem resilience. The focus cuts across spatial and temporal scales. It is participatory, but with many different categories of stakeholders. The systems that ICRAF is dealing with are complex, so the responses must be adaptive and evolutionary.

International Rice Research Institute (IRRI)

The macro picture for food production, land use, environmental issues, poverty, and sustainability issues is clear. World population will increase substantially and urban areas will double between now and 2025. The rural areas will remain highly populated. With less land, less water, and relatively less external inputs, more food and other agricultural products have to be produced. IRRI, with its partners, and in close collaboration with research groups in France and in the Netherlands, is addressing these problems through an ecoregional approach, which is illustrated by two case studies.

Can Tho Province in the Mekong Delta is Vietnam's rice bowl. Production must be intensified to feed the increasing population. This may mean two or three crops per year.

On the same land, farmers are starting to grow other crops to help increase their incomes. Both policymakers and farmers are currently grappling with their own sets of development issues.

India's Haryana State has similarities, but also some distinct differences. It produces a large quantity of rice, wheat and pulses, but there are growing concerns about water, much of which is brackish. Water-hungry rice technologies in the northeast are lowering the water table, whereas downstream the water table is rising. This is causing waterlogging, flooding and salinization. Moreover, farmers' incomes need to be increased to stem migration to cities.

In both cases, IRRI started with explorative studies to investigate the options for future development, and to examine the tradeoffs between environmental, socioeconomic and other objectives. In this first phase of the explorative land use studies, IRRI uses models and expert systems. GIS then allows users to look at complex factors and directions over time and space. At each site, the competition is stiff for scarce resources. The competing goals of the stakeholders in an area can be weighted through multiple goal analysis.

The ecoregional approach brings all these elements together to simplify the complex. It provides options for planners to make sound decisions about how to best handle local problems. SysNet is the mechanism that is providing the options. Through this unique network, researchers from around Asia are identifying and grouping sites with common natural resources and socioeconomic characteristics, and then analyzing land use options.

In Can Tho, planners are starting to use SysNet tools to determine how to best fit new high-yielding, short duration varieties into a diversified agricultural scheme. They are combining integrated water management, integrated nutrient management and integrated pest management into what is called production ecology. They are also using SysNet tools to determine which policies are best for stimulating new markets for diversified agriculture and what infrastructure is needed to facilitate these goals. The provincial government is investing about \$60,000 of its own money in applying SysNet tools to land use planning.

In Haryana, direct seeding of rice can help to conserve water; but it will also create new problems. The state government identified the need for new tools in preparing a 25-year land use plan. Now, planners are working with IRRI researchers to apply tools, explore options and come up with the best ways to meet their goals.

At its key sites around Asia, SysNet is providing the mechanism for making wise decisions based on evidence rather than intuition and planners are excited about these tools. SysNet is ensuring that these efforts will have a large impact by getting the tools into the hands of the people who want them.

International Service for National Agricultural Research (ISNAR)

One of ISNAR's four strategic thrusts is in agriculture and the environment. This work focuses on new institutional aspects of natural resource management. In collaboration with three countries in Latin America, ISNAR developed an inventory of institutions for strategic positioning of one institution in Venezuela's natural resource management. The first step was to determine characteristics of all the institutions involved. The second step was to develop indicators of their capacity. The third step was establishing consultation among these

different institutions, and that has led to a clear determination of the role and the linkages between the various institutions. The outcomes from using this approach are a stronger focus on the thematic areas where institutions really have comparative advantages, improved research efficiency in the whole system, and stronger collaboration within the NARS.

ISNAR's second area of work is related to setting priorities for NRM research. An approach for natural resource research priority-setting was developed in collaboration with Kenya's Agricultural Research Institute (KARI). The impact of using this approach was the reallocation of financial and human resources in the different target zones. It also improved the structure and transparency of the research agenda and, through the strong participatory approach, a better ownership of the research agenda.

ISNAR's third focus is on management of participatory research. Recent work of ISNAR has applied the evolutionary theory to planning and evaluation of participatory research. ISNAR also developed a framework for impact assessment and modeled the innovation process. This approach was used for an evaluation of participatory research in pest management in the Kenyan highlands. The outcome was a better understanding of the functioning of these initiatives, and an increased precision and professionalism in planning, monitoring and evaluation.

The fourth area of ISNAR research is on policy links and facilitating innovation. ISNAR has been involved in a study on closing the loop between research and policy, including a number of case studies. A study on lags in pesticide policy in the Philippines analyzed the flow of specific knowledge and the constraints to use this knowledge, and identified opportunities for improved policy responses. The results were improved links between research and policy, and improved environmental protection.

ISNAR is helping developing countries to develop and implement new institutional approaches for NRM research. In all this work, ISNAR has confirmed what was underlined by Agenda 21—that success will require profound institutional and policy changes.

Plenary Discussion

The plenary session following the “New Approaches” presentations focussed on several emerging common principles involved in NRM research.

- First among these was the more comprehensive and cross-disciplinary nature of the work. The research process thus requires development of new partnerships to garner the necessary skills.
- Second, such research must be carried out with a long term perspective and strategy.
- Third, local and traditional knowledge should be integrated to ensure the adoption of appropriate NRM policies.
- Fourth, the issue of progressing from a successful pilot project to a national scale—upscaling—deserves special attention in the NRM policy debate.

- Finally, research on NRM and the new approaches under development must be directly linked to implementation of improved policies that integrate economic, social, and technological factors in a sustainable manner.

Natural Resources Management: New Tools

International Center for the Improvement of Maize and Wheat (CIMMYT)

CIMMYT has launched a new Natural Resources Program and a stronger Economics Program. It also has changed the institutional structure so that a "G x E x M x P" paradigm permeates the Center through projects in which natural resources management is found side-by-side with crop improvement. This paradigm sums up the Center's work—productive Germplasm, tolerant to biotic and abiotic stresses, in the proper Environments, with not only suitable and sustainable and ecological crop management practices but also system and natural resources Management practices, all for the sake of the People with whom CIMMYT works.

The tools CIMMYT is applying to face these challenges can be grouped into four broad categories: GIS tools, farm experimentation tools, simulation model tools, and tools for information management and use.

CIMMYT has been developing Africa Country Almanacs, in partnership with Texas A&M University. This is cutting-edge GIS technology for non-GIS users. Africa Country Almanacs are being developed for 12 countries and will be distributed free-of-charge. Workshops have been held in three countries, and the response has been enthusiastic and overwhelming.

CIMMYT, also in collaboration with Texas A&M, is developing a Spatial Characterization Tool for Site Similarity Studies. This tool provides a powerful way for sharing information and synthesizing research results—helping scientists tap into relevant experience elsewhere.

A rich array of CIMMYT partnerships are working on new projects in simulation modeling, including national programs for Malawi and Zimbabwe through the Soil Fertility Network funded by the Rockefeller Foundation. Another tool being applied is an interface between GIS and simulation models that creates map surfaces that show where a green manure, a rotation, a mulch strategy, or a land use pattern will do well.

Finally, some of the best tools are not new, but old tools used in new ways and mainstreamed into all kinds of activities. CIMMYT is mainstreaming participatory research and farm experimentation into more of its research activities, leading to many unexpected and creative ways for system diversification. In Southern Africa, farmers are evaluating researchers' technologies, while researchers are learning about and helping to evaluate farmer-developed technologies.

CIMMYT is developing a Sustainable Farming Systems Database, similar to the International Crop Information System. This database can take geo-referenced information

from long-term trials, farmer monitoring, surveys, and field visits, and bring back summaries, graphs, and raw data for wide use.

International Potato Center (CIP)

A valuable tool for managing natural resources in the Andean ecoregion was created in 1992 with the establishment of the Consortium for the Sustainable Development, CONDESAN, among experts and institutions of five countries in the Andean Region—Bolivia, Colombia, Ecuador, Peru and Venezuela. In a short period, CONDESAN has demonstrated its value as a modality for conducting participatory research on natural resources management to attain sustainable improvements in the productivity, income and environmental quality of the Andes.

CIP embraces an ecoregional approach, targeting three areas of concern: creation of new management rules for common lands; management of unpredictable water resources in Andean watersheds; and the efficient use and preservation of agrobiodiversity, including the indigenous knowledge associated with it.

Four new tools are helping to respond to these particular needs in the Andes, one of the world's most environmentally fragile and poorest regions. The first is GIS for frost risk analysis; the second, remote sensing for livestock development; third is crop modeling to determine the impact of terracing on yields; and fourth is the trade-off models that deepen understanding of the relationship between production and environmental objectives.

GIS technology has made it possible to map the frost risk of the Altiplano. CIP has been able to identify the areas affected by frost with return times between 2 and 10 years. In these areas, production of Andean crops is obviously severely limited. Frost occurrence, rainfall and other weather and soil data have been combined and linked to crop potato growth models. This allows the prediction of ground cover, biomass, and tuber production.

Remote sensing provides another new tool. After extensive image manipulation studies and ground-truthing work in the Altiplano, satellite radar images and soil and climate data are being employed to differentiate between different crop and pasture stands and to estimate their primary productivity.

Another promising area is soil management research conducted in cooperation with the International Fertilizer Development Council, and aimed at reducing the labor cost of terracing. CIP land and water management researchers are measuring and quantifying the relationships between slopes and productivity, infiltration and reduced runoff.

CIP researchers are also exploring the scope of technologies that provide high crop output without greatly increasing negative environmental impact. Elaborate studies of pesticide behavior have identified entry points that can reduce negative environmental and health impacts.

International Center for Agricultural Research in the Dry Areas (ICARDA)

ICARDA has a long history of working on natural resources management in the fragile ecosystem of the dry areas—home to almost a billion people. ICARDA is looking at how, with some

modification, an endogenous water harvesting system can be made to work in modern agriculture. The Center is also using new tools such as GIS and remote sensing for source identification, monitoring of water use, identification of well locations, and integrated water management. A GIS has been constructed for an area of 33,000 square kilometers.

GIS and remote sensing are also an important component in land management. The data is used to determine erosion indices, the effect of stocking pressure, and rehabilitation techniques. In Central and West Asia and North Africa region, ICARDA is using new tools in determining the productivity of rangelands, monitoring the effect of stocking pressure on rangeland biomass, and assessing the sustainability of livestock production.

ICARDA's work on agroecological characterization is essential to successful natural resources management. ICARDA and Morocco have developed new methods for mapping rainfall, combining statistical techniques and GIS technology to interpolate precipitation data, guided by topography. Geo-referencing has been performed for 70 percent of the 117,000 accessions in ICARDA's germplasm bank. This helps in identifying sites of significant biodiversity for collections.

New tools are leading to improved germplasm. Among biotechnology tools, specific markers can be used for screening a large number of accessions to develop specific fingerprints for each accession. ICARDA has introduced and adapted this technique to analyze genetic diversity and its geographical patterns in natural populations.

Farmers in the harsh environments need crop cultivars, which are better adapted to such stresses as drought, heat, and cold. The Center is using the DNA marker technique to identify plant genetic resources with desirable traits for adaptation to stress environments.

New tools must intimately involve people. ICARDA is using decentralized participatory plant breeding to improve landraces, which are already adapted to their physical environment through the long course of natural selection. ICARDA has applied this approach to barley breeding in Ethiopia, and is extending it to other crops in the dry areas. ICARDA is integrating farmers into the research process by understanding their problems and developing solutions together with them.

International Plant Genetic Resources Institute (IPGRI)

IPGRI's work related to plant diversity concentrates on three different areas: management of agrobiodiversity *ex situ*, particularly with bananas and plantains; studying biodiversity in its natural surroundings; and using new tools for communications and extending IPGRI's outreach. For the entire cycle of *ex situ* conservation, new tools are becoming available that are helpful at every stage. These tools in two specific areas—molecular genetics and in tissue culture—are revolutionizing the handling and conservation of materials.

The world's largest collection of *Musa* is maintained in facilities in Belgium. IPGRI, through the INIBAP program, outsources from a partner institution—the Catholic University of Leuven in Belgium. This is the world's largest collection, approximately 1,100 different accessions, of bananas and these are being held in *in vitro* conditions in the laboratory. To date, 300 accessions out of the total collection have been characterized, and this work is showing its value in managing the germplasm collection. More is being learned about the relationship between

materials within the *Musa* genepool, and also their relationship to wild relatives. The identification of duplicates through molecular techniques is also improving the management of the collection.

A protocol has been developed for cryopreserving *Musa*, and the entire collection is being transferred into cryogenic conditions. This will represent considerable savings and increased safety of the collection. Every year, IPGRI distributes around 2,000 plant samples, mostly to developing countries, and many of these materials are now finding their way onto farmers' fields.

New tools are becoming available for studying genetic diversity in natural surroundings. One IPGRI study has examined the distribution of genetic diversity within the Sahel with a wide range of partners. The findings show that conservation of plant genetic diversity should take into account not only the spatial distribution but also the temporal distribution, i.e. the variability over time.

Plenary Discussion

Discussions in plenary of the “New Tools” presented by the Centers covered a diverse range of issues:

- In response to CIP’s presentation, it was noted that agricultural progress in the Andean region may not only be helping to conserve natural resources, but also preventing further migration to and ecological destruction of the Amazon. However, new technical tools being introduced for better NRM—such as farm terracing—must be directly linked to sound economic policies, otherwise they may be inappropriate.
- With respect to new training tools which are made available on the Internet, it is important that such materials be free from patent restrictions so that as many users as possible can benefit from them.
- Several of the Centers that are employing GIS as a new NRM tool have formed a consortium to ensure complementarity, rather than duplication, among these efforts. Among the greatest challenges with using GIS lies in the mapping of the socioeconomic data together with the natural data in order to obtain an “ecoregional” perspective.
- New molecular tools for managing plant genetic resources should be integrated with the knowledge and selection decisions that are being made by farmers. Integrated gene management must ultimately be merged with integrated NRM.

Natural Resources Management: Policy Issues

International Center for Living Aquatic Resources Management (ICLARM)

Coral reef ecosystems provide between 20 to 50 million low-income people with their livelihoods. A recent ICLARM study examined major stresses on 8,400 reefs worldwide and found that at least 60 percent are at some level of risk. The region where the reefs are at greatest risk is Southeast Asia.

ICLARM has built a global database covering over 100 countries with coral reefs. ReefBase is storing and synthesizing this information so that it can be used for policy and management analysis. ICLARM has developed a middle-level survey technique called Aquanaut, which is helping to train people to get better information from sites around the world. Assessments such as Reefs at Risk have improved the information for decisionmakers.

ICLARM has been integrating traffic dynamics, the fish database, and GIS to examine several coral reef management options. Marine protected areas can have many benefits including increasing fish yields, generating income through tourism, and helping to reverse damage from land-based activities. ICLARM is working in protected areas with stock enhancement and aquaculture in the Solomon Islands.

At Discovery Bay, in Jamaica, is a famous highly degraded reef. ICLARM has developed new sampling techniques for fish stocks there and early results are quite alarming. By contrast, an ICLARM study in the British Virgin Islands has documented a healthy protected area where natural fish recruitment is extremely good. The lesson is that if the reef gets into too bad a state, even a protected area is not going to help it in the short and probably medium term.

ICLARM's experience in Asia shows that integrated coastal zone management works best when local stakeholders share governance with governments, when scientists are on hand with information to provide management options and likely consequences, and where there is a considerable component of training and capacity-building.

ICLARM's experience on coral reefs and in other natural resource systems reveals that the science and policy interact dynamically. Science can generate knowledge, identify key issues, help resolve conflicts, and offer solutions and options for the people involved in resource management.

International Food Policy Research Institute (IFPRI)

IFPRI allocates about 25 percent of its resources to research on natural resources management policies. One part is devoted to property rights and collective action. IFPRI convened the System-wide Program on Property Rights and Collective Action, in which all of the Centers are now active members. This program has become an effective vehicle for supporting collaborative research, for information-sharing and capacity-strengthening.

IFPRI's research is addressing numerous issues in this area. Many projects are undertaken jointly with other CGIAR Centers. What follows are highlights of results from recent studies:

- A study of what influences farmers' investment in soil and water improvements in the semi-arid tropics of India found that land market reforms may be a powerful means to increase conservation investments;
- A comparative study of several countries' property rights regimes and forestry management practices in Africa and Asia demonstrated that forests are not well protected under state ownership systems;

- A study of the evolution of indigenous land tenure institutions in Ghana found that, contrary to common beliefs, individualization of land tenure has not weakened women's land rights;
- A study by IFPRI and ILRI on the links between property rights, risk, and the development of integrated crop-livestock systems in drought-prone areas of Sub-Saharan Africa found that drought risk is an important determinant of the existence of common property regimes and reciprocal grazing arrangements;
- A study of 86 watershed development projects in semi-arid areas of Maharashtra and Andhra Pradesh in India revealed that villages with projects operated by NGOs or jointly between NGOs and state agencies performed significantly better than those with purely government-managed projects;
- A study of canal irrigation systems in India showed that involvement of influential leaders and institutions like temples increase the likelihood that farmers will organize to manage the irrigation system; and
- A study carried out with ICARDA in low-rainfall areas of North Africa and West Asia demonstrated that government policies, together with increasing population and market pressures, have weakened local institutions and the management of common-property rangelands.

International Livestock Research Institute (ILRI)

About one third of ILRI's research addresses problems associated with natural resources management. Moreover, the System-wide Livestock Program concentrates on livestock-related natural resources management research. ILRI aims to link the best of farmer knowledge to the best of science in the CG System. It also seeks to engage all partners, from pastoralists and farmers to national and international decisionmakers, in an inclusive policy dialogue. ILRI's work with decision-support models is improving steadily and is better able to include people at all levels in this process.

ILRI and the United Nations Population Statistics Division have developed an animation of human population for Africa from 1960 to the year 2040. The large and connected areas on the map in 1960 were principally rangelands. By the year 2040, rangelands will shrink dramatically. They will also become disconnected and resource-stressed.

For 25 years, ILRI has conducted long-term research on rangelands. This has provided lessons about how these systems work biologically and socially. A great deal of research outside of Africa has also helped to build the foundation for sound policy analyses and policy action. Through long-term research in Africa, ILRI has found out that there are many livestock systems that are principally driven by climate, rather than by grazing. These systems cover about one-third of the land surface area of the Earth. Through modeling, ILRI can pose different scenarios into the future about how these systems will evolve.

ILRI is working with the savanna model developed at Colorado State University. The target variables for this model are conserving ecosystem integrity and balancing it with both food security and enhanced human welfare. ILRI's model can examine policies that cause changes in land use and land tenure. It can also look at changes in access to markets and to water, and changes in wildlife conservation practices and natural resource management. The clients for this model currently include the Tanzanian National Park Service, the Ugandan Wildlife Authority, environmental NGOs like the World Wildlife Fund for Nature and the African Wildlife Foundation, and pastoral NGOs. ILRI is currently using the model to look at different policy scenarios.

International Irrigation Management Institute (IIMI)

IIMI's work examines water issues in terms of policy, technology and management systems. All are equally important and must be integrated in a multidisciplinary manner. IIMI has calculated the water supply and demand situation for 118 countries to the year 2025 based on the best available data. About one third of the global population will live in regions that will not have as much water per capita for all their needs—agriculture, environmental, industrial, and so on—as they had in 1990. With such absolute shortages, water will be withdrawn from agriculture and allocated to the other sectors which have higher priority.

IIMI has developed computer modeling, in part, to address such policy issues. IIMI's World Water and Climate Atlas will be released on the World Wide Web in December 1998.

The projected map of Africa shows evaporation in a particular month minus the precipitation. If the net figure is negative it means rainfed agriculture is possible and irrigation is not necessary. What interests IIMI most are those areas needing supplemental irrigation in Africa. Using such data, IIMI is working with crop modeling specialists to examine which kinds of crops may be grown and where small dams might be built, and those measures Sub-Saharan Africa can carry out to get surplus water under control. The major problem of food security in Sub-Saharan Africa is a water control problem. If that can be better managed, then high-yielding varieties, fertilizers, and other production technologies can be employed to raise levels to what is needed.

With regard to the Dublin principles, IIMI is working with forestry, coastal resources and other policy experts on a study in Sri Lanka of an entire water basin that drains into a wildlife preserve and has multiple uses. The water basin principle is being tested in reality.

Another Dublin principle has been widely interpreted as meaning that water should be a market good and allocated according to prices. In fact, this principle says that water must be recognized as a basic need first and then allocated according to market demand after those primary demands have been met.

Plenary Discussion

The "Policy Issues" plenary focused on several key issues:

- Regarding the Dublin Principles, it was noted that these guiding ideas are not dynamic in nature and do not adequately address the implications of technological change or changes in the land, water and population balance.

- Privatization of water rights is an important emerging issue, which should be better investigated from a policy standpoint. With respect these issues, IFPRI will soon be publishing a book on negotiating water rights.
- With regard to changing property rights and NRM, countries undergoing social transitions are experiencing a period in which traditional property rights are breaking down while a new market-oriented system has yet to be fully in place. This transition period is insufficiently understood and may be problematic because it serves as a de facto public access system in which the most powerful can prevail. Zimbabwe appears to be caught in such a transition between respect for the central government system and respect for the traditional chieftainship systems.
- With respect to water and gender issues, research has proven the importance of involving women in the leadership of water user associations.

Natural Resources Management: New Institutional Modalities

Center for International Forestry Research (CIFOR)

In most tropical countries there is a serious reexamination of the institutional arrangements for forest management. The main challenge is identifying how governments can best be involved, while leaving responsibility for day-to-day decisions to the people closest to the forest. CIFOR's work on indicators of social sustainability has been examining different categories of people that depend upon or have a right to expect benefits from forests.

CIFOR is working with the Chinese Academy of Forestry in an area where most of the income from bamboo accrued to a tiny proportion of the population. A World Bank project introduced subsidized credit schemes, and this shifted the benefits distribution from bamboo to a more equitable arrangement. New rules were also introduced to prevent people from growing crops on steeper slopes and most of the population acquired a significant proportion of their income from bamboo.

But what works in one place may not work somewhere else. CIFOR is conducting a large number of case studies of individual non-timber forest product uses together with a consortium of researchers. Each case study is dependent upon local scientists working in a participatory way with local people but integrating their work into a global model. In terms of getting local scientists to take their own decisions after CIFOR's involvement ends, this is a powerful technique. This process can be greatly enriched by bringing in more upstream science.

Indicators are becoming especially important because governments need more efficient ways of measuring the health of systems and predicting outcomes. Adaptive management by local people requires built-in checks and balances and thus indicators. CIFOR has produced large sets of indicators from which scientists can draw their own sets for specific situations throughout the world.

CIFOR has conducted an analysis of about 145 models of deforestation. This work is challenging some fairly powerful CGIAR assumptions. It's clearly not true that agricultural

intensification necessarily leads to less pressure on natural resources. There are many situations where intensification has created opportunities for profit and greatly increased the pressure on natural resources.

CIFOR's role is helping to provide options for those people who depend upon forests and who are likely to be excluded from the benefits of globalization. Their numbers are likely to increase in the future.

International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)

ICRISAT serves the dry zone that includes large areas of South Asia and Sub-Saharan Africa and is home to about 500 million people. It addresses three major challenges facing agriculture and natural resources. First is improving the productivity of the subsistence crops, including coarse grains, sorghum and millet, and food legumes, groundnut, pigeonpea and chickpea. Second is protecting the assets and the resources of the poor farming communities. Third is building joint programs with other research institutes, including strengthening local institutional capacity and building partnership with communities, non-government organizations and the private sector.

ICRISAT research concentrates on natural resources, genetic resources, and socioeconomic and policy analysis. In the 1980s, ICRISAT devoted about 30 percent of its budget to research on natural resources. In 1997-98, the budget allocation reached about 50 percent.

Initially, scientists at ICRISAT studied factors affecting crop performance and farm management, and this was a subsidiary of crop improvement and development. In more recent years, work has expanded to large-scale land use planning and improving watershed management and the productivity of water catchments. ICRISAT is working with farming communities, NGOs, national agricultural research systems, specialized agencies, the advanced research institutes, and the private sector in India and Ethiopia to refine and improve research on large-scale watersheds in selected communities.

ICRISAT conducts joint research on crop moisture and soil nutrients, on new information tools, such as crop modeling, regional typology, GIS and wind erosion. Scientists from ICRISAT and ILRI are partners in studying and developing watersheds in the Ethiopian Highlands. ICRISAT scientists work with the national programs and the local communities to design and develop pilot watersheds in selected water catchments. They also work with the advanced research institutes and the farmers to test and refine crop simulation models, to study land use and to monitor resource degradation. In the coming years, modern sciences in crop, soil and hydrologic modeling will play an increasing role in the research agenda, especially on watershed management.

International Institute of Tropical Agriculture (IITA)

IITA has adopted a "benchmark approach" to natural resource management in order to deal with the diversity of agricultural systems in Sub-Saharan Africa. The approach is designed to efficiently target systems and carry out relevant research in diverse ecoregions.

There are six forest and savanna ecoregions in which benchmark research is conducted in West Africa. The areas have both biophysical and socioeconomic gradients that represent the ecoregion as a whole in order to be able to identify the causal mechanisms. The appropriate circumstances for successful agricultural research must also be present, including effective NARS partnerships and sufficient political stability.

Several benefits derive from the ecoregional research approach. Research planning shifts from institute mandates and IARC planning to ecoregional priorities and NARS-based planning. NARS scientists organize ecoregional and benchmark characterization, with technical backstopping from IARCs. NGOs and farmers organizations are represented in coordinating committees and participate in research activities. Collaboration based on institutional comparative advantage is developing.

The benchmark approach has positive implications for research prioritization. Once the initial investment has been made, the approach systematically targets and focuses research relevant to a broader area, and dynamics across gradients help predict development trends. Already, in the forest margin benchmark, biweekly seminars occur between IITA, the NARS partners, ICRAF and CIFOR. Each of these organizations participates in each other's planning sessions.

Currently, characterization of the larger ecoregion and identification of key extrapolation domains requires further use of the GIS capacity, and policy issues which cut across benchmark and ecoregional boundaries must be addressed both inside and outside the benchmark context in order to achieve development results. "Benchmark area" and "ecoregion" have become practical research tools that are helping to address and solve natural resource management problems. They are increasingly becoming a natural focus for all IITA research activities, including crop improvement and plant health management.

West Africa Rice Development Association (WARDA)

WARDA's story is about Bintu, a West African woman farmer, one of about 20 million who cultivate 6 million hectares of rice fields. It is also about WARDA developing a unique partnership with national research institutions to promote integrated natural resource management, and how WARDA opened its doors to strategic research alliances. The story is about rice researchers listening to Bintu, and working with her and her community.

WARDA is an international research center and regional association trying to help countries in one region achieve sustainable food security, while maintaining the natural resource base. WARDA's challenge is to move Bintu, a typical rice farmer in the region, from her traditional low-input practices to more productive practices that can take advantage of emerging food and agricultural markets.

WARDA is developing modalities that engender synergy between crop improvement and integrated natural resource management through strategic partnerships aimed at creating an enabling environment. Bintu already has improved *sativa* rice lines, but she does not have the necessary access to fertilizers, herbicides, and irrigation water. The answer must be sought by providing a more robust rice that is adapted to her environment and can support her in a harsh agricultural situation.

WARDA has applied science to create a new plant type that combines the best of *sativa* and the best of *Oryza glaberrima*, a rice species common in the region. Today there is a new African rice that contributes to integrated pest management, is resistant and/or tolerant to viruses and blasts, and also has weed-suppressing abilities. This new plant can reduce labor costs, and it is early-maturing, drought-resistant, and high-yielding.

WARDA has applied participatory research approaches with a coalition of partners; this has served as both a catalyst and facilitator. In this approach, the farmer plays the lead role in refining the technology and in its rapid dissemination. For Bintu and West Africa as a whole, this can result in land conservation, increased rice supply and greater income. However, such gains will require an enabling policy environment that encourages local rice markets to compete in the domestic, regional and international arenas.

Plenary Discussion

The plenary discussions following “New Institutional Modalities” presentations covered a broad range of issues:

- The NRM terminology has been applied to such a variety of activities that it is critically important that the meaning and scope of the term be more carefully defined. It is clear that the Centers are working on a wide variety of natural resource concerns in a highly differentiated way. Considerably greater attention should be paid in this research to the close relationship between poverty and environmental degradation.
- Farmer participatory breeding efforts carried out by WARDA and other Centers appear to be more effective than traditional adoption methods, but comparative analysis of the two methods should be carried out to verify this. Zimbabwe has assembled a wide array of national, local and international partners in testing such participatory approaches.
- The development of new rice varieties and cropping systems in West Africa raises the important question as to how these innovations can be properly introduced to farmer communities.

Impact Assessment and Evaluation (IAEG)

A subcommittee of the CGIAR was assembled in parallel session under the chairmanship of Mr. Ren Wang to discuss IAEG.

IAEG Chair, Jim Peacock, reported on the results of the IAEG's work on the adoption case studies, which were conducted in cooperation with the centers. The IAEG-sponsored project, "Factors Affecting the Adoption and Impact of CGIAR Innovations," had its genesis at the CGIAR impact assessment and evaluation workshop held at ISNAR in April 1996. The IAEG commissioned Professor Lee Sechrest of the University of Arizona to conduct a workshop in February 1997 on the use of case studies for impact assessment and for designing potential studies. Nine studies were developed at that workshop and a tenth study from ISNAR was later included to add an institutional aspect to the project. At a synthesis workshop in June 1998, results from the studies were discussed and an integrated analysis of the findings of the individual case studies was initiated. A synthesis of findings from the case studies provided the background for the discussions at the parallel session.

Mr. Peacock also briefed members on the overall scope of the IAEG's work and ongoing activities. Although the IAEG has had mixed success, it has helped bring about a wider acceptance of *ex post* impact assessment throughout the CGIAR. The IAEG's work program includes the Annual Report on CGIAR Impacts; studies on the Impact of CGIAR Crop Germplasm Improvement on Food Production, CGIAR Innovations on Poverty, and Natural Resources Management; a Workshop on Good Evaluation Practice; and incubator projects on biotechnology and science, institutional strengthening, national agricultural research systems and scientific capacity, post harvest technologies, integrated pest management, and biodiversity.

Following discussion, the members commended the IAEG for its excellent accomplishments and noted that:

- The IAEG's adoption studies provide significant insights into how the Centers' research outputs are put into practice.
- The linkage of IAEG's *ex post* evaluation work with TAC's overall priority setting and evaluation functions is a positive development, which will also enable the IAEG to be involved in *ex-ante* impact assessment. The CGIAR Logical Framework will be an important tool for impact assessment and evaluation.
- The IAEG's findings should be available in non-technical language to reach a wider audience, particularly decisionmakers.
- The Centers and NARS appreciate IAEG's collaborative approach. The IAEG should be congratulated for instilling an evaluation culture in the CGIAR centers.

External Reviews

A subcommittee of the CGIAR was assembled in parallel session to discuss the external reviews of CIFOR, ICRAF, and SGRP. The Group endorsed the recommendations of the External Program and Management Reviews for CIFOR and ICRAF, and noted the panel's excellent work. It also thanked the SGRP review panel for its analysis of the issues and endorsed the recommendations of the CGIAR subcommittee for follow up actions by the SGRP, Centers, and TAC (see adjoining boxes).

Finally, the Group recommended that TAC and the CGIAR Secretariat, in consultation with the Oversight Committee, address questions raised about the streamlined procedure used to discuss the external reviews at ICW 98 and the further development by TAC of guidelines for assessing science quality.

CIFOR

TAC member Elias Fereres presented an overview of the Review report, CIFOR's response, the TAC commentary, and the suggested actions to be taken by the CGIAR. The Review Panel Chair, Jeffery Burley, and CIFOR representatives F. Reifschneider, Board Vice-Chair, and Jeffrey Sayer, Director General, responded, followed by broader discussion. The chair of the parallel session, Roberto Lenton, summarized the conclusions and recommendations.

Comments and Issues

The members concurred with the overall conclusion that CIFOR has made remarkable progress in all aspects of its work since it was established in 1992 and that it had received a very positive review. There was consensus that the quality of CIFOR's social science research is high, and that it is allocating sufficient resources to its work in the social sciences.

While CIFOR's Board and management acknowledged the desirability of expanding research to the dry areas (for example, WANA), there was consensus that such work would require additional resources and should not be undertaken at the expense of work in the humid areas.

The members discussed the review panel's recommendations that CIFOR strengthen its Board in the management and finance areas, and noted CIFOR's plan to add up to 3 members to achieve the right mix of expertise.

Conclusions and Recommendations

The CGIAR:

- Strongly endorsed the Panel's recommendations and positive assessment of CIFOR, and thanked the Panel for an excellent report.
- Agreed with most of TAC's comments on the report.
- Expressed satisfaction with the responses from the Center Board and Management.
- Encouraged donors to strongly support CIFOR's excellent work in forestry research.

ICRAF

Mr. Elias Fereres, TAC member, presented an overview of the review report, ICRAF's response, the TAC commentary, and the suggested actions to be taken by the CGIAR. The Review Panel Chair, Jochen Heuvel, and ICRAF representatives Yemi Katerere, Board Chair, and Pedro Sanchez, Director General, responded, followed by broader discussion. The chair of the parallel session, Roberto Lenton, summarized the conclusions and recommendations.

Comments and Issues

The members concurred with the overall conclusion that ICRAF has successfully transformed itself into a major agroforestry research institution. They expressed serious concern that the ratio of restricted to unrestricted funding (65:35 percent) seriously limits ICRAF's flexibility to carry out its mandate. This is an urgent issue for CGIAR members.

There was no consensus on the Panel's recommendation that ICRAF undertake research in new areas such as vegetative propagation, and market development and strategic planning for value-added activities. It was noted with satisfaction that ICRAF's Board has taken steps to implement the Panel's recommendation on strategic oversight of its program.

Conclusions and Recommendations

The CGIAR:

- Recognized the Review Panel's positive assessment of ICRAF, endorsed its recommendations, and thanked the Panel for its excellent report. It largely supported TAC's comments on the Review report.
- Expressed serious concern about the low level of ICRAF's unrestricted funding and the lack of full recovery of overhead costs charged to projects, both of which threaten the viability of ICRAF's research programs.
- Recommended that the Finance Committee and the donor community collectively address the urgent systemwide issue of low levels of unrestricted funding and overhead recovery.
- Commended ICRAF for its outstanding achievements during the review period and urged donors to provide continued strong support to the Center.

SGRP

The discussion of the Review report was extensive and longer than originally anticipated. It was based on the TAC Chair's overview of the external Review report, the SGRP response, the TAC commentary, and the suggested actions to be taken by the CGIAR. Review Panel Chair Jaap Hardon, TAC Chair Don Winkelmann, and SGRP leader Geoffrey Hawtin responded to questions. The discussion, conclusions, and recommendations were summarized by Iain MacGillivray, who chaired the session on October 30, 1998.

Comments and Issues

The members reaffirmed the principle of unrestricted access to the CGIAR's genetic resources. The members also reaffirmed the need to harmonize the CGIAR's policies on access, sustainable use and benefit-sharing of genetic resources with the decisions eventually reached on these aspects through ongoing inter-governmental negotiations. The Members expressed caution regarding a CGIAR advocacy role in inter-governmental debates, and noted progress in the finalization of MTAs for distributing materials under the FAO-CGIAR agreements.

The fundamental issue facing the CGIAR is whether to:

- (a) focus its genetic resources activities essentially on improved management and coordination of the Centers' genebank operations, or
- (b) expand its activities to create regional networks to build a global system for the long-term conservation of the materials the CGIAR holds in trust.

The members agreed that both courses of action are important and that ways to integrate them should be developed.

While there was agreement that SGRP's functions are crucial to the CGIAR and should be continued, there was no clear consensus on the Review Panel's proposed alternatives for restructuring SGRP's governance.

Conclusions and Recommendations

- The newly established CGIAR Consultative Council should take into account the recommendations by TAC and the External Review Panel as it follows up on the System Review recommendations for the governance of genetic resources.
- The CGIAR should address the need for an operational structure to enable genebank managers at the Centers to work together and in relation to NARS.
- Two "keystone" type conferences should be convened to address issues of global vision, objectives, scope, strategy, and an operational structure for genetic resources activities, as well as to examine how CGIAR genetic resource activities could be organized. Participants would include Centers, the Inter-Center Working Group on Genetic Resources (ICWG-GR), FAO, NARS, CGIAR members, and other stakeholders.
- TAC should work with the Centers, including IPGRI and ICWG-GR, to develop a program for Group investment in improving the Centers' genebank facilities.

CGIAR Logical Framework

A subcommittee of the CGIAR was assembled in parallel session under the chairmanship of Ren Wang to discuss the CGIAR Logical Framework (Logframe). TAC Chair, Don Winkelmann, reported that under TAC leadership, a working group has been developing a logical framework for the CGIAR since 1996. The objective is to strengthen—in harmony with the approach taken by the OECD (Organization for Economic Cooperation and Development) Development Assistance Committee—an output orientation for planning, allocation, monitoring, and evaluation of the CGIAR research agenda. Mr. Uwe Nagel of the University of Berlin, an expert in the Logframe approach who has been facilitating the work, presented the proposed CGIAR Logframe to the parallel session.

The Group endorsed the implementation of the proposed CGIAR Logframe and noted that:

- The overall thrust of the proposed approach is appropriate, but the Logframe introduces new terminology for defining the work of the centers.
- The Logframe should not be mechanically implemented. It will have to evolve through experience.
- In implementing the Logframe, centers should ensure that their project descriptions provide clearly defined milestones and a time line.

Reports from CGIAR Cosponsors and Committees

The Group received reports and adopted the recommendations of the Cosponsors, and the Oversight, Finance, and Technical Advisory Committees. The Center Directors Committee submitted a written report.

Cosponsors

FAO representative Henri Carsalade presented the report of the CGIAR cosponsors—Food and Agricultural Organization of the United Nations (FAO), United Nations Environment Programme (UNEP), United Nations Development Programme (UNDP), and the World Bank.

The cosponsors have approved the recommendations of the TAC Chairman for a two-year extension of the terms of three members—Richard Harwood, United States; Magdy Madkour, Egypt; and Cyrus Ndiritu, Kenya. The Cosponsors will recommend three new nominations for 1999 with expertise in the basic sciences, natural resource management, and social sciences and policy development. Two of the vacancies were due to the departure of Justin Yifu Lin and Keiji Kainuma.

The cosponsors unanimously recommended the appointment of Hans Gregersen as the new chair of the IAEG, to replace Jim Peacock, whose term expires at the end of 1998. They thanked Mr. Peacock for his many contributions to the CGIAR. The Cosponsors will recommend a candidate for IAEG membership who has expertise in the biological sciences to fill the gap created by Mr. Peacock's departure. The cosponsors also recommended that the IAEG Secretariat remain temporarily at FAO in Rome, pending a final decision on the System Review recommendations.

The Cosponsors approved the 1999 program budgets for TAC and IAEG at \$2.3 million and \$1 million, respectively. With cosponsor financing at \$2.4 million, there remains a deficit of \$0.9 million, which could be covered by unused credits from 1998.

Oversight Committee

Andrew Bennett presented the report on behalf of the Oversight Committee, which met regularly during ICW98.

On the System Review, the Committee decided that it would not comment on the Panel's report in detail, but instead work with members to develop a consensus on how the CGIAR should proceed. Noting that the Panel's report contains many useful ideas, the Committee felt that the recommendations were not presented in a way that facilitated analysis and discussion. Initial reactions to the report were dominated by concerns about the recommendations for a central board and legal persona for the CGIAR. The Committee emphasized the importance of building ownership and consensus on the Panel's proposals instead of dwelling on the report's shortcomings.

The Committee recommended that the Group agree on the composition, mode of operation, and terms of reference for the follow-up mechanism or process before the end of ICW98. The Committee also emphasized the importance of a transparent and participatory follow up process.

On ICW98, the Committee welcomed the interactions with the CGIAR Secretariat on the revised structure of the meeting. The time allotted for plenary and parallel session discussions of the Panel's report seemed appropriate, although this inevitably affected the time available for the rest of the agenda. The Committee looked forward to the Centers' presentations on different aspects of natural resource management and encouraged other members to react to the Center presentations. The Committee also sought comments on the effectiveness of the parallel sessions on the external reviews of CIFOR, ICRAF and SGRP.

The Committee agreed that it would retain its existing membership until the outcome of the discussions on the Panel's recommendations on governance.

Finance Committee

The Group received a report from Michel Petit, Finance Committee Chair, on the expected 1998 financial outcome and 1999 financing plan. (*For details on the 1998 financing income and 1999 financing plan, see pages 54-55.*)

The Committee focused on strategic financial issues, in the context of the recommendations of the System Review Panel. Implementation of the Panel's recommendations—including retooling, new approaches, and new partnerships—will require increased or stabilized funding.

The uncertainty of the present global financial environment is a key factor in any CGIAR financial strategy and reinforces the necessity of attracting new resources. The prevailing low rates of inflation in OECD countries are projected to continue and could help contain cost increases for goods and services procured by the Centers. On the other hand, inflation rates in developing countries remain volatile, exposing centers to unexpected cost pressures in their local expenditures. At the present time, the CGIAR's strategy should take into account the continued volatility in the external financial environment.

The Finance Committee discussed the System Review Panel's emphasis on resource mobilization and new constituencies, including the development agencies, the private sector, and the philanthropic sector. The Committee stressed that the CGIAR must maintain its traditional sources of unrestricted funds; this requires continuing public awareness efforts in addition to emphasizing the CGIAR's basic strengths of high productivity and cost effectiveness. New sources of public funding should be tapped, but they may have targeted objectives for which funds are restricted. The increased financial participation of developing countries has only modest financial impact but provides an important signal of the South's co-ownership of the system. The CGIAR should develop system-level strategies to increase private sector participation, including philanthropic support. The Committee reiterated its full support for a CGIAR foundation and urged adoption of an appropriate governance mechanism that ensures ownership by the Group as a whole.

The Finance Committee noted that effective management of CGIAR finances requires implementation of appropriate Center management systems, new mechanisms for supporting strategic initiatives, and a new approach to financing inter-Center collaboration. The System Review Panel's recommendations on membership, funding and management of systemwide programs, long-term financing strategies, private sector funding raising, and other financing issues will require further study and follow up through the Consultative Council.

Technical Advisory Committee

TAC Chair, Don Winkelmann, reported on TAC's activities since MTM98 and new activities TAC will launch through 1999.

TAC expressed concern that external reviews, the only tool the Group has to assure accountability, are receiving less attention from the Group than has been customary. TAC requested that future external review results receive consideration by the Group commensurate with their importance to the System's oversight of its activities.

TAC has two strategic studies underway:

- An analysis of the efficiency of the ecoregional approach as a platform for efficient work in systemwide programs. This year TAC will initiate a review of eight of the nine systemwide programs structured around the ecoregional approach. The effort will be led by Ted Henzell, former TAC member and natural resources management expert. The findings will be presented to the Group at ICW99.
- An analysis of the International Agricultural Research Centers' relationship with NARS. The CGIAR invests more than 20 percent of its budget in strengthening NARS, which play a significant role in virtually every dimension of the CGIAR's work.

TAC is also working on two other strategic themes—developing the CGIAR's 2010 portfolio and managing partnerships.

TAC collaborated with the U.S. Agency for International Development USAID and the Centers to develop an inventory of Center activities relating to mitigation and adaptation to global climate change. The Centers have established a working group, which includes TAC, to provide an analysis based on that inventory.

Center Directors Committee

The Group received a written report from the Center Directors Committee (CDC).

On the issue of Intellectual Property Rights, the CDC discussed and endorsed the three papers prepared by IPGRI and SGRP in consultation with FAO:

- *Guidelines for the Designation of Accessions under the FAO Agreements*
- *Second Joint Statement of FAO and the CGIAR Centers on the Agreement Placing CGIAR Germplasm Collections under the Auspices of FAO*
- *Material Transfer Agreements (MTAs)*

The CDC also endorsed the establishment of an Intellectual Property Rights Advisory Service to be based at ISNAR.

On the new Gender and Diversity Program, the CDC agreed to be represented on the program's board. The Centers will contribute to the funding of the transition phase to ensure continuity, provided full funding of the program is assured and the coordinating unit is established in a developing country.

On PARC and Future Harvest, the CDC expressed strong appreciation for the work of PARC and the progress made by Future Harvest.

CGIAR Partnership Activities

The Group received reports on partnership efforts from the Global Forum Steering Committee and the NGO Committee.

Global Forum Steering Committee

R. S. Paroda, Chair of the Global Forum Steering Committee, presented a report on the work of the Global Forum since its last meeting in conjunction with MTM98. GFAR has made significant progress in promoting the participation of different constituencies, formulating its work program, making the two Secretariats operational, and establishing a 13-member steering committee.

GFAR's work program has five priority areas: information and communication; genetic resources, biotechnology and intellectual property rights; natural resource management and agroecology; international cooperation on research outside the CGIAR mandate; and strengthened relations with regional and subregional organizations.

The Global Forum Steering Committee (GF-SC) Secretariat is preparing a strategic agenda for the GFAR 2000 meeting in Dresden, Germany, in conjunction with MTM2000. The GF-SC is also working with the Electronic Global Forum on Agricultural Research (EGFAR) to develop an effective global knowledge system for food security, as recommended by the System Review Panel.

Dr. Fernando Chaparro, the first NARS Executive Secretary, will spearhead efforts by the NARS Secretariat to strengthen NARS regional and sub-regional for a.

GFAR acknowledged the CGIAR's role in strengthening international partnerships in agricultural research (including forestry and fisheries) and in the formation of GFAR. The GFAR can play a facilitating role in the implementation of the System Review Panel's recommendations and help establish new partnerships that will benefit NARS and the regional and sub-regional organizations as well as the CGIAR.

NGO Committee

Chair Miguel Altieri presented a report on the NGO Committee's natural resources management consultation held prior to ICW98.

Given the importance the CGIAR has given to natural resources management as a fundamental research pillar, and the comparative advantage that many NGOs have in natural resource management, agroecology, and sustainable agriculture, the NGOC convened a consultation involving NGOs, TAC, International Agricultural Research Centers, Universities, and National Agricultural Research Institutes. The goal was to initiate a dialogue and define a natural resources management strategy that is congruent with the CGIAR's mission and responsive to the 1.2 billion resource-poor households in the developing world.

The consultation suggested guidelines to the CGIAR in three main areas:

- **Knowledge Base.** The science of ecology should be the scientific paradigm that provides the principles to manage natural resources in a sustainable manner. Modern science as well as local sources of traditional knowledge can contribute to this ecological paradigm. The fundamental ecological principles include: biodiversity, resource flows, productivity, and ecosystem resilience.
- **Methodology.** Certain methodological mechanisms, such as participatory research and development methods, must be in place so that technologies reach poor farmers. Partnerships are also effective in implementing concrete large-scale and long-term programs that benefit poor farmers. Decentralized approaches are needed to share and disseminate innovations from both traditional and modern science.
- **Links to Rural Development.** Keys to improving the livelihoods of poor farming communities include effective social organization, community empowerment, access to land, and enabling policies. Policy research must identify alternative policy interventions that will lead to poverty alleviation, food security, and sustainable natural resources management.

Biotechnology and Proprietary Science: Progress since MTM98

The deliberations and discussions at MTM98 reaffirmed the scientific credibility of the System. At ICW98, the Group further refined ways in which the CGIAR might advance its mission through greater use of biotechnology.

Report of the Genetic Resources Policy Committee

M. S. Swaminathan presented the report of the Genetic Resources Policy Committee (GRPC).

In response to the Group's request that the Center Board Chairs and Directors General refine and clarify documents related to genetic resources, the Committee presented three documents for consideration at ICW98:

- *Guidelines for the Designation of Accessions under the FAO Agreements;*
- *Material Transfer Agreement (MTA); and*
- *Second Joint Statement on the Agreement Placing CGIAR Germplasm Collections Under the Auspices of FAO.*

IPGRI, as the lead center of the Systemwide Genetic Resources Programme, consulted with the Centers that maintain designated germplasm and worked closely with FAO, especially on the *MTA* and the *Second Joint Statement*. The three documents have been endorsed for systemwide use by the Committee of Board Chairs, Center Directors Committee, and GRPC, and approved by FAO. The documents will be provided to the next meeting of the FAO Commission on Genetic Resources for Food and Agriculture.

The Committee recommended that the SGRP should be strengthened and that IPGRI should explore the development of a clearinghouse or database of national policies and laws regarding genetic resources. The Committee also urged that a central advisory capacity on biotechnology and legal issues be established soon.

The Committee developed and endorsed a CGIAR policy statement on the implications of the gene technology preventing seed germination for consideration by the Group:

"The CGIAR will not incorporate into its breeding materials any genetic systems designed to prevent seed germination. This is in recognition of concerns over potential risks of its inadvertent or unintended spread through pollen; the possibilities of the sale or exchange of inviable seed for planting; the importance of farm-saved seed, particularly to resource-poor farmers; potential negative impacts on genetic diversity; and the importance of farmer selection and breeding for sustainable agriculture."

Plenary Discussion

The Group accepted the GRPC's recommendation to endorse the Guidelines for the *Designation of Accessions under the FAO Agreements*, a new *Material Transfer Agreement*, and a *Second Joint Statement on the Agreement Placing CGIAR Germplasm Collections under the Auspices of FAO*.

The Group endorsed the Centers' decision to establish a central advisory unit at ISNAR, which will be reviewed in two years. Work on the *Guiding Principles for the CGIAR Centers on Intellectual Property Rights and Genetic Resources* is continuing.

The Group accepted the GRPC's recommendation that the CGIAR adopt a statement concerning the “terminator genes technology.” Noting that the CGIAR's science exists to serve the poor, the Group decided that:

“The International Agricultural Research Centers supported by the Consultative Group on International Agricultural Research system, which are engaged in breeding new crop varieties for resource poor farmers, will not incorporate into their breeding material any genetic systems designed to prevent seed germination.”

In conclusion, the Chairman noted that the GRPC will continue its work until the Group addresses governance issues at MTM99.

CGIAR Financing

1998 Funding Update

The Group received a report from the Finance Committee Chair on the expected 1998 financial outcome. At the aggregate level, the 1998 financial outcome of \$335-340 million is in line with the \$345 approved at ICW97. Thirteen centers will be fully funded in 1998. At the individual level, several members including Norway made exceptional efforts in 1998, compared to financing plan expectations. Lagging disbursements, however, continue to be cause for concern.

The 1999 Financing Plan

TAC reviewed the Centers' 1999 financing plans to determine their consistency with the Centers' medium-term plans, conformity with the 1999 research agenda, and implications for CGIAR priorities and strategies. TAC concluded that the plans are generally consistent with the Centers' proposals endorsed at MTM98, but TAC remains concerned about the persistent relative underinvestment in livestock research and water management research, and about shifting shares in the commodity portfolio compared to endorsed levels.

The Group adopted the Finance Committee's recommendations on the financing plan for the 1999 research agenda. Center financing plans were endorsed at identified levels, and an overall CGIAR financing plan of \$340 million was approved.

Regarding the allocation of the World Bank's contribution of \$45 million, the Group adopted the following recommendations:

- \$33.5 million will be used as matching funds to centers, as advised at MTM98. This follows center financing plan projections. Eighty percent of the matching amount will be disbursed in January 1999. As in the past, any adjustment due to changes in 1999 center funding outcomes will be made at MTM99, when the Group will decide on the remaining 20 percent.
- \$0.4 million will support systemwide programs at ICRAF.

The remaining World Bank funds were earmarked as follows:

- \$1 million for CGIAR partnership committees.
- \$5 million to support strategic research agenda initiatives.
- \$5.1 million to strengthen the CGIAR's reserves.

The Group urged members to give special attention in their funding allocations to the needs of the water and livestock sectors, to disburse funds as quickly as possible, and to provide funds with as few restrictions as possible. The Group will review updated 1999 center financing plans at MTM99.

New Funding Modalities

The Group heard from two developing country representatives about innovative financial approaches that could have relevance for other developing country members.

Colombia

Colombia's Vice Minister of Agriculture, Luis Arango-Nieto, described the advantages of Colombia's strong commitment to the CGIAR. The relationship between Colombia and the CGIAR began in 1967 when the Colombian government invited CIAT to establish its headquarters in the country. In 1987, the Colombian government signed an agreement granting CIAT permanent residence. In 1994, the Colombian Government decided to strengthen the relationship with the CGIAR through an investment of \$1 million annually. In 1998, the Government of Colombia continued its pioneering role by expanding its annual contribution to \$3 million for the next five years.

Colombia considers its contribution to the CGIAR to be an investment with significant social yield. CIAT's agenda complements the agenda of its national research system. Thus, Colombia has become a new type of associate of the CGIAR because it can be considered an investor and at the same time a client of the system.

The Colombian government has worked to enhance multilateral cooperation on agricultural research at both regional and global levels. In addition to its active membership in the CGIAR, Colombia played a major role in the establishment of the Regional Forum in Latin America and the convening of the Global Forum on Agricultural Research. These are important milestones in the overall effort to promote and strengthen cooperation in agricultural research in Latin America.

Kenya

Romano Kiome, Assistant Director of the Kenyan Agricultural Research Institute (KARI), told the Group about KARI's novel way of investing in international agricultural research while at the same time enhancing its linkages and collaboration with the CGIAR.

In hosting two CGIAR centers, ILRI and ICRAF, Kenya contributes about \$10 million worth of land as well as generous infrastructural facilities and diplomatic treatment, including exemption from various local taxes. In 1995, the Kenyan government hosted the CGIAR's mid-term meeting and became a CGIAR member.

For many developing countries, membership in an international organization like the CGIAR can have a significant impact on budgetary priorities. Due to economic and fiscal constraints, Kenya has not been able to provide financial contributions to the CGIAR from its internal funding sources. Presented with an opportunity to meet its commitment to support international agricultural research, KARI decided to utilize proceeds from World Bank/IDA loans and credits to support collaborative CGIAR-KARI programs.

KARI's use of borrowed funds for its financial participation is a strong demonstration of its commitment to the CGIAR. The use of the World Bank/IDA credit underlines Kenya's realization that its contribution to the CGIAR is a sound investment and there are considerable benefits to participating in the CGIAR's decision making process.

Plenary Discussion

Speaking on behalf of Switzerland and other northern members, Paul Egger commended Colombia's farsighted vision in investing in agriculture through the CGIAR agenda. Sally Shelton (USAID) echoed his comments, emphasizing that these major efforts by developing countries provide strong incentives for the United States to maintain its contribution level. On a similar note, KARI's innovative financial approach won praise from ILRI and ICRAF.

Trends in Agricultural Research Financing

Philip Pardey of IFPRI made a presentation on trends in agricultural research expenditures and financing, and the implications for CGIAR's research and long-term strategies.

Preliminary evidence shows that the overall average rates of return to agricultural research are about 70 percent, significantly higher than the rates of return on other investments in developing countries. The rate of return is higher when research is conducted in more developed countries or is adopted in less developed countries. There is no statistically significant difference in the rates of return between African, Asian, Latin American, and International Agricultural Research Centers' research.

At the global level, the growth of public spending for agricultural research has slowed, but there has not been a reduction. Public spending for agricultural research as a percentage of agricultural gross domestic product has increased in developed countries, but decreased in sub-Saharan Africa and other poor developing countries. Across the 22 OECD countries in the study, the declining relative political and economic importance of agriculture, combined with an increase in new issues—from environment to food safety and nutrition—has affected the research agenda in every country.

Setting the 2000 Research Agenda

The TAC Chair gave a preliminary report on research directions for the year 2000. The Group endorsed the thrust of the System Review Panel's recommendations on the CGIAR's scientific agenda and directions concerning integrated gene management and integrated natural resources management. This provides a framework and strategic direction for the future, which the Centers and TAC will incorporate into their proposals.

The Group will consider and make decisions on the 2000 research agenda at MTM99. Center program and budget proposals for 2000 will be viewed in the context of the 2000 - 2002 medium-term plans. TAC will compare the proposals to ensure their consistency with the broad strategic directions endorsed by the Group at MTM 97, as well as those suggested by the System Review Panel. Centers will be asked to submit their proposals by the first week of March 1999 for consideration at the next TAC meeting. TAC plans to work on the basis of a projected funding level of \$345 million for the 2000 research agenda. Center proposals for the 2000 research agenda should incorporate the vocabulary of the CGIAR logical framework. The logical framework should be operational in 2001.

Following discussion in plenary, the Group commissioned the preparation of the 2000 research agenda by the Centers.

Future Meetings

Speaking on behalf of the Chinese government and the Ministry of Agriculture, Dr. Ma Shiqing said China is seeking to strengthen collaborations with the CGIAR by offering to host MTM99, increase its contribution to the CGIAR, effective next year, and set up a licensing unit at the Chinese Academy of Agricultural Sciences to coordinate and facilitate China-CGIAR cooperation. The Group applauded China's active involvement and participation in the CGIAR and accepted China's invitation to host MTM99. The Group noted that the CGIAR and the Chinese Academy of Agricultural Sciences, together with more than fifty Chinese institutes, have collaborated on sixty research projects over the past two decades.

Following are the dates and locations of future CGIAR meetings:

1999 MTM	May 24 - 28	Beijing, China
1999 ICW	Oct. 25 - 29	Washington, DC
2000 MTM	May 22 - 26	Dresden, Germany (in conjunction with the Global Forum)
2000 ICW	Oct. 23 - 27	Washington, DC
2001 MTM	May 21 - 25	To be determined
2001 ICW	Oct. 29 - Nov. 2	Washington, DC

Other Business

Coconut Germplasm Agreement

In the spirit of global collaborations and the CGIAR's genetic resources discussions, the Group applauded the signing of an agreement by the Government of India, IPGRI, and the Food and Agricultural Organization of the United Nations (FAO) to place coconut germplasm collections under the auspices of FAO. The coconut germplasm collection is the result of the work of the International Coconut Genetic Resources Network (COGENT), which is developing an international genebank with five regional components.

Chairman's Summation

by
Ismail Serageldin

Thanks

Well, Ladies and Gentlemen:

We have reached the end of another ICW. And do I hear sighs of relief around the table? Why not? This was, indeed, a grueling Centers Week, as well it should have been, because in the course of five days we sought to determine our role, design our strategy, and plan for our potential impact in the approaching new millennium. We did so in response to the twenty-nine themes and 126 specific recommendations contained in the third System Review of the CGIAR.

On top of that, we dealt with a number of other business matters, and heard some excellent presentations from Center directors appropriately grouped under the theme of natural resources management. I will leave the summary of decisions on agenda items other than the System Review for the customary End of Meeting Report which you will be able to pick up as you leave this meeting.

But before dealing with the System Review, let me thank all those who contributed to making this meeting both interesting and substantive:

- Bank President Jim Wolfensohn for his unprecedented participation in our opening session,
- The System Review panel, for their commitment and dedication, and for providing us with a compass to chart our new directions,
- All members of the CGIAR System who participated in this week's rich and lively discussions,
- The chairs of the three working groups who faced exceptional challenges with skill and fortitude,
- The Bank-Fund conference staff who worked so hard to provide us with the logistics and setting for decision-making,
- The interpreters who helped us understand each other, and
- Alexander von der Osten and all members of the Secretariat staff who, as usual, worked superbly as a team.

Let me, as well, extend the felicitations of the CGIAR to Willem van Vuure, who is about to retire from his position as Executive Secretary of EIARD. He was a familiar figure at CGIAR meetings from 1985 to 1995, as a member of the Netherlands delegation. We thank him for his support, and wish him the very best in his new life.

A round of applause to all concerned, please.

System Review

The System Review Panel has completed its task. They gave us a ringing endorsement of past achievements, and provided us with recommendations with which to construct our own path to the future. They made it very clear that they were not dictating prescriptions to us. They expected us to shape our own future. That is our obligation.

We will not be asking the System Review panel to redraft or reshape their recommendations, following the discussions at ICW. They will, however, be engaged as necessary in connection with the editing of their report into a version for broader public distribution.

The panel's powerful endorsement of the CGIAR is already in international circulation. Mr. Wolfensohn has conveyed to the Bank's board of directors the Panel's view that "investment in the CGIAR has been the single most effective use of official development assistance (ODA), bar none. There can be no long-term agenda for eradicating poverty, ending hunger, and ensuring sustainable food security without the CGIAR." This excerpt and others have been reported in a journal prepared in New York for the Group of 77 and in other media, particularly in the South.

Consultative Council

The responsibility for any further work in connection with System Review recommendations now rests with us.

We have made an important start here at ICW. The three working groups (covering Science, Partnerships, and Governance and Finance) have made important headway in their consideration of the System Review recommendations. On some, we could agree. On others, we need more discussions. So it was essential that we agree on a mechanism for follow-up. We agreed on the following:

- There will be a Consultative Council, broadly representative of the System, which I will convene. I want to assure you that I will personally devote my determined attention to the System Review follow-up, no less than I did in preparations for the CGIAR Ministerial-level Meeting organized by the CGIAR at Lucerne in 1995.
- Just as at that time, we called on ad hoc groups for reports (recall the Winkel Panel, the Conway Panel, and other groups), I will also seek comparable contributions from the current committees and *ad hoc* groups of the System, as and where needed.
- These will be fed into the formal deliberations of the Consultative Council—in January and possibly in March. A report, with framed decision-points, will therefore be available for study by all of you, well before we meet in Beijing.

The Consultative Council will replace the *ad hoc* stakeholder consultations that I have convened from time to time. Its primary responsibility will be to advise me on the preparation of adequate action-proposals for consideration at MTM99. Meetings of the Consultative Council will be open to all members of the System who wish to attend. As the name implies, its mode and tasks will be entirely consultative. Decisions will be taken in plenary and only in plenary at MTM99. Let me move on, now, to my summation of decisions.

Mission Statement, Role, and Culture

The new mission statement emphasizing food security and poverty eradication proposed by the

System Review was adopted. It reads as follows:

To contribute to food security and poverty eradication in developing countries through research, partnership, capacity building, and policy support, promoting sustainable agricultural development based on the environmentally sound management of natural resources.

Each center could follow up by adopting a congruent mission statement. The centers must continue to function as global centers of frontier science, creating strong synergies across the system, and working through creative partnerships to bring advanced science and technology as well as traditional scientific knowledge to bear on the needs of the world's poor.

Science

The main thrusts of the System Review recommendations in the area of science concerned integrated gene management and integrated natural resources management. These thrusts were broadly endorsed.

In keeping with the established rhythm of our meetings, the System Review's recommendations on science issues will now feed into the responsibilities of TAC and the Centers as they prepare the research agenda for the year 2000. That agenda will be presented to us at MTM99.

Partnerships

ICW98 endorsed the goals and principles embodied in the Panel's recommendations on broadening CGIAR partnerships. The Group agreed to design, adopt and implement more effective consultative processes, both within the System and with external partners. This will include partnership arrangements with a large number of institutions seeking to work with African research organizations. We are fully committed to supporting African initiatives.

In other respects, the existing internal institutional arrangements (such as the NGO Committee and the Private Sector Committee) would continue. The Global Forum on International Agricultural Research will be supported as an important device for external partnerships.

Governance and Finance

The strategic thrust of the System Review recommendations relating to the CGIAR's governance and financing arrangements was endorsed, but further deliberation is required in a number of areas. Items on which agreement was reached include:

- streamlining evaluation processes;
- linking IAEG more closely with TAC;
- improving the efficiency of TAC;
- the importance of a continued, prominent role for the World Bank in the CGIAR;
- improving long-term financial prospects; and,
- improving the efficiency of decision making in the CGIAR (involving both structures and processes of decision making).

That, under the various headings, represents the consensus we reached. There are a number of issues on which consensus remains to be reached. These include questions relating to patenting, streamlined decision-making, and the suggestion that the CGIAR should acquire a legal persona.

The Secretariat will comb the ICW98 transcripts, and compile a full list of outstanding issues. This list will be the heartland of deliberations by the Consultative Council and its preparations for decisions at ICW98.

Science in a Changing World

Ladies and Gentlemen,

The nuts and bolts of discussion should not divert our attention from the broad sweep of science-based proposals in the System Review. These invite us to benefit from and provide leadership to the great scientific adventures now unfolding. We all know that Senator Glenn was on board yesterday's space shuttle. He was not alone. The shuttle's powerful payload included 1000 soybean seedlings immersed in water, for experiments on microgravity and gene transfers. This may be too futuristic for us. But it suggests the directions in which the world is moving.

This does not mean that we should turn our back on downstream research. Lowell Hardin's moving story continues today as shown in ICLARM's video (screened here yesterday) which showed us how changes in pond management can bring food, income, and self-esteem to poor villagers. WARDA's video, similarly, showed how Bintu benefited from her rice. These illustrations should also have demonstrated that we dare not lose any opportunity to bring cutting edge science to bear on the needs of the very poor. The cutting edge is on the move!

We live in a time of unmatched scientific innovation. For the biological sciences, it is particularly exciting, similar to what physics experienced in the glorious 40 years between 1905 and 1945, when all the concepts were changed, from cosmology to quantum physics, from relativity to the structure of the atoms. Today we are decoding the very blueprints of life. We are learning to manage the deployment and expression of genes. Like physics in the first half of this century, we are confronted by profound ethical and safety issues, complicated by the new issues of proprietary science. We must have the courage of our convictions as well as the wisdom to know how and where to act.

As we approach the next millennium, some observers fear that scientific discoveries seem to raise as many questions as they answer. Why not? That condition is not to be deplored but to be enjoyed. The realm of scientific discovery is not only a realm of answers, but one of questions. Perhaps modern researchers are not discoverers at all but rather what Daniel J. Boorstin called "questers" whose achievements are measured not in the finality of answers, but in the fertility of questions.

But remember: our quest is motivated by our deep commitment to transform agricultural production in the world for the benefit of the poor and the environment. By helping the world to gain a better understanding of the complex interactions among physical, biological, and social systems, research can empower the international community to create a new agricultural regime that is development-oriented, sustainable, and fair. That is the challenge of today... and tomorrow.

Personally Speaking

Ladies and Gentlemen:

From the issues which energized ICW98, let me move to something more personal. Many of you have spoken to me during this week, and yes, I am a candidate for the position of Director-General of

UNESCO, to succeed Federico Mayor who is retiring next year. However, that election is only in November 1999, so I will be with you in laying the foundations for our new beginning in the year ahead, and who knows, perhaps for much longer, should the votes favor another candidate.

I am honored that the government of my country, Egypt, has nominated me for this position, and that the heads of state of the African countries endorsed my candidacy at their summit in June 1998. I hope to earn the support of other governments. However, I consider myself the candidate of the stakeholders of UNESCO, those committed to its ideals, women and men of vision such as yourselves, who till the fields of science, education, culture and communications. I hope they will see me as their candidate.

The founders of the organization who drafted UNESCO's charter had the prescience to create an institution devoted to peace, justice and human dignity; and they identified clearly and lucidly the critical importance of education, science and culture in meeting the challenges of this world. Half a century later, despite the enormous advances in science, literacy and education, and the end of the cold war which had distorted international relations, the challenges remain formidable. Today, on the eve of the third millennium, the world needs a strong and vibrant UNESCO more than ever. The nobility of UNESCO's mission and purpose, as described in the charter of the organization, inspires and challenges me. I am convinced, too, that should the future take me to UNESCO, I will be continuing to serve the CGIAR and its clients, and will be your most ardent advocate in the various fora of science, education, and culture. It would mean a lot to me to know that this candidacy meets with your approval and benefits from your support.

Conclusion

But enough said about myself. This has not been a meeting about me, or about you, or even about the scientists who labor in CGIAR centers. This is a meeting about the farmers of the developing world and their partners, developing country consumers. How will we serve them better? That is the question.

So I tell you: this has been a meeting about how science can open the way to vistas of progress in the new millennium, but only if science is fully and effectively mobilized. This has been a meeting about how the CGIAR will participate in that mobilization. Remember, again, the stirring words of the System Review. Remember them again and again: "Investment in the CGIAR has been the single most effective use of ODA bar none." That's not investment in heavy-yielding, quick-return, miracle funds. That's investment in science for the poor.

Lowell Hardin talked the other day about the magic of the CGIAR. The dynamic of this Group has changed but the magic remains powerful and permanent. To know that Colombia has increased its contributions above those of many richer countries is part of the magic. So is the fact that Kenya has so much confidence in the CGIAR that it borrowed World Bank funds to invest in the CGIAR. We as a System can never let down those who believe in the CGIAR. We owe them our response. We owe them our support. We owe them our unremitting support.

My friends, the System Review has given us a compass. Let us use it to chart directions that will empower the weak and endow the poor, so that the weakest in society can soon reach out to what is now beyond their grasp. I wish you safe journeys home.

Thank you.

Annexes



CGIAR 1998
International Centers Week

ICW98 Agenda

Monday, October 26 - Friday, October 30
Washington, DC

1. Opening Session

- i. Chairman's Opening Statement
- ii. Discussion
- iii. Chairman's Announcements
- iv. Adoption of the Agenda

2. CGIAR System Review

- i. Presentation of the Review's Overall Conclusions
- ii. Discussion
- iii. Recommendations on Mission and Strategy
- iv. Discussion
- v. Recommendations on Science
- vi. Discussion
- vii. Recommendations on Governance and Finance
- viii. Discussion
- ix. Conclusions on Implementation and Next Steps

3. Centers Forum - New Opportunities in Natural Resource Management

- i. New Approaches
- ii. New Tools
- iii. Policy Issues
- iv. New Institutional Modalities

4. CGIAR Research Agenda

- i. 2000 Research Directions
 - Presentation by the TAC Chair
 - Discussion
- i. Financing the 1999 Research Agenda
 - Report from the CGIAR Finance Committee (FC)
 - Discussion
- iii. Modalities of Funding
 - Presentation by KARI
 - Presentation by Colombia
 - Discussion

- iv. CGIAR Logical Framework
 - Presentation by TAC (in parallel session)
 - Discussion (in parallel Session)
- v. Trends in Agricultural Research Expenditure and Financing
 - Presentation by IFPRI

5. Recommendations from Cosponsors, CGIAR Committees and Partnership Committees (Committees will provide reports of their activities in written form. No discussion will be scheduled unless requested by CG members. If required, discussion of committee matters will take place in the order shown below.)

- i. Cosponsors
- ii. Oversight Committee (OC)
- iii. Finance Committee (FC)
- iv. Technical Advisory Committee (TAC)
- v. Impact Assessment and Evaluation Group (IAEG)
- vi. Genetic Resources Policy Committee (GRPC)
- vii. Committee of Board Chairs (CBC)
- viii. Center Directors' Committee (CDC)
- ix. Private Sector Committee (PSC)
- x. NGO Committee (NGOC)
- xi. Global Forum/NARS Steering Committee

6. Biotechnology and Proprietary Science – Follow up from MTM98

- i. Progress Report
- ii. Discussion

7. Evaluation (in parallel session)

- i. External Review of CIFOR
- ii. External Review of ICRAF
- iii. Stripe Review of Genetic Resources Policy (SGRP)
- iv. Presentation and Discussion of Adoption Case Studies (IAEG)

8. Presentation of Awards

- i. CGIAR King Baudouin Award
- ii. Chairman's Science Awards
 - Promising Young Scientist Award
 - Outstanding Local Scientist Award
 - Outstanding Local Scientific Support Staff Award
 - Outstanding Scientific Partnership Award
- iii. Brady Award

9. Other Business

10. Chairman's Closing Remarks

List of Documents

DOCUMENTS ISSUED PRIOR TO THE MEETING

Document Number	Document Title
ICW/98/01	Administrative Arrangements
ICW/98/02/Rev.1	Draft Agenda
ICW/98/03/Rev.2	Schedule of Events
ICW/98/04/Rev.1	List of Documents
ICW/98/05	Future CGIAR Meetings
ICW/98/06	CGIAR System Review Report
ICW/98/07	Genetic Resources Follow Up from MTM98–Updated Documents
ICW/98/08	Financing of the 1999 Research Agenda
ICW/98/09	Report of the IAEG
ICW/98/10	1999 Financing Plan–TAC Observations
ICW/98/11	Summary Report of the CGIAR-NGO Committee on the Natural Resource Management (NRM) Consultation
ICW/98/12	IAEG–Factors Affecting the Adoption and Impact of CGIAR Innovations. Executive Summaries of Individual Case Studies
ICW/98/13	IAEG–Factors Affecting the Adoption and Impact of CGIAR Innovations: A Synthesis of Findings
ICW/98/14	Report on the CGIAR System Review–Comments of the Private Sector Committee
ICW/98/15	CDC Commentary on the Report of the CGIAR System Review
ICW/98/16	GRPC Commentary on the Report of the CGIAR System Review
ICW/98/17	TAC Chair’s Report
ICW/98/18	Report of the CDC
SDR/TAC:IAR/98/17	First External Review of the Systemwide Genetic Resources Program (SGRP)
SDR/TAC:IAR/98/17/Add.1	Addendum to SGRP External Review Report
SDR/TAC:IAR/98/15	Second External Review of ICRAF
SDR/TAC:IAR/98/15/Add.1	Addendum to ICRAF External Review Report
SDR/TAC:IAR/98/5	First External Review of CIFOR
SDR/TAC:IAR/98/5/Add.1	Addendum to CIFOR External Review Report
SDR/TAC:IAR/98/19.1	Proposed Logical Framework for the CGIAR System

OTHER DOCUMENTS DISTRIBUTED AT THE MEETING

- Chairman's announcements. October 26, 1998.
- Chairman's Awards. October 29, 1998.
- Chairman's Closing Statement. October 30, 1998.
- Welcoming remarks by James D. Wolfensohn, President, World Bank Group. October 26, 1998.
- Global Forum on Agricultural Research : report presented to the CGIAR at ICW98. October 30, 1998.
- CGIAR System Review: Comments on the report and recommendations by the working group on Science. October 28, 1998.
- CGIAR System Review: Comments on the report and recommendations by the working group on Governance and Finance. October 26 and 27, 1998.
- CGIAR System Review: Comments on the report and recommendations by the working group on Partnerships. October 27, 1998.
- Contribution to the third system review for West Asia and North Africa Region (WANA). October 30, 1998.
- Contribution to the third system review from a Latin American perspective. October 30, 1998.
- Investing in International Agricultural Research: lessons from Kenya. Paper presented by R.M. Kiome and C. G. Ndiritu. October 30, 1998.
- Parallel Session I: external reviews of CIFOR, ICRAF and SGRP. Report. 29-30 October. 1998.
- Parallel Session II: CGIAR logical framework and IAEG. Report. October 29, 1998.

The above documents are available on the CGIAR website:

<http://www.worldbank.org/html/cgiar/publications/icw98/icw98.html>

List of Participants

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October 28, 1998

CONSOLIDATED COMMENTS OF WORKING GROUPS ON THE RECOMMENDATIONS OF THE SYSTEM REVIEW REPORT - ICW98

RECOMMENDATIONS OF THE SYSTEM REVIEW	WORKING GROUP COMMENTS
<p>RECOMMENDATION 1</p> <p>The Panel recommends that the CGIAR's current mission statement—which is to contribute, through research, to promoting sustainable agriculture for food security in developing countries—be amended to read:</p> <p style="padding-left: 40px;">To contribute to food security and poverty eradication through research promoting sustainable agricultural development based on the environmentally sound management of natural resources. This mission will be achieved through research leadership, partnerships, capacity building, and policy dialogue.</p> <p>We also recommend that each Center in the System modify its own mission statement to be consistent with the amended mission of the CGIAR. Center mission statements should be specific and focused enough to allow evaluation of the performance of each Center.</p>	<p>WG1: [Proposed CGIAR Mission:]</p> <p style="padding-left: 40px;">To contribute to food security and poverty eradication, in developing countries, through research, partnership, capacity building and policy support, promoting sustainable agricultural development based on the environmentally sound management of natural resources.</p> <p>Each Center in the System should modify its own mission statement to be consistent with the amended mission of the CGIAR. Center mission statements should be specific and focused enough to allow evaluation of the performance of each Center.</p> <p>WG3: The Mission Statement. Agreed.</p> <ul style="list-style-type: none"> • Concluded that it should include a reference to —‘ in developing countries and in countries in transition’
<p>RECOMMENDATION 2</p> <p>The Panel recommends that IARCs strive to serve as global Centers of frontier science and technology for sustainable food security, serving as a bridge that brings advanced science and technology to bear on the needs of the world's poor. They should become resource centers on frontier technologies, policy research, sustainable use of natural resources, capacity building, and networking. They will need to enhance their symbiotic scientific links with NARS, ARIs, the private sector, and NGOs in industrialized and developing countries. At the same time, they should help develop and disseminate environmentally sensitive technologies based on appropriate blends of traditional and modern methods, while placing more emphasis on work in low-potential areas.</p>	<p>WG1: [Proposed for CGIAR endorsement:]</p> <p>“The Panel recommends that IARCs strive to serve as global Centers of frontier science and technology for sustainable food security, serving as a bridge that brings advanced science and technology to bear on the needs of the world's poor. They should become resource centers on frontier technologies, policy research, sustainable use of natural resources, capacity building, and networking. They will need to enhance their symbiotic scientific links with NARS, Global Forum ARIs, the private sector, and NGOs in industrialized and developing countries. At the same time, they should help develop and disseminate environmentally sensitive technologies based on appropriate blends of traditional and modern methods, which address the needs of the poor specifically including those in less favored areas.”</p>

	<p>#2 WG 3:Global centres. Agreed.</p> <ul style="list-style-type: none"> • Greater emphasis should be given to links and partnerships with NARS – ‘especially NARS and with ARIs etc.’
<p>RECOMMENDATION 3</p> <p>The Panel recommends that IARCs concentrate on topics relevant to improving sustainable food security and the generation of greater opportunities for rural income. This dual strategy will require:</p> <ul style="list-style-type: none"> • greater inter-Center collaboration; • new methods of increasing System synergy; • new and expanded partnerships; • IARCs, in conjunction with regional and sub-regional organizations, acting as neutral convenors of all the actors in the research-development continuum in each region, while providing access to assets and resources and filling gaps by providing what others cannot do as competitively; and • the CGIAR to use its moral force and its scientific credibility to get the type of cooperation and coordination established that makes optimal use of available resources. 	<p>WG1: No comments.</p> <p>#3 WG 3: Dual Strategy. Agreed.</p>
<p>RECOMMENDATION 4</p> <p>The Panel recommends an integrated gene management approach based on:</p> <ul style="list-style-type: none"> • patenting processes and new varieties, and entrusting their use under free licensing; • a legal entity which could hold CGIAR patents; • the conservation of agrobiodiversity and its sustainable and equitable use; • research on genomics and molecular breeding for the purpose of supporting NARS to enhance the productivity of major farming systems in an ecologically, economically, and socially sustainable manner; • strict adherence to the equity and biosafety provisions of the Convention on Biological Diversity and national government regulations; • a central coordinating and servicing unit for advising both IARCs and appropriate NARS; • a widened food security basket through inclusion of minor and underused millets, grain legumes, tubers, and other crops; • the use of molecular and Mendelian methods of breeding in an integrated manner; • an effective public information and communication 	<p>WG1: [Proposed for CGIAR endorsement:]</p> <p>“The Panel recommends an integrated gene management approach based on:</p> <ul style="list-style-type: none"> • patenting processes and new varieties, and entrusting their use under free licensing; • the conservation, characterization and sustainable and equitable use of agrobiodiversity; • research on functional genomics and molecular breeding for the purpose of supporting NARS to enhance the productivity of important farming systems relevant to the poor in an ecologically, economically, and socially sustainable manner; • strict adherence to the equity and biosafety provisions of the Convention on Biological Diversity and national government regulations; • a central coordinating and servicing unit for advising both IARCs and appropriate NARS; • the use of molecular and Mendelian methods of breeding in an integrated manner; • an effective public information and communication system and total transparency and accountability in relation to work in the field of biotechnology; and

<p>system and total transparency and accountability in relation to work in the field of biotechnology; and</p> <ul style="list-style-type: none"> • a System-wide review of plant breeding efforts, with the aim of freeing up resources for new priorities while accelerating the introduction of modern marker-assisted breeding and bioengineering technologies. 	<ul style="list-style-type: none"> • a System-wide review of plant breeding efforts, to address a balanced integration of traditional breeding with modern marker-assisted breeding and bioengineering technologies. • Quality and value addition to ensure nutritional security.” <p>WG 3: Integrated Gene Management. (Governance aspects)</p> <p>Could not agree on the need for a ‘legal entity’, not convinced it is necessary. Centres are already patenting to protect their interests and common property.</p> <ul style="list-style-type: none"> • On the ‘central advisory/service unit’- WG noted that the Centre Directors had already agreed to set up such a unit based at ISNAR • Not convinced, as yet, of the need for an information and communication system.
<p>RECOMMENDATION 5</p> <p>The Panel recommends that the CGIAR enhance its research methodology by adopting an integrated natural resource management approach. Further, the organization of an International Network for Integrated Natural Resource Management will link productivity research with the environmentally sound management of natural resources. The network should be based on, among other things:</p> <ul style="list-style-type: none"> • Centers that are retooled with sciences needed to manage the viability and sustainability of ecosystems; • a definition of the corresponding methods at different spatial scales, particularly at local levels; • adoption of precision farming techniques in relation to tillage, irrigation, nutrient supply and pest and post-harvest management; • development of indicators for measuring sustainability; • development of sustainable systems of management for aquatic resources; • joint preparation of national agricultural research strategies by respective NARS and a consortium of IARCs; and • development of more bottom-up, demand-driven projects. 	<p>WG1: [Proposed for CGIAR endorsement:]</p> <p>“The Panel recommends that the CGIAR enhance its research methodology by adopting an integrated natural resource management approach. Further, the organization of international networks for Integrated Natural Resource Management will link productivity research with the environmentally sound management of natural resources. The network should be based on, among other things:</p> <ul style="list-style-type: none"> • Centers that are retooled with sciences needed to manage the viability and sustainability of ecosystems; • a definition of the corresponding methods at different spatial scales, particularly at local levels; • adoption of knowledge intensive farming techniques in relation to tillage, irrigation, nutrient supply and pest and post-harvest management; • development of indicators for measuring sustainability; • development of sustainable systems of management for aquatic resources; • joint preparation of national and regional agricultural research strategies by NARS, regional and global fora, and a consortium of IARCs; and • development of more bottom-up, demand-driven projects, in partnership with NARS; • development and implementation of new methodologies for ecoregional research including GIS, explorative and extrapolative approaches. • a widened food security basket through inclusion of

	<p>minor and underused millets, grain legumes, tubers, and other crops in relation to cropping systems approach.”</p>
<p>RECOMMENDATION 6</p> <p>The Panel recommends that, the CGIAR, in partnership with FAO, the World Bank, NARS, ARIs, and NGOs, the CGIAR develop an effective Global Knowledge System for Food Security. This would be a central element in the CGIAR’s future capacity building efforts. ISNAR and IFPRI should be considered as the convening Center for this initiative. This initiative should:</p> <ul style="list-style-type: none"> • benefit NARS, NGOs, civil society organizations, and the media; • pay attention not only to frontier science and technology but also to traditional wisdom; • be built on a decentralized management scheme for its various components; • make international research databases available as free goods to developing nations; • produce Web sites of special relevance to the developing world through a highly skilled central screening and coordinating unit; • promote the organization, spread, and understanding of traditional knowledge systems; • facilitate direct contact via e-mail between developing-country scientists and individual experts throughout the world, beginning with the organizing of young professionals and IARC alumni; and • promote cooperative activities through a geographically indexed Web database containing projects of all organizations performing agricultural research and development in each region. • take account of existing relevant databases 	<p>WG1: The Proposed Global Knowledge System should be limited to agricultural research and related information and not to all food security concerns, which are the mandate of FAO.</p> <p>WG2: the WG noted that important components of the proposed Global Knowledge System already exist, and the main need now is to build on these. Also, the CGIAR does not have a comparative advantage in undertaking the task of developing such a system, since this relates more to the FAO mandate.</p> <p>Nevertheless, the WG recognized the need to improve the coordination of, and access to, information generated by the CGIAR Centers themselves. It is important to take into consideration the new information and communication technologies in strengthening such an information system.</p> <p>It suggested that the Centers, as well as the CGIAR, give increased attention to development of mechanisms for better production and use of information related to the Centers’ research work, especially by their NARS partners.</p> <p>It was also agreed that all Centers should be engaged in such an effort.</p>
<p>RECOMMENDATION 7</p> <p>The Panel recommends that:</p> <ul style="list-style-type: none"> • greater emphasis be placed on social and management sciences in order to address issues of local policy-making, conflict resolution related to natural resource management, participatory research approaches, and research policy; • policy analysis research be strengthened; • policy formulation and analysis be carried out with selected developing countries; • the CGIAR organize System-wide Dialogues for Policymakers at regular intervals; • in collaboration with ISNAR and other appropriate IARCs, NARS, and relevant bilateral and multilateral 	<p>WG1: [Proposed for CGIAR Endorsement:]</p> <p>“The Panel recommends that:</p> <ul style="list-style-type: none"> • greater emphasis be placed on social and management sciences in order to assist NARS with policy-making, conflict resolution related to natural resource management, participatory research approaches, and research policy; • policy analysis research be strengthened; • policy analysis be carried out in partnership with NARS and regional fora to conduct policy research which addresses issues relating to sustainability, equity and the concerns for a wide gap between

<p>development institutions, IFPRI launch a special program to strengthen the capacity for collaborative policy research and formulation in countries where inadequate public policy support is the major cause of a wide gap between potential and actual yields in farmers' fields; and</p> <ul style="list-style-type: none"> • capacity building in policy research cover economic policy-making and environmental and science and technology research policies. 	<p>potential and actual yields in farmers' fields, taking into account both productivity and sustainability;</p> <ul style="list-style-type: none"> • the CGIAR organize System-wide Dialogues for Policymakers at regular intervals; • capacity building in policy research cover economic policy-making and environmental and science and technology research policies. • When asked to contribute to multilateral intergovernmental negotiations, the CGIAR provide information and policy options, but carefully avoid taking positions or advocating specific policies.
<p>RECOMMENDATION 8</p> <p>The Panel recommends that:</p> <ul style="list-style-type: none"> • the CGIAR continue to emphasize the capacity building efforts that have been successful in the past; • the CGIAR strengthen partnerships with bilateral and multilateral development agencies providing technical assistance and support in capacity building • there be an increased emphasis on broadening the range of capacity-building efforts that the CGIAR considers essential for its work, particularly policy-making capacity in NARS; • new emphasis be placed on establishing national-, regional-, and sub-regional-level consultative processes for research and development; • the CGIAR play a leading role in organizing, and if necessary producing, a large menu of Web-based, highly interactive distance education and training courses; • Centers pursue meaningful collaborative partnerships with strong NARS in areas of strategic research; • the CGIAR encourage the internationalization of certain strong NARS, thereby facilitating more South/South research collaboration; and • a stepped-up CGIAR public awareness program is needed to promote awareness of CGIAR/NARS collaboration and the importance of research to developing-country governments. 	<p>WG1:</p> <ul style="list-style-type: none"> • the CGIAR, together with ARIs, continue to emphasize capacity building efforts, including human resource development, that have been successful in the past.) • Centers pursue meaningful collaborative partnerships with strong NARS in areas of strategic research, and training to ensure capacity enhancement (also include HRD collaboration <p>WG2:</p> <p>a) The WG agreed with the first and second bullets of Recommendation 8 as drafted, but cautioned Centers themselves should not become engaged in technical assistance.</p> <p>b) Building increased policy research capacity in NARS was endorsed within practical limits imposed by Center capacities and financial resources.</p> <p>c) The new emphasis on national, regional, and subregional consultative processes for R&D already being provided by GFAR and the various regional fora should be actively encouraged and used by the CGIAR.</p> <p>d) Collaboration with NARS should be more strategic and facilitative of South-South collaboration, and this should involve not only strong NARS, but also weaker ones.</p> <p>e) Increased action on public awareness of CGIAR/NARS collaboration is needed, but new mechanisms/programs should not be created.</p> <p>WG 3: Capacity Building. General agreement but-</p> <ul style="list-style-type: none"> • Need to be cautious about the resource implications and value added. • Need to avoid duplication with other initiatives in this field.

<p>RECOMMENDATION 9</p> <p>The Panel recommends that CGIAR organize an International Network for the Technological Empowerment of Women in Agriculture. The network should promote a common platform for action at the country level by national, bilateral, international, non-governmental, private-sector, and women's organizations. IRRI could serve as the coordinating Center for the Network, based on its experience with the Women in Rice Farming Network in Asia.</p>	<p>WG2: This is not an issue of partnership as such, but an important substantive issue that deal with an important component of the CGIAR agenda.</p> <p>The WG concluded that there should not be a new network but that the CGIAR should continue and strengthen existing efforts at the Center and inter-Center levels.</p> <p>The proposed implementation body should elaborate specific steps needed.</p>
<p>RECOMMENDATION 10</p> <p>The Panel recommends a special collaborative focus on Africa that incorporates the following elements to create an effective strategy for African agriculture and that complements the efforts of other organizations, including sub-regional associations:</p> <ul style="list-style-type: none"> • Promote national/regional consultative processes for agricultural research and development in order to facilitate the integration and increase the efficiency of the efforts of all actors. • Set up an African Capacity Building Initiative for Sustainable Food Security as a major inter-Center initiative. It should help train a cadre of African leaders who can assist the political leadership in their countries to remove policy constraints and develop a well-conceived strategy for sustainable food security. • Under the leadership of the director of the proposed African Capacity Building Initiative, set up a task force with the Centers, TAC, the CGIAR Secretariat, FAO, the World Bank, UNDP, the U.N. Environment Programme (UNEP), and other relevant organizations, including sub-regional associations, to develop a special focused program for African food security. • Launch a well-planned Lab to Land Program to take the benefits of the best available technologies to farmers and to promote on-farm participatory testing, breeding, and research. • Develop research programs in urban and peri-urban agriculture in cooperation with relevant organizations, including AVRDC. • Emphasize modern ecological farming methods, taking into account the poor infrastructure and low use of external inputs. • Set priorities on staple or relevant food crops, such as cassava, yams, cowpeas, plantain, and other "indigenous" African food crops. • Promote partnerships between strong NARS from 	<p>WG1: Such a strategy should take account of the continuing degradation of Africa's natural resource base. At the same time it should acknowledge the degradation of the natural resource base in South Asia.</p> <p>WG2: a) The WG recognizes the vital importance of the issue and the need for urgent action aimed at developing a different approach to African requirements and development needs.</p> <p>b) This requires a new way of articulating a fresh approach. However, it does not mean that new institutions and new organizational mechanisms need to be established.</p> <p>c) The priority IARCs attach to Africa should remain at a high level.</p> <p>d) Better coordination among IARCs, African NARS and donors should be established.</p> <p>e) An African-led agricultural development strategy should be developed and pursued, building upon what is existing. This would require dialogue between African researchers, policy makers and other important development agents. The Global and Regional Fora can play an important role in this process.</p> <p>WG 3: Africa Focus. Yes but-</p> <ul style="list-style-type: none"> • The needs of Africa were particularly acute and urgent. • Do not duplicate the work of SPAAR and other Africa and regional initiatives and bodies eg CORAF, ASARECA, SACCAR, and the Global and Regional Fora. • Noted that the IARCs were already taking steps to better coordinate their work in Africa. • No clear need for a special initiative, unless further work shows significant gaps. • It was important that research was seen in the

various parts of the world and strategic African NARS.	context of agricultural development.
<p>RECOMMENDATION 11</p> <p>The Panel recommends that:</p> <ul style="list-style-type: none"> • where appropriate, the range of the CGIAR's partnership be broadened to include other organizations with a shared commitment to its mission and goals; • in relevant areas, the CGIAR enter into Memoranda of Understanding with partners that contain a Voluntary Code of Conduct; • IARCs should not enter into partnerships that will lead to the monopolistic and exclusive use of the research results; • the CGIAR establish a Media and Communications Unit; and • the Chair convene a high-level meeting with CEOs of interested representative agribusiness to exchange views and consider opportunities for new partnership relationships, including with farmers' cooperatives and seed growers' associations. 	<p>WG2: The WG agreed that:</p> <p>a) Partnership is a complex and heterogeneous concept that refers to a wide range of collaborative research mechanisms, such as research consortia, research networks, joint ventures, strategic alliances, collaborative information systems, etc. Different types of partnership have different characteristics and requirements, that should be taken into consideration in further work on this topic.</p> <p>b) Broadening of partnerships should be pursued, when appropriate, reflecting the increasingly important role of new actors in agricultural research.</p> <p>c) Development and strengthening of partnerships with advanced research institutions (both in developed and developing countries), international scientific institutions/organizations (e.g. ICSU, TWAS, etc) including professional societies at the national level, is strongly encouraged.</p> <p>d) Partnerships with the private sector should be further strengthened at Center level provided they improve the efficiency and effectiveness of production/utilization of scientific outputs for CGIAR beneficiaries. Through these partnerships, the private sector can play an important role, not only in facilitating access to proprietary technology, but also in generating public goods (upstream research)</p> <p>e) NGOs play an important role in both NRM/agroecology research and technology transfer to smallholder producers given their grassroots approach. Thus partnerships between IARCs and NGOs should be encouraged.</p> <p>f) Policy issues relating to partnerships with the private sector and NGOs that are systemwide in nature are best dealt with at the Systemwide level.</p> <p>The WG did not agree to the establishment of a Media and Communications Unit, although it recognized the very important role this function plays. The unmet needs can be tackled through existing means.</p> <p>WG 3: Partnerships with Private Sector. Further work needed.</p> <ul style="list-style-type: none"> • Issues are complex but important. • Not yet ready to buy the proposed solutions. • Not clear of the justification for the Media and Communications Unit.

<p>RECOMMENDATION 12</p> <p>The Panel recommends that the CGIAR's governance continue to be based on the principles of member sovereignty, Center autonomy, and independent scientific advice. While we fully endorse the principle of member sovereignty, we stress the necessity for individual member governments to harmonize their own national policies and speak with one voice in all international fora and negotiations relevant to CGIAR business, particularly on genetic resources and intellectual property rights.</p>	<p>WG 3:</p> <ul style="list-style-type: none"> • While the WG accepted the statement at the start of #12 and the need for the centres and the system to move towards greater cohesion in its policy and statements, it was concerned that the sentiments expressed in the rest of #12 and 13 led in the direction of #15 and they were not yet ready to endorse that approach. They wished to explore other options for improving consistency and cohesion across the System. • Prepared to accept that there is room for improvement, but what is 'broken' • What options were considered and why were they rejected? • Not convinced of the need to go down the route advocated. • Ideas and concerns need to be unpacked and to avoid confusing apolitical measures with those that could have significant political implications. • Responsibilities of the Review's recommended Central Board should be discussed and agreed before composition is discussed. Most felt that the composition of CB should, if agreed, be discussed further. • A difficult issue where further discussion is needed.
<p>RECOMMENDATION 13</p> <p>The Panel recommends that the CGIAR's consensus decision-making, non-political nature, and informal status be updated and modified to enable the System to address the current and anticipated needs of the CGIAR and its stakeholders effectively.</p>	<p>WG 3: Key issues but not yet ready to accept the proposed package. More work and discussion needed.</p>
<p>RECOMMENDATION 14</p> <p>The Panel recommends that:</p> <ul style="list-style-type: none"> • the CGIAR establish a special task force, including TAC and Center Directors, for improving the efficiency of the evaluation processes; • the EPMR site visit be reduced in scale so as to require no more than one week of each reviewer's time; • the CGIAR institute Review Workshops for each major type of CGIAR activity, both to improve the review process and to reduce the amount of time and effort required for EPMRs and CCERs; • Centers be financially compensated by donors that wish to conduct their own reviews of Center projects; • EPMRs give greater attention to Board governance; and 	<p>WG1: The review cost to be reduced by devising suitable cost-effective measures.</p> <p>WG 3: Reviews and Impact assessment Agree that there is room for improvement.</p> <ul style="list-style-type: none"> • Noted that IAEG agrees to closer link with TAC and welcomes proposals developed by IAEG. Details will be circulated. • Agree that Centres should be properly resourced to carry out special reviews and that existing EPMRs could be streamlined. • Common systems across the IARCs and accepted by all donors/investors could help and reduce

<ul style="list-style-type: none"> the present IAEG be replaced with a more pragmatic unit, possibly located within TAC. 	unproductive and time consuming reporting and transaction costs.
<p>RECOMMENDATION 15</p> <p>The Panel recommends that the informal structure of the central mechanisms of the existing CGIAR System be transferred to a new central Board to be incorporated as a non-profit public service organization in an appropriate jurisdiction, to be established after consideration of legal and other factors relevant to its effective functioning. The central Board would have the following specific characteristics:</p> <ul style="list-style-type: none"> It would consist of Members, a Board of Directors and Executive Committee, the CGIAR Chair, and a chief executive officer. (A full-time CGIAR Chair could also serve as chief executive officer.) Membership of the central Board would be drawn from the stakeholders of the CGIAR. Based on a principle of rotation, all Members would have the possibility of serving on the board. Regular meetings should be held once a year. In addition to the Chair, the body would contain representatives of or individuals from the following categories: Members from the South (up to 6 persons), the North (up to 6), the private sector (up to 3), the NGO community (up to 3), institutions and foundations (up to 3), and co-sponsors (4). The total would be up to 26 persons. The central Board would be elected by its members, with the number of seats to be allocated to each stakeholder group being elected by the members of such group, so as to ensure balanced and representative character. Central Board members would serve on staggered, three-year terms, and would be eligible for re-election for up to a period of six years. There would be no alternates. Each category would elect its members on the body, using the following criteria: funding exceeding US\$ 500,000 annually and during the full period of membership; “vision” and knowledge about global agricultural research; “vision” and knowledge about agricultural research in the South; and ability and willingness to consult with other relevant actors. The chairs of TAC, the Committee of Board Chairs (CBC), and the Center Directors Committee (CDC) would be ex-officio, non-voting members of the Board. Acting on behalf of the central Board, an Executive Committee would meet up to three times a year and be chaired by the CGIAR Chair. It would perform the current tasks of the Oversight Committee. The Executive Committee would exercise the powers of the central Board when not in session, subject to the terms 	<p>WG3: Not yet ready to discuss</p>

<p>as agreed by the Board. The Executive Committee would be composed of three members each from the categories of the North and the South, and one member each from the private sector, NGOs, and institutions, plus the co-sponsors. In all, it would have 14 members (including the chairs of TAC, CBC, and CDC as non-voting, ex-officio members).</p> <ul style="list-style-type: none"> • The Finance Committee would become a committee of the central Board. • A portion of the agenda support funds would be at the disposal of the central Board/Executive Committee in order to ensure stable and guaranteed support for Centers in such important areas as training, maintenance of gene banks, and indirect cost recovery. 	
<p>RECOMMENDATION 16</p> <p>The Panel recommends that the CGIAR broaden its membership by over time including more governments and other stakeholders to enable the CGIAR to become even more inclusive, as research becomes increasingly globalized and dependent on collaboration among a wider range of partners. Specifically:</p> <ul style="list-style-type: none"> • Membership in the CGIAR should be broadened to include the private sector and the NGO community, as both play increasingly important roles in the international research-development continuum. The basis of membership should be not only financial, but a shared commitment to the mission and goals of the CGIAR and a representative character of the parties concerned. • The minimum, annual contribution should be US\$1 million for all Members. However, for Members from the South with a per capita GNP of less than US\$750, the current annual minimum contribution should remain unchanged for the next 5–7 years. • In-kind contributions should be officially recognized by the CGIAR. • As the membership base broadens to include new sectors, ethical ground-rules for collaboration with new partners will need to be developed. • Regional representatives should be eliminated. 	<p>WG3: Wider Membership. Yes - but this raised a dilemma –</p> <ul style="list-style-type: none"> • Wider membership was welcomed to increase ownership and to help in agenda setting, but there was a need to avoid the CGIAR becoming a mini-United Nations. • Commitment to the poverty and food security goals of the CGIAR was essential, supported by some contribution of resources. A minimum contribution in cash and/or in kind had worked well in the past. However there was nervousness and resistance to agreeing the proposals in the Review or to revisions to the current formulation. • It was recognised that decision making would be more difficult in a larger group. This pointed to some means by which decisions could be prepared and ratified by the CGIAR as a whole.
<p>RECOMMENDATION 18</p> <p>The Panel recommends that the current Committee structure be streamlined to improve effectiveness and efficiency, and to ensure compatibility with other proposed changes in System-level governance. Specifically:</p> <ul style="list-style-type: none"> • The functions of the Oversight Committee should be 	<p>WG1: The scientific capacity of TAC needs to be strengthened and revitalized to provide independent scientific advice by constituting competent ad hoc scientific panels, without too much emphasis on budgetary aspects, which could be left to the Centers and the Finance Committee to decide. The recommended size of TAC may</p>

<p>assumed by the Executive Committee of the proposed central Board.</p> <ul style="list-style-type: none"> • The Finance Committee should become a committee of the proposed central Board. • The scientific capacity of TAC needs to be strengthened and its independent scientific advice maintained. TAC should be reorganized to include the TAC Chair and two or three strategic thinkers or “visionaries,” who together would constitute the TAC nucleus. They would assist the proposed chief executive officer in formulation of a CGIAR Strategy, and would serve renewable three-year terms. • The IAEG should cease to exist in its current form. The central Board should establish an impact unit in cooperation with TAC. This unit may be incorporated within TAC. • The important tasks of public awareness and public relations, including PARC and the “Future Harvests” campaign, should be taken over by a new Media and Communications unit that is closely linked with the proposed central Board and chief executive officer. It should be supplemented with a media consultation each year at ICW. • An independent committee similar to GRPC remains necessary. Such a Policy Committee should be attached to the proposed CGIAR central Board. Alternatively, it may be attached to TAC as a permanent sub-panel. • The NGO Committee and the Private Sector Committee should be replaced with wider consultative processes with representatives of each sector during each ICW. These representatives would be invited to participate in relation to relevance of the issues being considered. The two committees should continue to exist in the interim until such consultative processes are implemented. • The input of the CDC and CBC should be sought and valued. 	<p>be too small to provide needed representation to various disciplines and regions.]</p> <p>[The recommendation regarding IAEG] is a good recommendation and should be implemented.</p> <p>WG2: The WG considered the penultimate bullet of Recommendation 18 within its purview and agreed:</p> <p>a) the NGO and Private Sector Committees should be retained.</p> <p>b) the consultative processes are best broadened by including within the memberships of the NGO and PS Committees individuals with experience at the grass roots level and with Centers.</p> <p>WG3: Streamlining Committees. Need to improve efficiency and coherence in decision making; however –</p> <ul style="list-style-type: none"> • Functions of the OC, FC, TAC, IAEG, PARC, GRPC, NGOC, PSC, CBC and CDC remain important to transparency and equity in the workings of the CGIAR, but they need not necessarily be carried out by separate committees. • There is a pressing need to improve timeliness and consistency/coherence in messages and policy. • Not convinced that a single central body could carry out the functions of OC and FC. • Composition and mode of working of TAC should be reviewed. A smaller TAC might work better if greater use is made of subsidiary TACs on specific subjects or covering different regions. • Noted that IAEG had produced useful proposals for closer working with TAC, while maintaining strong links with the Centres. • Noted that the Centres had already made provision for and taken strong ownership of PARC and the ‘Future Harvests’ campaign. • Noted and endorsed the recommendation in the SGRP Review that GRPC should become the governance of the SGRP. • Further thought should be given to the merger of NGOC and PSC, or the creation of a civil society committee. • CDC and CBC were essential to the efficient working of the CGIAR and should be drawn on more frequently. • Better coordination is needed, but a central body may not be the answer.
RECOMMENDATION 19	

<p>The Panel recommends that:</p> <ul style="list-style-type: none"> • “co-sponsor” status be replaced with permanent seats on the central Board and its Executive Committee; • a World Bank representative continue to chair the Finance Committee, as long as the World Bank’s leadership and financial support continues; • joint programmatic efforts between the CGIAR and these four agencies receive high priority, particularly in the area of strengthening NARS; • collaborative efforts between the FAO’s Special Programme for Food Security and the CGIAR should be further explored to facilitate more intensive collaboration at the national level; and • these agencies should play a more consistent role in strategic issues through coherent efforts during major meetings related to the mission and work of the CGIAR. 	<p>WG3: The Finance Committee had considered these recommendations and would be reporting to the CGIAR later this week.</p> <ul style="list-style-type: none"> • The chairman of the FC outlined the conclusions of the FC; there were no strategic problems, but some practical ones. • WG decided to defer discussion of these items to the plenary discussion of the FC report.
<p>RECOMMENDATION 20</p> <p>The Panel recommends that the CGIAR support the convening of a Global Forum every three years, confined to a general meeting on future global agricultural research issues and involving all major stakeholders. Further, the CGIAR should monitor GFAR’s development and viability, as well as the implications of GFAR with respect to the work of CGIAR Centers, particularly ISNAR.</p>	<p>WG2:</p> <p>a) WG endorsed the active participation and support of the CG to the GFAR.</p> <p>b) Partnership between CG and other actors in the GFAR is mutually beneficial, in well justified and managed cases.</p> <p>c) WG encouraged closer interaction between CG Centers and other components of GFAR, including regional fora/subregional fora.</p> <p>d) The GFAR can play a facilitating role in the implementation of many of the SR recommendations, through the Regional/Subregional fora and through the activities it is carrying out in promoting partnerships and capacity-building efforts.</p> <p>e) Progress of GFAR should be monitored by all stakeholders to see what we learn and what should be modified or improved. GFAR 2000 provides a venue to do so.</p>
<p>RECOMMENDATION 21</p> <p>The Panel recommends that there be one annual business meeting at ICW. MTM should be held every third year, with possible elimination over the longer term. Additional ad hoc meetings could be held around the Executive Committee meetings as necessary. A triennial MTM would be complementary to TAC’s three-year planning cycle; the recommendations of the Finance Committee currently given at MTM would be circulated in writing. Further, the size of all kinds of delegations to CGIAR business meetings should be restricted.</p>	<ul style="list-style-type: none"> • WG3: ICWs would continue and for the next two years there would be MTMs.

<p>RECOMMENDATION 22</p> <p>The CGIAR Secretariat should expand and strengthen its human resources services to ensure that the Centers are able to identify and attract the very best scientists and managers, including young professionals.</p>	<ul style="list-style-type: none"> • WG3: Noted that the CDC had considered and commented on these issues. High quality human resources were essential to the future of the IARCs. The Centres were taking action to share information on the identification, recruitment and retention of good staff; however some central help would be welcome. More use could be made of Internet and other electronic systems. These ideas required further discussion amongst the Centres, and proposals made to the CGIAR.
<p>RECOMMENDATION 23</p> <p>The Panel recommends that a special task force of key CGIAR stakeholders, with supporting staff, be established to develop a planned process of implementation of the governance changes recommended in this report.</p>	<p>WG 3 (Oct 26): The WG concluded:</p> <ul style="list-style-type: none"> • There should be an ‘advisory council’ to work with the Chairman, to take forward action that is agreed and to initiate further studies where mandated by the CGIAR. • The AC should be drawn from within the membership of the existing committees of the CGIAR – Sponsors, OC, FC, CBC, CDC, PSC, NGOC with inputs from TAC and the Secretariat. • The AC should report to MTM 1999. • The AC should advise and assist the Chairman to work through the ideas in the Review and to help initiate work and to formulate proposals and propositions that should assist the CGIAR to reach conclusions and decisions at MTM 1999. • The AC should focus its work on the follow-up on the Review. <p>WG 3 (Oct 27):</p> <p><u>Principles:</u> The follow-up group should be advisory, representative of donor/investors, regional constituencies, Boards and Centres, Sponsors and groups directly responsible for the CGIAR. It should not be too large, but large enough to be able to work in representative sub-groups. Its existence should be time bound –6 to 12 months.</p> <p>It would report to the Chairman of the CGIAR, who might appoint a coordinator to lead and coordinate the group, until it reports its findings and recommendations to the CGIAR at MTM.</p> <p><u>Options on size:</u> The options suggested were:</p> <ul style="list-style-type: none"> • Southern donors/investors/NARS, including Global/regional fora – 4,5 or 6 • Northern bilateral and multilateral donors – 4 or 5 • CBC/CDC – 2 to 5

	<p>The need to ensure adequate Centre involvement was made – and accepted.</p> <p><u>Key issues for follow-up:</u></p> <p>The WG identified the following key issues for follow-up:</p> <ul style="list-style-type: none"> • System strategy and better inter-centre working • IGM • INRM • Africa • Better partnerships • Knowledge systems • TAC and Evaluation/impact/IAEG • Decision making structure- council? <p>The <u>main functions</u> of a follow-up mechanism:</p> <ul style="list-style-type: none"> • To implement agreed actions and to report to MTM. • To review, reformulate and regroup the SR recommendations into those requiring action by the Board and management of the IARCs, TAC and those that should be handled at System level. <p>There is a <u>need</u> to:</p> <ul style="list-style-type: none"> • Identify those recommendations where actions had been agreed and who might be responsible to carry them forward at IARC and System levels. Those responsible would report on progress at MTM. • Group the outstanding issues into those that might be worked on further by the IARCs and at System level, and whether any of them might be addressed by existing committees eg FC. • Give further consideration to the size and composition of the advisory council or task force to coordinate the follow-up work. The CC/AC/TF should meet for the first time with the Chairman before the end of ICW. <p><u>Two models of working:</u></p> <ul style="list-style-type: none"> • One based on tasking existing committees to work on specific issues within their mandates and competence drawing on other constituencies to ensure a broader perspectives. They would have first pass through the issues with their work being considered and synthesised by the TF/CC/AC. • The other would involve the continuation of the ICW '98 working groups to work on the issues of governance, science and partnerships. These cross-constituency groups would be sub-groups of the main
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	follow-up mechanism
<p>RECOMMENDATION 24</p> <p>The Panel recommends that Boards of Trustees of individual Centers maintain much closer relationships between themselves and the central Board. We recommend establishment of a special task force to develop a strategy to delineate the nature and modalities of the relationship between Center Boards of Trustees and the proposed central Board. This task force should consist of a small number of Center Directors, Board Chairs, and CGIAR Members.</p>	<p>WG 3: Comments of Center Directors noted.</p>
<p>RECOMMENDATION 25</p> <p>The Panel recommends that:</p> <ul style="list-style-type: none"> • Relevant System-wide programs be provided sufficient funding on a long-term basis (at least five years), as they can be a useful complement to the CGIAR through improved coordination; • since eco-regional activities are part the strengthening of NARS, a workshop examines and assesses past practical experiences, issues, and potentials involving all relevant actors in a region, with a proposal for further actions to be discussed by the CGIAR in 1999, at the latest; • Members and Centers place high priority on ensuring funding of collaborative research activities, including ecoregional and other System-wide programs as well as other inter-Center initiatives that are important to the CGIAR mission; • eco-regional activities be managed by the NARS and regional and sub-regional organizations, with the political and financial support of both the NARS and any bilateral donors; and • a special task force composed of key stakeholders be established to formulate specific plans and modalities to improve the governance and financing of System-wide programs. 	<p>WG2: The WG agreed that Members and Centers should give high priority to ecoregional research conducted in collaboration with NARS.</p> <p>Inter-Center collaboration on system-wide programs should continue and be strengthened.</p> <p>The WG noted that a review of ecoregional programs has been initiated.</p> <p>WG3: #25 to 29. The Finance Committee had considered these recommendations and would be reporting to the CGIAR later this week.</p> <ul style="list-style-type: none"> • The chairman of the FC outlined the conclusions of the FC; there were no strategic problems, but some practical ones. • WG decided to defer discussion of these items to the plenary discussion of the FC report.
<p>RECOMMENDATION 26</p> <p>The Panel recommends that the international development community reverse the decline in ODA for agriculture and agricultural research, tap other non-ODA public sector resources, and commit all parties (all governments, international organizations, national research organizations, NGOs, and the private sector) to coordinate their resources and efforts to combat the risk and threat of pervasive poverty, food insecurity, and environmental degradation in developing countries. Given the challenges ahead, this is a time for greater financial commitment to the CGIAR.</p>	<p>WG 3: Awaiting Finance Committee discussion.</p>

<p>RECOMMENDATION 27</p> <p>The Panel recommends that an overall policy for CGIAR collaboration with the for-profit sector be developed at the System level under conditions that contribute to and do not compromise the basic public interests and objectives of the CGIAR. Financial contributions from the for-profit sector should be accepted for research activities of mutual interest, in line with the CGIAR mission statement, and directed toward the agreed research agenda. Further, a foundation should be the locus of a major fund-raising strategy to mobilize funding from the private sector.</p>	<p>WG2: Endorsed</p>
<p>RECOMMENDATION 28</p> <p>The Panel recommends that:</p> <ul style="list-style-type: none"> • three-year financial commitments to the agreed research agenda be encouraged; • as a general rule, no individual center should have less than 50 percent “unrestricted” funding of its annual budget; • the project based approach to center planning should remain and, together with the CGIAR Financial Report, should provide Members with excellent financial information and accountability; • the use of the agenda matrix is most likely the best approach for the present CGIAR Governance model, although caution should be taken to avoid a complete dependence resource allocation by the free market in the longer run; • donors improve their current disbursement practices so that Centers receive all funds at the beginning of the fiscal year; and • Members ensure funding for indirect costs and areas in which the CGIAR has a global responsibility, such as germplasm collections and training, with funds at the discretion of the proposed central body possibly used to ensure sufficient support for these budget items. 	<p>WG 3: Awaiting Finance Committee discussion.</p>
<p>RECOMMENDATION 29</p> <p>The Panel recommends that the World Bank continue to provide the financial and policy support and intellectual leadership which is indispensable to the future of the CGIAR as envisaged by this Review</p>	<p>WG 3: Agreed.</p>

Guidelines for the Designation of Accessions under the FAO Agreements

I. Background

In October 1994, FAO and eleven CGIAR Centres (those holding plant genetic resources, *ex situ*) signed Agreements placing collections of plant germplasm under the auspices of FAO, as part of the International Network of *Ex Situ* Collections. Centres hold germplasm designated under these Agreements "in trust for the benefit of the international community, in particular the developing countries in accordance with the International Undertaking on Plant Genetic Resources," and the terms and conditions set out in the Agreements.

Under the Agreements, each relevant Centre is committed to a number of actions and principles, *inter alia*, it:

- "...undertakes to manage and administer the designated germplasm in accordance with internationally accepted standards, including, with respect to the storage, exchange and distribution of seeds, the international Genebank Standards endorsed by the Commission, as soon as possible applying the 'preferred standards' where these are specified, and ensuring that all designated germplasm is duplicated in order to ensure its safety." (Article 5a)
- "...undertakes to make samples of the designated germplasm and related information available directly to users or through FAO, for the purpose of scientific research, plant breeding or genetic resource conservation, without restriction." (Article 9)

Furthermore, each Centre agrees that:

- "The Centre shall not claim legal ownership over the designated germplasm, nor shall it seek any intellectual property rights over that germplasm or related information." (Article 3b)
- "Where samples of the designated germplasm and/or related information are transferred to any other person or institution, the Centre shall ensure that such other person or institution, and any further entity receiving samples of the designated germplasm from such person or institution, are bound by the conditions set out in Article 3 (b) and, in the case of samples duplicated for safety purposes, to the provisions of Article 5 (a)." (Article 10)

To date, FAO and the CGIAR have issued two Joint Statements, which address various issues of interpretation and implementation of the Agreements. In these Statements, FAO and the CGIAR agree, *inter alia*:

- "With respect to the transfer of samples of designated germplasm, the requirement of Article 10 will be satisfied by arrangements, such as material transfer agreements..." The wording of a standard material transfer agreement (MTA) for use by all Centres has been agreed by FAO and the CGIAR.
- That Centres will follow certain specified procedures when they have reason to believe that an MTA may have been violated.

- That Centres are not expected to meet unreasonable requests for germplasm (either in terms of quantity of accessions requested or the amount of material requested of a single accession), nor are they obliged to transfer material when such a transfer would pose a risk of introducing pests or diseases.

On their own initiative, Centres designate germplasm to be included in the International Network and under the terms and conditions of the Agreements with FAO. Germplasm acquires its status as "designated" germplasm at the moment the Centre determines that it considers it as such, and is willing to manage it in accordance with the FAO Agreements. Every two years, Centres are required to provide FAO with an updated list of designated germplasm. It is recognised in the second Joint Statement that in certain circumstances, specific designated germplasm will cease to be considered as designated (e.g., loss of viability of an accession, and administrative situations such as the discovery that an accession identifier previously provided FAO does not actually correspond to a physical sample, etc.)

The Agreements call for the Centres to append a list of "designated germplasm" included in the International Network, and to update the list every two years as new accessions are added to the collections.

These Guidelines for Designation have been developed on the initiative of and through the System Wide Programme on Genetic Resources >and endorsed by the Inter-Centre Working Group on Genetic Resources< (brackets to be removed following endorsement). The promulgation of these Guidelines demonstrates that Centres accept a certain responsibility towards the international community to designate materials under the Agreements with FAO in a consistent and transparent manner, and on the basis of clearly enunciated criteria. While these Guidelines are aimed at helping Centres determine whether to designate materials under the FAO Agreements and at making that decision-making process more transparent to the general public, it should be noted that a number of other documents have relevance to the Agreements themselves and to their implementation, *inter alia*, the FAO/CGIAR-agreed Material Transfer Agreement (MTA), the first and second "Joint Statement(s) of FAO and the CGIAR Centres on the Agreement Placing CGIAR Germplasm Collections Under the Auspices of FAO," and certain other CGIAR policies and statements concerning plant genetic resources and intellectual property rights.

II. Criteria to Consider in Determining whether Material Should be Designated

For decades, Centres have safeguarded genetic diversity and attempted to develop it in the public interest. Centres have never claimed to own this genetic material. In keeping with this tradition and practice, Centres now designate material if it is eligible for designation (i.e., not acquired with restrictions preventing a Centre from managing it in accordance with the FAO Agreements), and, as noted below, if the Centre is prepared to manage it in accordance with the Agreements. Centres should not consider the value or potential usefulness of the material, nor attempt to make any value judgement about whether the material should be in the public domain, or not, when deciding whether to designate an accession.

The understanding and principle underlying the Agreements with FAO is that each Centre will designate all accessions (see Section III, below, for more detail) that are part of their holdings, or are subsequently acquired, which have not already been designated by another Centre or institution and which will be administered and managed by the Centre in compliance with the terms and conditions of the Agreement with FAO.

In designating germplasm, Centres commit themselves to:

A. *long term conservation*

B. *unrestricted availability*

The CGIAR Policy on Genetic Resources (1989) declared for the first time that collections were being held "in trust" for the world community. Implicit in such a declaration - and explicit in the Agreements with FAO - is the understanding that Centres do not claim ownership of this genetic material. Thus, Centres have a responsibility to designate all germplasm which (1) they undertake to conserve under accepted standards (in most cases, long-term); and (2) they can make available without restriction for "scientific research, plant breeding or genetic resource conservation". (See section V below, for a more detailed treatment of how Centres should interpret the term, "without restriction").

III. Types of Germplasm to be Designated

Accessions which a Centre is prepared to conserve long-term and make available without restriction should be designated irrespective of whether they are wild species, landraces, farmer varieties, obsolete varieties, advanced varieties, breeding lines, genetic stocks, etc.). In cases where materials have been received with the understanding that they will be conserved and will remain available, it is incumbent upon the Centre to designate them. It is understood that Centres may have sound scientific and management reasons for not designating all breeding lines, experimental populations, genetic stocks, or products of breeding programmes such as advanced cultivars. Commitment to long-term conservation and unrestricted availability may not be appropriate in all such cases. In such circumstances, the material in question would not be designated. Non-designation, however, would not prevent the Centre from making the material available appropriately and at the proper time in furtherance of Centre and CGIAR goals and principles.

Accessions held by Centres for others under "black box" arrangements should not be designated. (Some Centres hold "black box" collections - collections of others who may be temporarily unable to care for the material. In these cases, the Centre typically conserves the material, but usually does not open, examine, test or engage in research on the materials. While the Centre may be committed to long-term storage of such materials, the Centre has no right or authority to designate them.)

Furthermore, Centres should endeavour to designate particular accessions only once - confusion will result if accessions and their duplicates stored at other Centres are all designated.

A. Accessions acquired by the Centre before the coming into force of the Convention on Biological Diversity (29 December 1993)

In the vast majority of cases, materials acquired before 29 December 1993 were, in fact, acquired with the understanding that they would enter the collection of the Centre, be conserved, and be made available to all bona fide users. Such materials should be designated. In some cases (e.g. advanced products of formal breeding programmes), materials may have been acquired with certain restrictions regarding their use or distribution. Such materials should not be designated, as the Centre could not meet the requirements of the Agreements with FAO.

B. Accessions acquired by the Centre after the coming into force of the Convention on Biological Diversity (29 December 1993)

Materials acquired after the coming into force of the CBD can and ordinarily should be designated under the Agreements with FAO provided they have been acquired with the understanding that they will remain

in the "public domain" and that the Centre will conserve them and make them available without restriction as called for in the FAO Agreements. In such a case, the same principles guiding the designation of pre-CBD materials apply: the Centre must intend to manage and administer the material in accordance with the FAO Agreements. Central to the decision to designate post-CBD acquired material (as with pre-CBD acquired materials) is that the Centre be willing to commit to long-term conservation and unrestricted availability.

It is understood that acquisition of materials should be based on the express written permission of the relevant government authority. Centres should seek to determine which institute or agency has this legal authority. If materials are acquired with restrictions on their access or use, then it follows that they cannot be designated. Materials held with such restrictions cannot be considered as being kept by the Centre "in trust for benefit of the international community...." (Article 3a)

IV. Conservation of Designated Germplasm

The FAO-CGIAR Agreements state: "The Centre undertakes to manage and administer the designated germplasm in accordance with internationally accepted standards, including, with respect to the storage, exchange and distribution of seeds, the international genebank standards endorsed by the Commission, as soon as possible applying the "preferred standards where these are specified, and ensuring that all the designated germplasm is duplicated in order to ensure its safety." (Article 5) This means, in effect, that Centres must endeavour to conserve materials in a manner consistent with international standards, adopting "preferred standards" (i.e., those most appropriate for long-term conservation of the material in question) as quickly as possible.

The decision about whether or not to designate material should be made without regard to the form in which the material is to be conserved (seed, *in vitro* culture, whole plant, other) or the current/initial technical conditions of storage (long-term, medium-term, cryopreserved, etc.).

V. Availability of Designated Germplasm and Related Information

Designation can only apply to accessions that are available without administrative, legal or policy restriction. In other words, the availability of germplasm cannot be limited by contractual agreements with the supplier of the germplasm, by intellectual property laws, or by any policy or administrative regulation of the Centre (with the exception of relevant health and quarantine regulations).

Accessions should be designated irrespective of any current technical constraints to making them physically available. In a Second Joint Statement issued by FAO and the CGIAR, it was agreed that Centres could not be expected to fill all requests for materials immediately, or fill requests for unreasonable numbers of accessions or quantity of seed or clones, for example. It was agreed that Centres should not distribute designated germplasm when such distribution posed a risk of introducing pests and/or diseases. In other words, it is understood that certain factors may constrain the ability of a Centre to distribute designated materials - the fact that an accession may be temporarily unavailable does not affect the decision to designate it, or its status as designated later. The Agreements with FAO call for a good faith approach to the Agreements on both the part of the party requesting materials and the Centres. (See the Second Joint Statement for more detailed information on this subject.)

Material Transfer Agreement (MTA)

The material contained herein is being furnished by [Centre] under the following conditions:

Designated Germplasm

[Centre] is making the material described in the attached list available as part of its policy of maximizing the utilization of genetic material for research. The material was either developed by [Centre]; or was acquired prior to the entry into force of the Convention on Biological Diversity; or if it was acquired after the entering into force of the Convention on Biological Diversity, it was obtained with the understanding that it could be made freely available for any agricultural research or breeding purposes.

The material is held in trust under the terms of an agreement between [Centre] and FAO, and the recipient has no rights to obtain Intellectual Property Rights (IPR) on the germplasm or related information.

The recipient may reproduce the seed and use the material for agricultural research and breeding purposes and may distribute it to other parties provided the recipient is also willing to accept the conditions of this agreement.⁽¹⁾

The recipient, therefore, hereby agrees not to claim ownership over the germplasm to be received, nor to seek IPR over that germplasm or related information. He/She further agrees to ensure that any subsequent person or institution to whom he/she may make samples of the germplasm available, is bound by the same provision and undertakes to pass on the same obligations to future recipients of the germplasm.

[Centre] makes no warranties as to the safety or title of the material, nor as to the accuracy or correctness of any passport or other data provided with the material. Neither does it make any warranties as to the quality, availability, or purity (genetic or mechanical) of the material being furnished. The phytosanitary condition of the material is warranted only as described in the attached phytosanitary certificate. The recipient assumes full responsibility for complying with the recipient nation's quarantine/biosafety regulations and rules as to import or release of genetic material.

Upon request, [Centre] will furnish information that may be available in addition to whatever is furnished with the seed. Recipients are requested to furnish [Centre] performance data collected during evaluations.

The material is supplied expressly conditional on acceptance of the terms of this agreement. The recipient's acceptance of the material constitutes acceptance of the terms of this Agreement.

(1) This does not prevent the recipient from releasing or reproducing the seed for purposes of making it directly available to farmers or consumers for cultivation, provided that the other conditions set out in the MTA are complied with.

Second Joint Statement of FAO and the CGIAR Centres on the Agreement Placing CGIAR Germplasm Collections under the Auspices of FAO

A Joint Statement issued by FAO and the CGIAR in conjunction with the signing of the FAO-CGIAR Agreements placing CGIAR Germplasm Collections under the auspices of FAO observed that:

The parties to the Agreement recognize that the conclusion of the Agreements represents but one stage of a continuing, dynamic process and agree to continue the dialogue in the context of the implementation of the Convention on Biological Diversity and the FAO Global System on Plant Genetic Resources. They will consult from time to time to review these matters and to consider such modification as may be appropriate in the circumstances.

FAO and the CGIAR have consulted frequently since the Agreements were concluded in 1994 in order to review the implementation of the Agreements.

The Parties understand and agree that:

While Centres distribute germplasm designated under the FAO/CGIAR Agreements through Material Transfer Agreements which prohibit the recipient, or any subsequent recipient, from taking out intellectual property rights, the CGIAR cannot guarantee that recipients will abide by the terms of the MTA. Violations may take place. However, in such cases the Parties commit themselves to taking appropriate remedial action, in accordance with the following agreed procedures:

When Centres become aware of a possible violation of their MTAs by a recipient of germplasm, the Centres will henceforth voluntarily undertake the following actions in response to the perceived violation.

1. The Centres will request an explanation. Upon failure to receive a satisfactory and timely explanation for the situation from the germplasm recipient, the Centres will notify the recipient that a violation is thought to have occurred and request that the recipient cease and desist in its efforts to obtain intellectual property rights over the material, or renounce such rights or ownership if they have already been granted or claimed.
2. The Centres will notify the proper regulatory body in the relevant country of the possibility that the MTA has been violated, and bring to their attention the fact that the grant of intellectual property rights may, therefore, have been inappropriate in the case of the material obtained from the CGIAR.
3. The Centres will notify IPGRI and the FAO Commission on Genetic Resources for Food and Agriculture, through its Secretariat, of the possible violation of the MTA under the Agreements with FAO.

The Centres reserve the right to take other action, including legal action, as they might deem feasible and appropriate to enforce the MTAs and preserve the integrity of the Agreements with FAO. In this regard, it would be the intent of the Centres to work in cooperation with FAO, under whose auspices the materials are held in trust by the CGIAR for the benefit of the international community.

The Centres recognize that many accessions designated under the Agreements with FAO, were distributed to plant breeders and researchers prior to designation in keeping with the CGIAR policy for providing "unrestricted availability" to germplasm - as noted in the Preamble of Agreements. In dealing with this situation, Centres will request and urge that no intellectual property rights be sought for designated germplasm that was distributed prior to its designation under the FAO-CGIAR Agreement.

Periodic reports will be presented to the Commission on Genetic Resources for Food and Agriculture on the actions taken in support of the objectives of the Agreements between the CGIAR Centres and FAO.

In considering the text of the Agreement, the common understanding of the parties concerning certain of its provisions is, as follows:

Under the terms of the Agreements (Article 9), the Centres undertake " to make samples of the designated germplasm available directly to users or through FAO for the purpose of scientific research, plant breeding or genetic resource conservation, without restriction." It is implicit in this undertaking that users will make only reasonable requests for these specific purposes, and that the liability of the Centres would not extend to the fulfillment of unreasonable requests.

Sound management practices as well as practical or even biological constraints (such as seed availability or the health status of a sample) may at times make it difficult or inappropriate for centres to provide germplasm designated under the Agreements for the purposes spelled out in Article 9. It is understood that centres must use some discretion in determining the size and number of samples to be provided at any given time to a particular recipient. Centres are not obligated to distribute seed or other designated materials when such distributions would reduce stocks below accepted levels for conservation purposes, or when the request is for such a number of samples or quantity of a particular accession as to pose an undue burden on the financial or technical resources of the centre or on its ability to meet requests from others. In such cases, the center may ask that the recipient cover the actual costs of multiplying the relevant accessions. In cases of limited supplies, immediate availability of materials cannot be guaranteed. Such availability will follow a process of multiplication. Centers are not obligated to supply quantities of a sample which exceed basic requirements for the purposes stated in Article 9. Recipients are advised that they may need to undertake their own seed multiplication when existing sample sizes are small (such as in the case with many accessions of wild relatives) or when demand for a particular sample exceeds supply. In filing requests for material for conservation purposes alone, users are invited to note the Global Plan of Action's objectives of "safeguarding as much existing unique and valuable diversity as possible in *ex situ* collections," while reducing " unnecessary and unplanned redundancy in current programmes."

In cases when a centre cannot fully or immediately meet a request, the centre will enter into a discussion with the requesting entity to develop and agree upon a plan and schedule for the supply of materials. This process might establish an agreed list of accessions to which priority would be given.

Some designated accessions cannot be multiplied without considerable cost. For example, certain accessions of woody species may take upwards of 10 hectares of land and 30 years to multiply. Similarly, supplying materials of vegetatively propagated species can involve very time-consuming and expensive procedures. While centres endeavour to supply materials free of cost, in such circumstances it would be

unreasonable to expect that centres could guarantee unlimited quantities or immediate availability of all designated germplasm. Users are encouraged to exercise good judgement and appropriate constraint in requests for such materials. At their discretion, centres may request that users cover all or part of the costs involved in multiplication.

Centres are neither obligated nor advised to distribute samples that do not meet health or quarantine standards, or whose transfer could pose the danger of a spread of pests or disease. Centres will inform those requesting materials of the danger which might be posed by invasiveness in those cases where they perceive such dangers to be significant, and of the need for the prior informed consent of the recipient Government for the import of such materials. Materials will then be supplied upon receipt of such prior informed consent.

Article 2 provides that " The list of designated germplasm will be updated every two years as new accessions are added to the collection." This does not preclude Centres from adding new germplasm to the list of designated germplasm without having to wait for the biennial updating of the lists. In such cases, the status of particular germplasm as " designated germplasm" becomes effective immediately upon a centre's determining that it is designating the germplasm under the Agreement and managing the germplasm under the terms of the Agreement. The additional designations will be consolidated into updated lists, which will be notified to FAO every two years or more frequently as may be appropriate.

As management and information systems improve and as genomic information about accessions becomes available, centres will update the list of materials covered under the Agreements. In addition to adding new materials, centres may find, for example, that particular accessions have been designated more than once; that an accession's registration number conveyed to FAO on the list of designated germplasm referred to in Article 2, may be incorrect or no longer correspond to an actual accession in the centre's genebank; or that an accession may, through natural or accidental causes, have lost viability. Logically, such " accessions" will no longer be considered as designated under the terms of the Agreement. The Center or Centers concerned will notify FAO of any proposals for the deletion of accessions from the list of designated germplasm for such reasons and will provide FAO with a statement of the reasons therefore.

Acronyms and Abbreviations

ARO	Advanced Research Organization
CBC	Committee of Board Chairs, CGIAR
CBD	Convention on Biological Diversity
CDC	Center Directors Committee, CGIAR
CGIAR	Consultative Group on International Agricultural Research
DAC	Development Assistance Committee, OECD
ESDAR	Environmentally Sustainable Development Agricultural Research and Extension Group, World Bank
FAO	Food and Agriculture Organization of the United Nations
FC	Finance Committee, CGIAR
GDP	Gross Domestic Product
GFAR	Global Forum on Agricultural Research
GFSC	Global Forum Steering Committee
GRPC	Genetic Resources Policy Committee, CGIAR
IAEG	Impact Assessment and Evaluation Group, CGIAR
ICW	International Centers Week, CGIAR
IFAD	International Fund for Agricultural Development
IPR	Intellectual Property Rights
MTM	Mid-Term Meeting, CGIAR
NARS	National Agricultural Research System (s)
NGO	Non-Governmental Organization
NGOC	NGO Committee, CGIAR
OC	Oversight Committee, CGIAR
ODA	Official Development Assistance
OECD	Organization for Economic Co-operation and Development
ORSTOM	Institut Français de Recherche Scientifique pour le Développement en Coopération
QTL	Quantitative Trait Loci
PAA	Public Awareness Association, CGIAR
PAC	Public Awareness Campaign, CGIAR
PARC	Public Awareness and Resource Mobilization Committee, CGIAR
PSC	Private Sector Committee, CGIAR
TAC	Technical Advisory Committee, CGIAR
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
\$	All financial data are given in US dollars



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