

PANEL COMPOSITION AND BIOGRAPHICAL INFORMATION

CHAIR:

<p>Don R. Marshall Director, Plant Breeding Solutions Pty Ltd, 112 Lindsay St, Hamilton NSW 2303, Australia</p>	<p>Ph: +61 2 4962 1671 Mob: 0425 205 122 Email: MarshallPBS@aol.com</p>
MEMBERS:	
<p>Eugenio Julio Cap Instituto Nacional de Tecnología Agropecuaria Director, Institute of Economics and Sociology (INTA) Cerviño 3101 – 2° floor (1425) Buenos Aires, Argentina</p>	<p>Phone/Fax: (54) 11 4806-5329 Cellphone: (54) 11 15 4189-8648 Email: ecap@correo.inta.gov.ar</p>
<p>Shu Fukai School of Land and Food Sciences Hartley Teakle Building University of Queensland, St Lucia, Brisbane, Queensland, Australia</p>	<p>Email: s.fukai@uq.edu.au</p>
<p>Peter G. Goertz Benschurststrasse #21 D 77839 Lichtenau, Germany</p>	<p>Tel.: +49 7227 1646 Email: GoertzPG@aol.com</p>
<p>Maureen K. Robinson 8217 Hamilton Spring Court Bethesda, MD 20817, USA</p>	<p>Ph: +001 301 365.7503 Fax: +001 301 365.0798 Email: mkrobin500@aol.com</p>
<p>Edward N. Sayegh PO Box. 239 Broumana, Lebanon</p>	<p>Phone/Fax (961-4) 873 819 Mobile (961-3) 876 867 Email: edwardsayegh2020@yahoo.com</p>
RESOURCE PERSONS:	
<p>SC Secretariat Sirkka Immonen (Panel Secretary) Senior Agricultural Research Officer iSC Secretariat, FAO, SDdC, C634 Viale delle Terme di Caracalla 00100 Rome, Italy</p>	<p>Tel.: (39 06) 570 54861 Fax.: (39 06) 570 53298 E-mail: Sirkka.Immonen@fao.org</p>

<p>CGIAR Secretariat Manuel Lantin Science Adviser, CGIAR The World Bank 1818 H Street NW MSN G 6-601 Washington D.C. 20433, USA</p>	<p>Tel.: (1 202) 473 8912 Fax.: (1 202) 473 8110 E-mail: m.lantin@cgiar.org m.lantin@worldbank.org</p>
--	---

BIOGRAPHICAL INFORMATION

MARSHALL, Don (Australia)

Position: Professor Emeritus; Director, Plant Breeding Solutions, Pty Ltd.

Expertise: Genetics and Plant Breeding

Education: Ph.D., Genetics, University of California, Davis (1968); B.Sc. Agr. Agronomy, University of Sydney (1963).

Experience: Retired from University of Sydney; currently part-time consultancy with Plant Breeding Solutions. 1991-2003: Professor of Plant Breeding and Director, Plant Breeding Institute, The University of Sydney, NSW Australia. 1986-91: Professor of Agronomy, University of Adelaide. 1981-86: Director, University of Sydney, Wheat Research Centre, Narrabri. 1970-81: Research Scientist and Leader Genetic Resources Section, CSIRO, Division of Plant Industry. 1968-69: Postdoctoral Fellow in Genetics, University of California, Davis. Member of South Australian Wheat & Barley Research Committees; Member Australian Green Legumes Research Council; Founding Director of the Australian Grains Research & Development Corporation; Director of Sunprime Seeds Pty Ltd; Member of Board of Trustees of IPGRI and ICRISAT; Panel Member, CCER, Wheat Germplasm Improvement Sub-Programme, CIMMYT; Panel Member, 4th CIMMYT EPMP and 4th ICARDA EPMP. Fellow of the Australian Academy of Technological Sciences and Engineering and member of several scientific societies. Author of numerous publications.

CAP, Eugenio Julio (Argentina)

Position: Director, Institute of Economics and Sociology, INTA, Argentina

Expertise: Agricultural economics, technology adoption, trade

Education: Ph.D. Agricultural and Applied Economics. University of Minnesota (1992); MSc, Vegetable Crops, University of California, Davis (1982); Ingeniero Agrónomo. Facultad de Agronomía y Veterinaria (School of Agriculture and Veterinary Medicine), University of Buenos Aires (1973)

Experience: Current position since 2000; 1998-2000: Assistant to the Director General of INTA for Strategic Affairs. 1992-1998: Director of Strategic Planning, INTA. 1987-1992: Graduate Studies at the University of Minnesota, Saint Paul and Minneapolis, USA. 1977-1984: Head of the Rural Extension Service. INTA. Florencio Varela, Provincia de Buenos Aires, Argentina (1980-82: Graduate Studies at UC Davis). 1973-1977: Extension Officer, INTA, Provincia de Buenos Aires, Argentina. 1992-93: Member of the International Coordinating Committee of the Institutional Development Subprogram at PROCISUR, Montevideo, Uruguay. 1993-96: National Coordinator for Argentina in the Institutional Development Subprogram at PROCISUR. Has received an award for Outstanding Doctoral Dissertation by the Department of Agricultural and Applied Economics, University of Minnesota. Nomination to the National Outstanding Doctoral Dissertation Competition of the AAEA (American Agricultural Economists Association). Memberships include: Gamma

Sigma Delta, The Honor Society of Agriculture (1991); Honor List. Department of Agricultural and Applied Economics. University of Minnesota (1990 and 1991). Consultancies include: IADB in Venezuela, Uruguay and Washington, D.C., World Bank (in El Salvador), IDB/FONTAGRO, World Resources Institute and FAO (In Uruguay and Argentina).

FUKAI, Shu (Japan)

Position: Professor in Crop Physiology, School of Land and Food Sciences, University of Queensland, Brisbane, Australia

Expertise: Crop physiology

Education: PhD in Agronomy, University of Adelaide, 1975; BAgrSc, The University of Tokyo, 1969

Experience: Present position since 2002. 1992-2001: Associate Professor in Crop Physiology, University of Queensland; 1986-91: Senior Lecturer in Crop Science, University of Queensland; 1978-85: Lecturer in Crop Agronomy, University of Queensland; 1976-78: Tutor, School of Biological Science, Macquarie University, Sydney; 1975: CSIRO Postdoctoral Fellow, University of California, Davis, USA. Research interests focus on crop physiology, particularly tolerance to water and low temperature stresses. Experience of leading several research projects include: 2002, Rockefeller Project on selection of drought tolerant rice genotypes; 2000, GRDC project on frost resistance in wheat (with Naidu Bodapati); 2000, ACIAR Project 'Increasing production of lowland rice in Laos, Cambodia and Australia'; 1998- 2000, ARC Project 'Nutrient requirement of tropical crops in Indonesia and Australia'; 1996-2000, ACIAR Project 'Plant breeding strategies for rainfed lowland rice in Northeast Thailand and Laos'; 1992-1996, ACIAR Project 'Plant improvement for rainfed lowland rice in drought prone areas in Thailand and Laos'. Author of over 100 journal papers published in *Field Crops Research*, *Australian Journal of Agricultural Research* and other journals. Senior editor of 4 books including Special issues of *Field Crops Research*.

GOERTZ, Peter G. (Germany)

Position: Director of Research for Maize Breeding in SWS GbR, Rastatt, Germany (Research Company of SAATEN-UNION GROUP)

Expertise: Plant breeding and seed production

Education: Ph.D. in Plant Breeding and Agronomy, University of Hohenheim (1978; research topic: development of maize concept for the Andean Highlands); M.Sc. in Agronomy, University of Hohenheim (1974); B.Sc. in Agriculture, Agricultural College of Bad Kreuznach (1971)

Experience: Present position since 1997. 1982-96: Head of Plant Breeding Section at SWS Seed Company in Rastatt. 1977-81: Agronomist/Breeder; Maize Research Team, CIMMYT, Mexico. 1975-76: Research Fellow, CIMMYT. 1974-75: Research Assistant, Institute of Plant Breeding, University of Hohenheim. Dr. Goertz has carried out consulting missions in various parts of the world (Latin America, Asia and Africa) mainly on maize but also on irrigation, agroforestry and biotechnology. The focus of his work has been on the development of proprietary germplasm for temperate growing areas; the selection of maize inbreds for the maize seed industry in Europe, USA and China; the design of specific maize breeding programmes for silage quality, food grade quality and natural resistance mechanisms; the release of new varieties and hybrids to seed markets (EU, Canada, USA and various Eastern European countries); the development of proprietary germplasm in durum-wheat; and to the use of worldwide maize genetic resources in applied maize breeding programmes.

ROBINSON, Maureen (USA)**Position:** Consultant**Expertise:** Governance, management, leadership and organizational development**Education:** B.A., The George Washington University (1974)**Experience:** Since 1998, private consulting practice; 1990-1998, founding Director of Education, National Center for Nonprofit Boards; 1987-1990, Special Assistant, Office of the Assistant Secretary for Museums, Smithsonian Institution; 1979-1985, Director of Government Affairs; 1975-1979, Associate Editor of Publications, American Association of Museums. Publications: Nonprofit Boards that Work: The End of One-Size-Fits-All Governance, John Wiley & Sons, 2001; columnist, Contributions Magazine, 2002-present, writer/editor, CGIAR Board Reference Guides, (7 booklets), 1997; Developing the Nonprofit Board: Strategies for Educating and Motivating Board Members, National Center for Nonprofit Boards, 1994; The Chief Executive's Role in Developing the Nonprofit Board, National Center for Nonprofit Boards, 1998.**SAYEGH, Edward (Lebanon)****Position:** Chief Executive Officer and Founder of the Centre for Non-Profit Governance, Lebanon and USA.**Expertise:** International relations, management and administration, financial and human resources management, operational controls**Education:** Advance Management Programme, The Wharton School of the University of Pennsylvania, USA (1994); MSc in Management (Sloan Fellow), London Business School (1986); BSc, American University of Beirut (1968)**Experience:** Present position since 2004. 1998-2003: Associate Director General and Board Secretary, WorldFish Centre. Took the lead the negotiating the headquarters agreement with the Malaysia Government, relocating the Centre from the Philippines to Malaysia and supervising the building of the Centre headquarters in Penang, Malaysia including hiring of staff; 1987-97: Treasurer and Director for Finance with Administrative Functions, IRRI; 1978-87: Financial Controller and Treasurer also handled Administration (1984-87), ICARDA; 1978-81: Station Financial Officer 1966-77: Senior Financial Officer/Acting Comptroller at the American University of Beirut; and Partner in an auditing and accounting firm in Beirut; Consultant, General Motors (1986), USA and to various donors on governance, general management and financial management (1986-present); Vice Board Chair and Chair of the Audit Committee of the Association of International Agricultural Research Centers (1990-2002). Member of the American Management Association, British Institute of Management and Institute of Management Accountants, USA.

**TERMS OF REFERENCE
FOR EXTERNAL PROGRAMME AND MANAGEMENT REVIEWS
OF CGIAR CENTRES**

BACKGROUND

Context

1. The Consultative Group on International Agricultural Research (CGIAR) is an informal association of over 50 members that supports a network of 16 international research centres in agriculture, forestry and fisheries. The CGIAR aims, through its support to the Centres, to contribute to promoting sustainable agriculture for food security in developing countries. Because the Centres constitute the core of the CGIAR, the effectiveness of each Centre is crucial to the continued success of the CGIAR (as a System).
2. Each Centre is an autonomous institution operating within the mandate assigned to it by the CGIAR, and is governed by a legally constituted Board that has full fiduciary responsibility for managing the Centre. To ensure accountability in an essentially decentralized system, each Centre is expected to be responsive to the CGIAR, which provides financial support for its work.
3. The CGIAR has established a tradition of External Programme and Management Reviews (EPMRs) to provide a mechanism of transparency and accountability to the Members and other stakeholders of the CGIAR System. EPMRs are the joint responsibility of SC and the CGIAR Secretariat, and are conducted for each Centre approximately every five years. As each Centre is autonomous, EPMRs provide a measure of central oversight and serve as an essential component of the CGIAR's accountability system.

Integrated System of Reviews of Each Centre

4. Besides the EPMRs, Centre Commissioned External Reviews (CCERs) are undertaken at each Centre. These CCERs are commissioned by the Centre Boards to periodically assess the quality and effectiveness of particular aspects of a Centre's work. The terms of reference (ToRs) for each CCER are determined by the Centre, based on broad principles endorsed by the CGIAR at ICW95 (ref. document entitled *Improving the Quality and Consistency of CGIAR's External Centre Reviews*, dated October 24, 1995).
5. EPMRs complement the CCERs by providing a CGIAR-commissioned and comprehensive external assessment of the Centre's program and management, especially its future directions and the quality and relevance of its research. The ToRs for the EPMRs (which update the "standard ToRs" endorsed by the CGIAR at MTM95) are provided below. Guidelines for undertaking the reviews are issued separately.

TERMS OF REFERENCE

Objectives and Scope

6. EPMRs seek to inform CGIAR members that their investment is sound, or recommend measures to make it so. Members of the CGIAR and other stakeholders can be informed whether the Centre is doing its work effectively and efficiently. EPMRs are both retrospective and prospective; and help ensure the Centres' excellence, relevance and continued viability, and the CGIAR System's coherence. Each review is expected to be strategic in orientation and as comprehensive as the situation warrants.
7. The broad objectives of EPMRs are to: a) provide CGIAR members with an independent and rigorous assessment of the institutional health and contribution of a Centre they are supporting; and b) to provide the Centre and its collaborators with assessment information that complements or validates their own evaluation efforts, including the CCERs.
8. The EPMR panel is specifically charged to assess the following:
 - a) The Centre 's mission, strategy and priorities in the context of the CGIAR's priorities and strategies;
 - b) The quality and relevance of the science undertaken, including the effectiveness and potential impact of the Centre's completed and ongoing research;
 - c) The effectiveness and efficiency of management, including the mechanisms and processes for ensuring quality; and
 - d) The accomplishments and impact of the Centre's research and related activities.
9. The topics expected to be covered by the EPMRs are listed below.

TOPICS TO BE COVERED

A. Mission, Strategy and Priorities

- The continuing appropriateness of the Centre's mission in light of important changes in the Centre and its external environment since the previous external review.
- The policies, strategies, and priorities of the Centre, their coherence with the CGIAR's goals (of poverty alleviation, natural resources management, and sustainable food security), and relevance to beneficiaries, especially rural women.
- The appropriateness of the roles of relevant partners in the formulation and implementation of the Centre's strategy and priorities, considering alternative sources of supply and the benefits of partnerships with others.

B. Quality and Relevance

- The quality and relevance of the science practised at the Centre.

- The effectiveness of the Centre's processes for planning, priority setting, quality management (e.g., CCERs, peer reviews and other quality and relevance assurance mechanisms), and impact assessment.

C. Effectiveness and Efficiency of Management

- The performance of the Centre's Board in governing the Centre, the effectiveness of leadership throughout the Centre, and the suitability of the organization's culture to its mission.
- The adequacy of the Centre's organizational structure and the mechanisms in place to manage, coordinate and ensure the excellence of the research programs and related activities.
- The adequacy of resources (financial, human, physical and information) available and the effectiveness and efficiency of their management.
- The effectiveness of the Centre's relationships with relevant research partners and other stakeholders of the CGIAR System.

D. Accomplishments and Impact

- Recent achievements of the Centre in research and other areas.
- The effectiveness of the Centre's programs in terms of their impact and contribution to the achievement of the mission and goals of the CGIAR.

GUIDELINES FOR EXTERNAL PROGRAMME AND MANAGEMENT REVIEWS OF CGIAR CENTERS¹

INTRODUCTION

1. External Programme and Management Reviews (EPMRs) of CGIAR-supported Centres are carried out in accordance with the process Guidelines outlined below and the Terms of Reference (TORs) issued separately. These guidelines were essentially drawn from those that governed the external reviews of Centres for many years. Some changes have been introduced primarily to make these Guidelines consistent with the current practices and recent changes in the CGIAR.

Each review is expected to be strategic in orientation and as comprehensive as the situation warrants. To be credible and acceptable, all reviews must strive to be objective, transparent and participatory. The reports must be direct, explicit and frank. These principles are observed throughout the review process.

2. Being a member of a review panel is usually an interesting and rewarding experience. Moreover, Centre management and staff generally welcome the opportunity to discuss with panel members their achievements, concerns and future plans. A healthy atmosphere of mutual respect and collaboration in the interchange of ideas is the key to the success of the review. It helps to ensure that the recommendations of the panel are realistic, are well understood by the Centre management and staff, and will be willingly, or even enthusiastically, implemented.

GUIDELINES

3. EPMRs are expected to maintain high standards of quality and rigor, and be conducted by an independent and objective panel. The EPMR is expected to assess the Centre in terms of its: mission and strategy, programme priorities; quality and relevance of its science; achievements and impact; and effectiveness and efficiency of management, as noted in the TORs.

4. It is inevitable that the conduct of a review requires the collaboration of numerous individuals; as well as a process that enables the various participants to collaborate effectively in a complex assessment that has to meet high expectations and tight deadlines. The main participants in an EPMR are: the EPMR panel Chair and members; the CGIAR Members, the Science Council and its Secretariat, and the CGIAR Secretariat; members of the Centre's Board, management and staff; the panel's support team of external consultants and resource

¹ Revised in 2003

persons from the SC and CGIAR Secretariats; and the Centre's many partners at the local, national, regional and international levels.

ROLES AND RESPONSIBILITIES

5. **The CGIAR, SC and the Secretariats.** The CGIAR establishes external review policies for the System, and EPMRs are conducted on its behalf, in accordance with the TORs endorsed by the Group. For each review, CGIAR Members are requested to propose Centre-specific issues for the panel to consider, and receive the review report. The SC commissions the EPMR generally according to the 5-yearly schedule. The SC and the CGIAR Secretariat are responsible for the coordination and management of the EPMR and provide guidance on matters of review design and panel composition, in consultation with the Centre's Board and management. The SC focuses on all programmatic aspects of the review, while the CGIAR Secretariat focuses on the governance and management aspects of the review.

6. Senior staff members of the SC and CGIAR Secretariats serve as resource persons throughout the review process. The SC Secretariat resource person accompanies the panel Chair and members during their visits to the Centre and occasionally on field visits. He/she provides substantive briefings on technical matters and on the recent developments in the CGIAR, compiles documents relevant for programme evaluation and assists the panel on process matters, including the logistical aspects of report preparation and production. The CGIAR Secretariat resource person compiles documents related to CGIAR governance and management and assists the panel in management aspects of the review. However, to help safeguard the EPMR panel's independence and objectivity, the Secretariats' resource persons are not normally expected to undertake substantive review, analysis or writing responsibilities on behalf of the panel.

7. **The Panel Chair, Members and Consultants.** The leadership and task management skills of the panel Chair are obviously critical, as are the expertise and experience of panel members. The Panel Chair is appointed by SC in consultation with the CGIAR Secretariat and the Centre. The Chair's involvement begins early on, when he/she is consulted regarding panel composition, and briefed by SC Chair about the review process and key issues and concerns regarding the Centre. Once the review is underway, the Chair is responsible for ensuring that the panel undertakes its assessment and completes the task in accordance with the TORs and Guidelines for EPMRs. Given the magnitude of the task, the complexity of the issues, the fact that many panel members may be unfamiliar with the CGIAR, the importance of maintaining dialogue with the Centre, and the need to produce a report that reflects the consensus of the panel, the Chair's task is a demanding one.

8. Because the report should reflect the judgement of the whole panel, all members of the panel are expected to contribute to all aspects of the review report. Staff provided by the Secretariats assist the panel Chair and members throughout the process, as appropriate. Consultants are also provided to the panel, as needed, for limited periods of time, for assessment of specialized areas. While these consultants and resource persons from the Secretariats (and sometimes a SC member) support the panel's efforts as members of a team, ultimately the panel is responsible for formulating the assessment and recommendations of the EPMR report.

9. **The Centre Board, Management and Staff.** The Centre's Board, management and staff play a crucial role in the conduct of the review. They are heavily involved in planning the review, and subsequently in organizing the review and preparing for the panel's visits to the Centre and to the field. Once the review is underway, it entails a significant degree of interaction between the EPMR panel and Centre staff, as part of a valuable two-way learning experience. Throughout the process, the collaboration and inputs of Centre management and staff are essential for the review to run smoothly and for the report to be credible and acceptable.

10. **The Centre's Partners.** Representatives of national agricultural research systems (NARS), regional fora, bilateral and multilateral agencies, NGOs and the private sector are important partners of CGIAR Centres, and their input is considered essential for the viability of the EPMR review process. As part of the review, representatives of such organizations are consulted for their views on the Centre's strategy, programmes and collaboration. This may be through panel visits and/or meetings, as well as through questionnaires or interviews. The panel may also visit or contact managers and researchers from other CGIAR Centres and other relevant institutions with which the Centre collaborates. Such consultations are valuable as a means of assessing the Centre's role in the CGIAR and in the global context. Given the vast number of collaborators or potential partners of a Centre, such meetings must be limited. Their outcome is considered important, however, and is expected to feed into the panel's assessment of the Centre.

Panel Composition and Report

11. **Panel Composition.** The review panel is composed of experts in programme and management areas relevant to the Centre being reviewed who can carry out a comprehensive assessment and give the CGIAR their best judgement about the past performance and future potential of the Centre. The panel is expected to make an independent assessment based on its own observations and other information available to it, particularly the evidence provided through CCERs (see below).

12. The EPMR panel normally consists of five members, including the Chair. Panel members are generally selected for their ability to focus on the institution-wide issues relating to the Centre's mission, strategy, priorities, programmes and management. To ensure adequate coverage of the TORs, the panel composition usually meets the following requirements: a) the Chair and at least two panel members are familiar with the CGIAR; b) at least two panel members have a technical background relevant to the Centre being reviewed; and c) at least one panel member has expertise in institutional governance and/or research organization and management.

13. **Panel Report.** The EPMR report is expected to present an accurate account of the outputs and what is known about the impact of the Centre during the review period. It is expected that in-depth reviews of particular programme or management areas would have been undertaken earlier through CCERs - and would not normally need to be undertaken by the EPMR panel. This enables the EPMR panel to concentrate on the important strategic issues rather than on specialized detailed assessments of each programme, project or activity.

14. Because research in the CGIAR System is a long-term undertaking, the problems the Centre is working on may not have visible outputs until several years from now. For this

reason, the review report is expected to provide convincing evidence on the quality and relevance of the completed and ongoing research, and the efficiency with which the work is conducted, as a surrogate measure of the potential impact of the Centre's current programme of work.

15. Although the EPMPR report is expected to be comprehensive, the panel has considerable leeway in deciding on what issues it would focus in depth. The review report highlights the most significant issues faced by the Centre and makes recommendations on how the Centre (or the CGIAR) could address them. It provides assurances and convincing evidence to indicate that other aspects of the Centre's programmes and management (i.e., those not covered by the panel's report in depth) are effective and efficient. It also comments on the effectiveness of the Centre's internal review system on which the EPMPR was based, and on how well the Centre has addressed the recommendations of the other reviews commissioned by the Centre.

Integration with Centre Reviews

16. It is expected that some detailed high-quality CCERs would have been completed within 2 or 3 years preceding the main phase of the EPMPR. The CCERs are undertaken by specialized external consultants, assisted by members of the Centre Board and staff as resource persons (not participants). They are expected to cover at least portions of the Centre's main research programmes (including their relevance, direction, science quality, achievements, and, to the extent possible, impact) as well as aspects of Centre management (including governance, research organization and management, finance and human resource management).

17. The Boards would decide which CCER reports are made available, at the time of their completion, to the Panel. These reports are made available to the EPMPR panel, along with reports of the follow-up actions planned or taken by the Centre's management and Board. Other analytical papers - particularly internal assessments of programme performance and impact - and other background documentation prepared by the Centre are also provided to the panel, at the discretion of the Centre. The Centre is responsible for providing this information in an easily accessible and usable form, so that the EPMPR panel's conclusions can be based on a comprehensive and thorough review of all aspects of the Centre.

18. The CCERs - which are often very detailed and comprehensive - provide essential evaluative information to the EPMPR panel on particular aspects of the Centre's programme and management. Their availability in advance of the initial phase of the EPMPR helps create an integrated system of Centre- and CGIAR-commissioned reviews of each Centre, and enables the EPMPR to be forward-looking and to focus more on strategic, rather than operational, issues.

19. The EPMPR, then, can serve as a vehicle for analyzing, verifying, and synthesizing the information already available through CCERs and other reviews, and for making this information available to a wider audience outside the Centre. While the Centre's Board and management are responsible for ensuring that the internal evaluation system is sound (in terms of scope, coverage, quality and timeliness), judgements on the adequacy of a Centre's quality assurance system, including the processes for undertaking CCERs and other mechanisms of peer review, are the responsibility of the EPMPR panel.

Board Assessment Visit

20. Interactions between the Centre Board and the panel form an essential component of every review, given the Board's important role in the CGIAR System. Hence, early in the process, prior to (or sometimes during) the first visit of the full panel to the Centre (see below), the panel Chair along with a panel member or consultant specializing on governance issues attend a Board meeting, and interview Trustees concerning Board and Centre matters. This helps ensure the participation of the Board in the planning and design of the upcoming review, including the identification of key issues and concerns of relevance to the EPMR.

21. The visit also provides the panel Chair and selected members or consultant an opportunity to review the documentation provided to the Board, interact informally with individual Board members, observe at least one formal meeting of the Board and its committees, and serve as an element in assessing the Board's effectiveness and operations. The preliminary written assessment of the Board is made available to the panel (but not the Centre), and is modified as appropriate during the main phase of the EPMR (see below).

22. In assessing Board effectiveness and operations, the panel takes into account the key legal documents governing the Centre - particularly the Establishment Agreement, the Headquarters Agreement, and the Constitution of the Centre. It also keeps in mind the main provisions of the *Guidelines for CGIAR Boards* endorsed at MTM95, particularly the guideline on the "Role, Responsibilities and Accountability of Centre Boards of Trustees".

First Panel Visit and Briefing

23. Following the Board assessment visit (or sometimes coinciding with it), the full panel undertakes its first visit to the Centre headquarters for about one week for initial discussions with Centre management, staff and Board members (when the visit coincides with the meeting of the Executive or Programme Committees of the Board). This initial phase visit enables the panel to obtain an overview of the Centre's current activities and future plans, to identify strategic issues to be covered by the review team, and to prepare preliminary drafts of key sections based on an agreed outline of the report which will be completed during the main phase several months later. During the visit, and virtually before that, the panel receives detailed briefings from the SC Secretariat, from CGIAR Secretariat and Centre management on the recent developments in the CGIAR and the Centre being reviewed.

24. The briefing provided by the SC Secretariat resource person cover technical matters such as the CGIAR's mission, priorities, strategies, programmes and impact assessments and an overview of the recent development in the CGIAR. The CGIAR Secretariat resource person provides support to the briefing on management matters such as the CGIAR's governance, organization, finance and human resources. These briefings also cover the CGIAR's expectations regarding the scope and process of the review (as outlined in the TORs and Guidelines for EPMRs); as well as an overview of programme and management issues of relevance to the Centre being reviewed. The SC Secretariat resource person also provides substantive and process-oriented support as requested by the panel Chair. He/she serves as the panel Secretary.

25. The panel then receives briefings from Centre management and senior staff on the Centre's strategy, priorities, programmes, governance and management. These briefings focus particularly on the Centre's recent developments and achievements, CCER findings and conclusions, and future plans. In addition, the panel seeks additional information from other Centre staff, on a selective basis, as needed; and invites Centre staff members, either individually or in small groups, to voluntarily share their concerns, if any, regarding Centre-wide programme and management issues.

26. To help ensure that these briefings and discussions are as comprehensive and up-to-date as possible, and to enable the panel to obtain a comprehensive overview of the Centre's work, the Centre is expected to make available for the SC Secretariat and panel members, in advance of the first visit, the recent CCERs and other assessments undertaken, as well as other relevant Centre-related documentation (such as the latest Strategy document, Medium Term Plan, Programme and Funding Request, and other relevant policy documents or analytical papers prepared by the Centre). Many of these documents are off the shelf, and do not need to be especially prepared for the EPMR. The Centre can also be requested to provide short documents on strategy and vision, detailed documents on outputs and achievements, measures of esteem for professional staff, and other documents requested by the panel Chair to be prepared for the EPMR specifically.

27. Towards the end of this first visit to the Centre, and virtually between the initial and main phases, the panel members prepare preliminary drafts and précis of sections based on the outline of the report agreed by the panel and the writing responsibilities assigned by the panel Chair. This ensures that the panel undertakes a significant amount of preliminary drafting prior to the main phase of the review, and continue its assessment of the key issues and concerns during the period between the initial phase and the main phase.

Field Visits

28. To help ensure that the EPMR panel's assessments are adequately grounded in the reality of the Centre's circumstances, the panel is expected to undertake country field visits, jointly determined by the Centre, panel Chair and the SC Secretariat. The field visits cover the major non-headquarters based operations of the Centre, so as to provide a realistic assessment of the Centre's field operations, working conditions, and interactions with NARS and others in the region. These visits by panel members (as smaller "sub-panels", if necessary) are often for about 3-5 days each, and are undertaken before the main phase of the review.

29. A senior staff member from the Centre normally accompanies the (sub) panel members on these field/country visits, but does not participate in substantive discussions with country officials or representatives of regional fora. The resource person from the SC Secretariat helps coordinate the field visits and may accompany the panel members, as requested by the panel Chair. These visits supplement any surveys of NARS and Centre staff, organized by the resource person from the SC Secretariat in advance of the main phase.

Main Phase and Report Writing

30. The EPMR panel visits the Centre for a period of about 10-12 days to undertake the main phase of the review. At the end of this visit, final draft chapters are shared with the Centre management to ensure their accuracy, and the panel Chair presents the main findings

and recommendations to the Centre management and staff. The Centre may invite Board members from the host country to attend the discussion with the Panel.

31. The EPMR panel's report is expected to focus on the four topics covered in the TORs - namely, the Centre's: a) mission, strategy and priorities; b) quality and relevance of science; c) effectiveness and efficiency of management; and d) what is documented about accomplishments and impact. The report is expected to be succinct and written in plain language, focusing on strategic issues. It can, where relevant, propose forward-looking recommendations on overall direction and priorities (rather than on detailed programme content or operational management). The writing style is expected to be direct, explicit and frank.

32. Since descriptive material and detailed analysis is expected to be kept to a minimum, a report of about 60-70 pages - with suitable cross-referencing (not summaries) of the CCERs - is expected. However, if the CCERs available to the panel are inadequate in quality, coverage or depth, the EPMR panel's report is expected to compensate for gaps through its own analysis and assessment.

33. The panel will prepare final drafts of the EPMR report during the main phase and share them with the Centre management. The final EPMR report is expected to be completed at the SC Secretariat within two weeks from the main visit. It will then be sent to the Centre Board and management. At that time the panel Chair formally transmits the document to the SC Chair and the CGIAR Director.

Response and Follow-up

34. The Board and management of the Centre under review are expected to submit a formal written response to the EPMR report, addressed to the SC and the CGIAR Secretariat. The SC discusses the report in the presence of the panel Chair and representatives from the Centre (including the Board Chair and Director General), and prepares a commentary, in collaboration with the CGIAR Secretariat, including recommendations for follow-up action by the CGIAR or the Centre. The EPMR report, the Centre's written response, and the SC commentary are then submitted to the ExCo. It is discussed by the Program and Finance Committees of the ExCo, and the ExCo formulates recommendations to the Group.

35. As a final step in the review process, the CGIAR discusses the EPMR report and the accompanying comments, including ExCo recommendations, usually at its annual meeting, and agrees on follow-up action. Occasionally, this follow-up includes a CGIAR-commissioned Mid-Term Review (MTR) to monitor closely the Centre's handling of major concerns raised during the EPMR. The Centre's progress in implementing the recommendations of the EPMR is followed-up by the ExCo, which reports on the Centre's progress in meeting the agreed objectives. . Follow-up is done also by the next external review panel five years later, which includes in its external report a mandatory Annex on Centre compliance to the previous external review's recommendations - thus completing the external review cycle.

CONCLUSION

36. EPMRs provide the CGIAR and other stakeholders very valuable information on the accomplishments and future prospects of each Centre funded by the Group. Because they undertake a comprehensive strategic assessment of all key aspects of the institution, such reports from an independent external panel can provide much needed assurance to the CGIAR Members - as well as to the Centre's Board, management, staff and partners - about the Centre's direction and its institutional capacity to produce the desired research results. If significant changes in direction, scope, focus, or mode of work are required, these too can be made on a systematic and periodic basis, based on Board-endorsed EPMR recommendations. In any case, the Centre and the System benefit from such reviews.

ITINERARY OF THE EPMR PANEL

The Panel Chair and the two members responsible for the Management and Governance aspects of the review attended CIMMYT's Board meeting held at CIMMYT Headquarters in El Batan, Mexico 22-23 October, 2004.

The whole Panel, except one absent for personal reasons, visited CIMMYT Headquarters during the Initial Phase from 22 to 27 November, 2004. During this time the CIMMYT Senior Management and Programme staff provided briefings on CIMMYT's strategic planning process, its new mission, vision, strategy and new programme structure, its achievements and management.

Panel members subsequently visited CIMMYT's operations in East Africa (Mozambique, Zimbabwe and Kenya) and south Asia (Bangladesh) to interact with a cross section of CIMMYT partners.

The Panel members prepared drafts sections for the report prior to arriving to the Centre for the Main Phase, which was held from 14 to 24 February, 2005, at CIMMYT Headquarters.

The Panel Chair and two Panel Members met key government officials at the Ministries of Foreign Affairs and Agriculture, and the Mexican NARI, INIFAP, in Mexico City, and visited the local Postgraduate College with which CIMMYT has had a long and fruitful relationship.

During the Main Phase the Panel sought clarification of outstanding issues and produced the final draft of this report. Prior to presenting the final report to the Centre, early drafts of the report had been shared with the Senior Management for any comments, particularly on errors of fact.

The Panel presented the major findings of the report to CIMMYT staff on 25th February. The report was finalised within week from departing CIMMYT.

LIST OF DOCUMENTS PROVIDED TO THE PANEL²**A. Documents Provided by the SC and CGIAR Secretariats***To All Panel Members:*

1. Terms of Reference and Guidelines for External Programme and Management Reviews of CGIAR Centres.
2. Report of the Fourth External Programme and Management Review report of the International Maize and Wheat Improvement Centre (CIMMYT).
3. Report of the Sixth External Programme and Management Review report of the International Rice Research Institute (IRRI).
4. Most recent CGIAR stripe studies involving the Centre (to all or relevant Panel members):
 - Systemwide Review of Plant Breeding Methodologies in the CGIAR (October 2001);
 - Report of the CIMMYT Subpanel on the Systemwide Review of Plant Breeding Methodologies in the CGIAR (March 2000);
 - Chapter 4: Wheat by P.W. Helsey, M.A. Lantican and H.J. Dubin;
 - Chapter 7: Impacts of CIMMYT Maize Breeding Research by M.Morris, M. Mekuria and R. Gerpacio;
 - Assessing the Impact of the Green Revolution, 1960 to 2000.
5. Toward a New Vision and Strategy for the CGIAR.
6. Summary report on Developing CGIAR System Priorities for Research.
7. Extracts from iSC Commentaries on CIMMYT Medium-Term Plans.
8. CGIAR Annual Report.
9. CGIAR Directory.
10. Summary Record of Proceedings of CGIAR Meetings

Supplementary documents, to relevant Panel Members:

11. CGIAR Boards of Trustees Directory, 2002.
12. CGIAR Financial Guidelines and Manuals.
13. Reference Guides for CGIAR International Agricultural Research Centres and their Boards of Trustees:
 - Guide 1: The Role, Responsibilities, and Accountability of Center Boards of Trustees;
 - Guide 2: The Role of the Board Chair;
 - Guide 3: Creating a Well-Balanced Board;
 - Guide 4: Building Effective Board Committees;
 - Guide 5: Choosing a Director General: The Search and Selection Process;
 - Guide 6: Evaluating the Director General: The Assessment Process;

² All these documents were posted at the CIMMYT EPMP Website established for the Panel. Panel members were provided with several other documents, including scientific articles, some of which are referred to in the Report.

- Guide 7: Board Self-Assessment.
- 14. Committees and Units of the CGIAR: Roles, Responsibilities and Procedures:

B. CIMMYT Documents to EPMPR Team

- 15. Charter and Other Basic Documents established by CIMMYT:
 - Declaraciones for CIMMYT, Int.
 - Agreement CIMMYT & Mexico
 - Agreement UNDP & CIMYT
 - CIMMYT Charter
 - CIMMYT Status
- 16. Composition of CIMMYT Board of Trustees (last five years):
 - Board Membership 2000-2004
 - Board Committees 2000-2004
- 17. Board Handbook and Rules of Procedure
- 18. Information Management Systems and Procedures
- 19. Board of Trustees Minutes (since last External Review):
 - Audit Committee Minutes 1997-2004
 - Finance and Administration Minutes 1997-2004
 - Program Committee Minutes 1997-2004
 - Full Board Minutes – April 1997 to March 2004
- 20. CIMMYT Annual Reports:
 - Adding Value for Development: CIMMYT Annual Report 2003-2004;
 - CIMMYT in 2002-2003. Innovation for Development
- 21. Board-Approved Strategic Plan
- 22. CIMMYT Medium-Term Plan
- 23. CIMMYT Organization Chart
- 24. Description of New Decentralized Structure
- 25. List of Professional Staff (national and international)
- 26. Center-Commissioned External Review (CCER) Reports:
 - Rice-Wheat Consortium
 - Wheat CCER Report
 - Maize CCER Report
 - CCER-MTP Project-based management
- 27. Summary of Actions in Response to Last EPMPR
- 28. Agreements for Activities with Other Centers and Institutions
- 29. Tables of Allowances, Benefits and Salary Ranges:
 - Summary of principal benefits for IRS
 - IRS Salary Scale
 - Summary of principal benefits for NRS based in Mexico
 - NRS Salary Scale
 - Summary of principal benefits for NRS based in the regional offices
- 30. Table of Personal Data on Professional Staff by Program
- 31. Table Summarizing Staff Turnover (last five years)
- 32. Summary of Staff Reduction and Rationalization Program
- 33. International Staff Vacancies
- 34. Staff Manual:
 - IRS
 - NRS based in Mexico, Nepal, Bangladesh, India and Zimbabwe

35. Local Compensation Surveys:
 - CGIAR Review of Total Compensation
 - Review of NRS Compensation at Mexico
 - Zimbabwe Compensation Survey
 - C Zimbabwe Compensation Survey
36. Performance Management System:
 - IRS Performance Assessment and Appraisal
 - NRS Form – Technical Staff
 - NRS Form – Administrative Staff
 - NRS Form – Head, Supervisor and Professional Staff
37. Promotion and Staff Development Policies:
 - IRS Compensation and Classification and Compensation Manual
 - NRS based in Mexico
 - NRS based in Nepal and Zimbabwe
38. Recruitment Strategy for Implementation of the New Strategy
39. Succession Planning Process and Plans for Continuity
40. Reports of External Auditors:
 - Independent auditors’ report to the CIMMYT Board of Trustees
 - Report to the Audit Committee Observations and Recommendations arising from the 2003 and 2002 Audits
 - Notes to combined financial statements
41. Most Recent Internal Audit Reports
42. Major Internal Audit Recommendations/Findings:
 - Report on A Review of Project Costing. Recommendations and Management’s Response
 - Major Internal audit Recommendations 2002-2004
43. Summary Revenues and Spending by Funding Type
44. List of Loans and Credit Facilities
45. Financial Management/Information Management Systems
46. Financial Package Provided to the Board of Trustees
47. Summary of Indirect Cost Recovery System
48. Board-Approved Investment Policy
49. Center Priority Setting and Resource Allocation
50. Current Projects
51. Project Proposal Costing
52. Corporate Services Division Structure and Organization
53. Functions and Responsibilities of IT and Communication
54. List of Center Current Policies and Guidelines
55. Current Matrix of Authority Levels
56. List of Systemwide Activities
57. Challenge Program Governance and Management
58. Physical Plant and Infrastructure Management and Maintenance
59. Farm Operations and Management
60. Fifth EPMP Science Briefing
61. CVs of International Research Staff
62. CIMMT IRS List
63. Research Highlights: (Biotechnology, Economics, Maize, Natural Resources, Wheat)

CIMMYT'S RESPONSE AND 2004 UPDATE TO THE RECOMMENDATIONS OF THE FOURTH EXTERNAL PROGRAMME AND MANAGEMENT REVIEW, AND THE 5TH EPMR PANEL'S OBSERVATIONS

Recommendation 1

The Panel **recommends** that the Wheat Programme initiate an integrated global programme to monitor the racial composition of the populations of stem, leaf; and stripe rust in the major epidemiological regions of the developing world, and help develop complementary research capacity in key NARS.

Response

The wheat programme proposes a strategy to launch an integrated global epidemiology based on nine regions, each with a coordination centre and laboratory base. Pathogenicity surveys through race analysis and adult plant reactions would then be used for monitoring through a system of trap nurseries. NARS, in many cases, have trained pathologist and CIMMYT will seek to enhance this capacity.

Action since 1998

A global network for rust monitoring and racial virulence studies has been established however, to a certain extent, the network is hampered by global phytosanitary requirements. At the same time, it is noted that capacity building in key NARS [Kenya, Turkey and Central Asia] will reduce the need for exchange of isolates and so help overcome the phytosanitary barriers.

Panel observations:

A global network for rust monitoring has been established using regional rust nurseries (GRMN: Global Rust Monitoring Nursery). The system, which involves cooperative arrangements with some 30 NARS, appears to be working well.

Recommendation 2

The Panel **recommends** that the Wheat Programme move to develop breeding strategies that guarantee CIMMYT germplasm carries effective combinations of genes to all three rust diseases.

Response

Significant progress has been made; for example, it is widely recognized that CIMMYT's breeding programme already combines McFadden's Hope and Brazilian's Frontana. In the past twenty years, no major epidemic of the stem rust or leaf rust has been reported. Our genetic analyses indicate that we have incorporated six genes (including Sr2) to stem rust and at least ten minor genes to leaf rust. CIMMYT is now developing conventional pathological markers and molecular markers to identify top crosses with yellow rust durability.

Action since 1998

Minor gene durable resistance is being incorporated into the breeding program for yellow rust, stripe rust and leaf rust. The shuttle breeding methodology has enabled assessment of

leaf and yellow rust at both Toluca and Obregon; two sites quite different agroecologically. In addition, there is a considerable effort in Biotechnology into identifying markers for durable resistance in two major complexes for leaf rust (Lr34) and yellow rust (Yr46).

Panel observations

CIMMYT is working to incorporate durable resistance for all three rusts into advanced germplasm.

Recommendation 3

The Panel **recommends** that the Wheat Programme develop full costing of the output of its present wheat, triticale, and barley breeding programmes and examine potential cost benefits of the incorporation of double haploid and marker assisted selection technologies in these breeding programmes.

Response

CIMMYT believes that the approach described in this recommendation is part of effective research management. We also note recommendations 7 and 9 in which it is implicit that biotechnology and genetic engineering will be incorporated into mainstream maize and wheat breeding efforts. Recent studies at CIMMYT have shown encouraging results for the double haploid system, and we believe that it may be efficient for characters such as quality and disease resistance.

Action since 1998

There has been some work on costing new technologies with the Economics Program and also on a simulation project (GRDC-funded) that is modeling breeding methodologies to determine the most efficient interventions, especially in the use of molecular markers. CIMMYT is planning to develop more accurate costing of field plots based on a model in use in Australia.

Panel observations

Despite the fact that CIMMYT Management initially saw the approach described in this Recommendation as part of effective management, 7 years later it still has not been done. This failure restricts the capacity of CIMMYT to use full cost recovery for the breeding components of projects financed by special project or restricted funds. It also limits the capacity of breeders to make rational decisions based on cost as to when and where to replace established technologies (e.g. disease testing in the field) with new technologies (e.g. molecular markers for disease resistance).

Recommendation 4

The Panel **recommends** that the Wheat Programme make a concerted effort to seek additional funding for triticale and barley research without which the future viability of these programmes is at risk. In the case of barley this needs to be done in close collaboration with ICARDA. If this is not possible, or not successful, then serious consideration will need to be given to the discontinuation of the breeding of these crops.

Response

CIMMYT's agrees that extra funds are needed for the barley and triticale programmes particularly in the area of adaptive research however we also consider that the current effort is viable.

Action since 1998

Additional funding for triticale and barley has been available recently however, the funding of these two crops continues to be a challenge. Budget allocations for triticale have been severely reduced to the point where only a basic maintenance breeding program is underway.

Panel observations

Funding for triticale and barley research remains a significant challenge for CIMMYT. Both are only a minor component of the Centre's overall programme but both are important, or potentially important, regionally. It is not clear from CIMMYT's new strategic plan where projects on these fit in or how they will be funded in the future.

Recommendation 5

The Panel **recommends** that the Maize Programme place greater emphasis on the development of new heterotic populations that incorporate both improved yield potential and increased stress tolerance and make these populations available to NARS and the private sector.

Response

CIMMYT agrees that the development of populations in heterotic pairs increases the possibility of obtaining lines for each population that are heterotic to each other however notes that this is not guaranteed. We have accumulated substantial evidence that a high and acceptable level of heterosis can be obtained between lines from the same population. Nonetheless, we plan to augment heterosis by pairing populations and using reciprocal recurrent selection to improve the probability of heterotic combinations between lines derived from that pair.

Action since 1998

This recommendation has been taken on board by the Director of the Maize Program since he assumed leadership in 1998 and since then the program has increased its emphasis on population development in comparison with the development of lines and hybrids. A science review of the Maize Program in 2002 had also assessed this recommendation and observed that, indeed, there has been significant progress with population development and that there are now a greater number of gene pools and populations being improved using reciprocal recurrent selection for development of OPVs, synthetics, and hybrids.

Panel observations

This Recommendation has been largely achieved and in maize breeding at CIMMYT increased emphasis has been given to population development, especially since 1998, with a focus on generating heterotic combinations for use in commercial cultivars by both NARS and private sector breeders.

Recommendation 6

The Panel **recommends** that the Maize Programme increase the flow of information and germplasm between maize researchers in Regional projects and at headquarters by convening an annual meeting that includes maize scientists involved in germplasm improvement.

Response

CIMMYT's new project structure ensures that there are better working links between regional-based and Mexico-based maize researchers. For example leadership of Global Project 4, concerned with increasing maize productivity and sustainability in stressed

environments resides in Zimbabwe, with a large number of headquarters staff included in the project team.

In addition, we plan to conduct an annual meeting of all CIMMYT researchers at headquarters - the first of these meetings is scheduled for November 1998. We also anticipate that a program wide database of genotype-specific data will be established, allowing more timely and efficient exchanges of information between locations.

Action since 1998

This recommendation has been implemented with program meetings involving HQ and regional staff convened during CIMMYT's annual project reporting week together with the development of a single announcement of all new CIMMYT materials regardless of where they have been developed. There is also one system of pedigree management 'FieldBk' that allows easier sharing of information. A further initiative involves the development of the MaizeFinder system which contains germplasm information in Dbase which is then linked to MaizeDB. MaizeFinder will be developed into a PC-based system and it was noted that this will make the system particularly attractive for NARS and other partners as materials may be ordered on the internet.

Panel observations

This Recommendation has been partially implemented. The interaction between maize researchers at headquarters and outreach (partners and CIMMYT staff) has improved. This Recommendation can be achieved in a short time if greater emphasis is given to the improvement of data management.

Recommendation 7

The Panel **recommends** that the Maize Program fully incorporate marker-assisted breeding approaches into the mainstream maize breeding effort, which will require clarification of the roles and responsibilities of the Maize Programme and the Applied Biotechnology Centre.

Response

CIMMYT's maize programme is committed to using the new plant breeding tools provided by biotechnology using two guiding principles:

- a) CIMMYT will test new techniques in a practical maize breeding program as they become available; we need to be in the position of providing responsible advice on their use to NARS.**
- b) The choice of crop improvement techniques will always take into account the cost effectiveness of a technique.**

One of CIMMYT's new MTP projects, Frontier Project 6, will undertake an analysis of the cost effectiveness of marker assisted breeding and genetic engineering vs. conventional approaches.

Action since 1998

There has been progress with the use of molecular markers, especially the marker for QPM (opaque-2 gene); about 20,000 samples per year are now routinely analysed using this marker. Marker Assisted Selection (MAS) is also in use for Maize Streak Virus (MSV) in a collaborative project between the Maize and Applied Biotechnology Programs; MSV is not present in Mexico but is an important disease in Sub Saharan Africa. Markers are also being sought for Fusarium, post harvest weevils, borers, and drought. [There is also work with downy mildew resistance on chromosome 6, fingerprinting of inbred lines, heterotic patterns,

markers in the IRMA project, insect resistance mapping in DGIS projects in Africa and, QPM].

Panel observations

It has not been possible to fully implement this Recommendation in the mainstream maize breeding programme. At present the MAS system is operating maize only for QPM and MSV selection programmes. It is expected that more intensive use will be made in the mainstream CIMMYT breeding programme in the near future with the advent of the Generation CP. However due to the complexity of the major traits of importance in maize in marginal environments MAS technology as it stands has its limits.

Meanwhile the genetic gains made in the maize improvement programmes at CIMMYT has reached an outstanding level. Turning these results into improved cultivars that enhance production in resource poor farmers fields would seem to be a higher priority than prematurely applying MAS to the mainstream breeding efforts of CIMMYT.

Recommendation 8

The Panel **recommends** that the Maize Program thoroughly investigate the reason for lack of adoption of improved maize OPVs and hybrids on more than 40% of the maize area in developing countries.

Response

CIMMYT accepts the challenge to identify factors affecting the degree of adoption of improved maize although the substantiation of this recommendation is not clear to us. We expect to develop further and teach participatory maize breeding methodologies to meet specific community needs in areas where there has been a major investment in maize breeding yet adoption rates are much lower than expected.

A study of factors affecting adoption rates is timely and it is anticipated that such a study may result in region specific breeding strategies and products and in a better definition of the comparative advantage of the Maize Programme vis-a-vis the private sector.

Action since 1998

This issue was highlighted in the 2002 “Maize Facts and Trends”. Some of the issues include: increased on-farm research; and, a lack of seed production programs for OPVs. Technology transfer programs have been intensified since 1998, particularly with the introduction of “Mother-baby” trials in Eastern Africa (1600 sites) and Southern Africa (1500 sites) in 2002 alone. CIMMYT has also commenced a number of new initiatives for seed production and distribution including a Rockefeller Foundation funded project in Kenya and Uganda and USAID funded efforts in the nine (9) SADC countries.

Panel observations

The area referred to in the Recommendation includes the more difficult production environments. There is now both better germplasm available for the production of cultivars targeted specifically at these environments as well as a better understanding of the factors restricting uptake in the past. Progress in moving improved cultivars into marginal production environments in maize is still slow. Yet if CIMMYT is to achieve its new goal of reducing poverty and improving livelihoods, this is precisely the environments where more rapid progress needs to be made. This Recommendation has been partially accomplished.

Recommendation 9

The Panel **recommends** that the Applied Biotechnology Centre, in collaboration with the Wheat and Maize programmes, develop clear joint research plans with agreed priorities and focus for wheat and maize biotechnology and genetic engineering. Particular emphasis should be given to how these technologies will be incorporated into the CIMMYT wheat and maize breeding activities.

Response

CIMMYT agrees with the recommended joint priority setting process. See also our comments on recommendations 3 and 7.

Action since 1998

During CIMMYT's annual Project Week, there is discussion of the role of biotechnology in the relevant global projects. CIMMYT has also established a new service laboratory- staffed with 50% of an IRS scientist and 6 technicians- to provide marker services and fingerprinting for genetic diversity studies.

Panel observations

This Recommendation has only been partially met. The issue has been whether CIMMYT biotechnology should undertake cutting edge research in its own right and if so, how will it impact on poverty or provide services to other programmes. The bias to date has been the former. As a result the support for marker screening is still below what is needed by the breeding programmes and the CCER of CIMMYT's Wheat Breeding Activities recommended they should be strengthened. The level of interaction between the maize breeders and the Applied Biotechnology Programme (ABP) was probably less effective than that between the wheat breeders and the ABP

Recommendation 10

The Panel **recommends** that the Natural Resources Group make conservation tillage and related soil and crop management practices the primary research focus of the NRG, with the goal of quantifying the effects of conservation tillage on water and nutrient use efficiency, soil quality, and productivity of maize and wheat based systems.

Response

CIMMYT endorses this focus and notes that the conservation tillage and residue management themes are already central to its work in Natural Resources. They are the key elements of Frontier Project 7 which is concerned with resource degradation issues in maize and wheat systems.

Action since 1998

This recommendation has been addressed, particularly in South Asia (resource conserving technologies in rice-wheat cropping systems), and in Southern Africa (soil fertility and maize-based cropping systems). It is also noted that one of CIMMYT's original MTP frontier projects (F7: Learning to more effectively confront problems of resource degradation in maize and wheat systems) had become a global project (G9: Conservation tillage and agricultural systems to mitigate poverty and climate change).

Panel observations

The Centre has partially accomplished this Recommendation with the natural resources activities focusing on conservation tillage and related practices. However, quantifying the effect of conservation tillage on water and nutrient use efficiency, and soil quality needs further work in regional programmes of CIMMYT. This may be achieved through collaboration with ARIs.

Recommendation 11

The Panel **recommends** that the Natural Resources Group establish a critical mass of scientific expertise in Frontier Project 7 to improve research efficiency and the complementation of strategic and applied research on conservation tillage systems.

Response

CIMMYT agrees to strengthen the input of Maize and Wheat Programmes in Frontier Project 7. In addition, CIMMYT proposes to continue with the innovative use of consultants, associates and collaborative projects in pursuing priority themes within this project.

Action since 1998

Due to the relatively small size of the Natural Resources Group, almost all activities involve collaboration with the Maize and Wheat (and Economics) Programs.

Panel observations

The Centre has accomplished the Recommendation by increasing collaboration between the former NRM, Maize and Wheat Programmes, and recently through the integration of NRM with the commodity research within the ecoregional programmes.

Recommendation 12

The Panel **recommends** that the Economics Program determine, in discussions with the RCC, the balance of its research activities in institution-wide activities, support to other programmes, support to NARS, and its own frontier research.

Response

CIMMYT agrees that there should be a balance of activities under these headings however we also maintain that, under the new MTP project structure, the role of the Economics program and the input it makes is appropriate and balanced and has been determined following extensive consultation with partners, including NARS.

Action since 1998

CIMMYT agrees that this recommendation requires further discussion; quantifying the current balance of activities in the program would be a most useful exercise.

Panel observations

The former Economics Programme did not address this and nor has it yet been addressed by the current Social Science Group or within the ITA Programme. The Recommendation remains valid.

Recommendation 13

The Panel **recommends** that the Economics Programme strengthen its presence in the Asian region through a greater use of affiliate economists working in close collaboration with NARS and ARIs.

Response

CIMMYT agrees and we are taking steps to increase our presence in the region through special project funding. We have developed proposals for a strengthened presence in the Asian region following a similar recommendation made during the Centre Commissioned External Review of the CIMMYT Economics Program, conducted in June 1997.

Action since 1998

The Economics Program withdrew from the Bangkok office in the mid 1990's however, since then there have been concerted efforts to raise special project funding for activities in Asia. For example, an IFAD funded project involving 7 countries employs a regional economist (R. Gerpacio) based at IRRI in the Philippines. There are also efforts underway to enhance economics activities in the Rice-Wheat Consortium (RWC).

Panel observations

CIMMYT does not seem to have effectively addressed this Recommendation.

Recommendation 14

The Panel **recommends** that the Economics Program, in view of the increasing importance of macroeconomic policies as they affect maize and wheat, gradually place more emphasis on this aspect of research focusing on a few selected countries.

Response

CIMMYT agrees and has commenced the development of proposals to examine macro policy issues in key maize and wheat countries including those in the Asian region.

Action since 1998

10-15 years ago there was an emphasis on this type of work however, demand has declined and the demand for technology evaluation and dissemination studies has increased. More recently, we note that the strategic planning discussions have identified policy advocacy as an important component of CIMMYT's work; this will require policy work although may overlap with the work of IFPRI. In recent years we have been doing macro policy work in Central America (SDC funding) with a key output being a series of policy briefs.

Panel observations

Evidence was not available of additional work done in macroeconomic policies. It looks like the emphasis has moved in the opposite direction (case studies).

Recommendation 15

The Panel **recommends** that CIMMYT management establish a regular annual review of issues of common interest between INIFAP and CIMMYT, with each organization represented by a small group of senior administrative and research officers.

Response

CIMMYT agrees and conducted a series of meetings during December 1997 and plans to follow up on key issues on a regular basis.

Action since 1998

There has been ongoing dialogue between INIFAP and CIMMYT, especially on the subject of QPM (maize) and in the area of wheat research at the Ciano field station, where INIFAP provides considerable support to CIMMYT activities including the time of key researchers.

Panel observations

No formal record of annual review has been provided to the EPMR Panel. But CIMMYT Management states that there has been ongoing dialogue on QPM. The formal annual review recommended by the 4th EPMR should be established.

Recommendation 16

The Panel **recommends** that CIMMYT management prepare all future budget proposals on the basis of full project costing, showing both income and expenditure for all project outputs”

Response

CIMMYT’s Board and Management agree with the need for full-project costing within CIMMYT and, indeed, within all other units of the CGIAR. Some of what needs to be done on full-costing can be done within CIMMYT itself; however, to be truly effective, such efforts will also need to be supported-intellectually and financially-by donors to the various projects.

In CIMMYT’s view, a commitment to full-cost accounting is far from trivial. Such a commitment embraces six distinct components, not all of which are under CIMMYT’s direct control. It will be necessary: 1) for CIMMYT’s auditors to work with CIMMYT management (as they are now doing) to verify the scope and quantitative estimates of costs components in the indirect cost rate(s); 2) for CIMMYT to plan for flexibility in project preparation to accommodate various donor rules for including legitimate costs in proposals. Some donors, for example, will not permit a line entitled ‘indirect costs’ as a specified percentage, but will allow a line or lines showing direct charges for elements (such as space charges) that might typically be included in indirect charges; 3) for the Board policy (which CIMMYT now has) to embrace full cost recovery as the goal of the Center (yet knowing that in some instances that such recovery will not be forthcoming), thereby shifting the burden of proof and argument to those projects that do not cover full costs; 4) for the Board and Senior Management to use indirect cost recovery as one component in judging performance of managers; 5) for all Centers in the CG System to move toward recovery of full-costs to prevent ‘cost cutting’ on indirect costs from becoming a destructive element of competition among Centers; and 6) for donors to face up to the legitimate nature of indirect costs in their funding of projects and understand that it is basically self-destructive for a Center to use unrestricted funds to cover the indirect costs of special projects. CIMMYT also notes that non-payment of indirect costs on projects leads to tensions and suggestions of ‘free-riding’ within the donor community itself. CIMMYT’s Board and Management believe that implementation of the principle of full-costs pricing, especially for special projects, is critical for the entire CG System and hope that a discussion of this principle will be an element of the System Review now in progress.

Action since 1998

CIMMYT has endeavoured to develop a better costing system for projects however this is still a work in progress. Renewed efforts will be made, commencing 2005, to ensure that all projects are properly costed and that, where possible, staff currently on unrestricted funding

will be transferred across to project funding where there is programmatic alignment. The CGIAR Internal Audit Unit under John Fitzsimon has been helpful in developing Good Practice Notes on Project Costing and in undertaking an audit of CIMMYT's projects costing.

Panel observations

Little progress has been made by CIMMYT and a formal full project costing system is not available yet. However, the new Director for Corporate Services has this issue high on the agenda.

Recommendation 17

The Panel **recommends** that CIMMYT management take all the necessary steps and obtain the necessary expert input to develop and implement an integrated strategy for information technology and the operation of CIMMYT's management information systems.

Response

CIMMYT agrees and notes that its Board of Trustees has approved a major review and consultancy of CIMMYT's information technology requirements. A consultants report is expected by late-1998.

Action since 1998

A review was conducted by the University of Georgia and several recommendations were acted upon. In 2001, a mini-symposium was organized to coincide with a CIMMYT Board meeting to raise the level of awareness of the need for CIMMYT to address IT issues. CIMMYT has worked on a number of projects with the National Centre for Genome Resources in Santa Fe. During this time the role of the IT manager has been redefined and there has been staff turnover. More recently, CIMMYT has appointed a short-term specialist, Jens Riis-Jacobsen, to work on projects associated with systemwide initiatives in the areas of genebank upgrading and ICT/KM. A bioinformatics specialist (Guy Davenport) has recently been appointed, in part to help CIMMYT fulfil commitments under the Generation CP but, also, as a longer term measure to increase capacity in this area.

Panel observations

Little or no progress had been made on developing an integrated strategy for information technology and the operation of CIMMYT's management information systems. This Recommendation is still pertinent today.

Recommendation 18

The Panel **recommends** that CIMMYT management implement a policy of full charging for all samples processed by the various laboratory services and evaluate the relative cost effectiveness and analytical quality of outsourcing the supply of the different types of laboratory analysis.

Response

CIMMYT management has commissioned a review of the soil and plant analytical facility and a Users Group has been established to help set policy that will include consideration of charge back systems and provision for equipment upgrading.

Action since 1998

The soils and plant laboratory has been operating successfully in recent years under a system of charge-backs. During this period, the turnaround time for analysis of samples has decreased

markedly and there has been better prioritization of samples for analysis by CIMMYT researchers.

Panel observations

The charge back system is in place but part of the recoveries are not being used for upgrading the lab equipment as indicated in management response to the Recommendation.

Recommendation 19

The Panel **recommends** that the CIMMYT Board ensure that adequate information on the budget and important policy decisions is provided to all Board members irrespective of the specific committee on which they serve; and that the flow of information from committees and Board be improved.

Response

The CIMMYT Board concurs completely with this recommendation. Henceforth, all Board members will receive materials for each of the Board Committees, whether or not they are members of a particular committee. Procedural changes were made in 1997 to ensure that all Board members are sent quarterly financial statements and audit reports. The financial reports themselves have been amplified and redesigned, and arrangements have also been made for a specific Trustee on each committee to take lead responsibility for assessing CIMMYT's financial health (currently A. Gregson for the Audit Committee, J. Holmberg for the Program Committee, and W. Falcon for the Executive and Finance Committee).

Action since 1998

All trustees now receive all papers for the Board meetings, irrespective of their committee assignments. More recently, the CIMMYT Board has chosen to conduct committee meetings sequentially rather than concurrently.

Panel observations

The intention with Board meetings is to send all materials, including committee materials, two weeks in advance of the meeting. Board members are provided with compensation for a reading day in order to encourage thorough preparation. However, new materials are still distributed at the meetings, making thoughtful preparation and discussion a challenge.

A more serious information gap exists in the interval between meetings, particularly with respect to financial information and significant program and personnel events that touch on the Board's oversight responsibilities. This lapse is particularly acute with respect to communications with the chairs of the Finance and Administration and Audit committees.

Recommendation 20

The Panel **recommends** that the CIMMYT Board commission an external review (CCER) to be conducted by mid-2000 to assess progress in implementing the project based approach to research management as outlined in the MTP. This review should include the assessment of progress towards the attainment of management systems to support these projects, integration of financial and human resource databases, the implementation of a strategy on information technology, and the operation of CIMMYT's management information systems.

Response

The CIMMYT Board concurs with this recommendation and commits itself to an externally commissioned review (CCER) to assess implementation of the project-management approach outlined in the MTP. The Board understands that the 1997 EP MR occurred at a time of transition for the organizational structure within CIMMYT and believes that a serious review of the new approach is appropriate in two years. The current thinking of Board and Management is to name external reviewers in the autumn of 1999 (perhaps during Center’s Week) and to complete the review before September 2000.

Action since 1998

The review, led by Ken Cassman, was carried out. A full report on the review and management’s response is tabled as part of the background reading for the 5th EP MR.

Panel observations

No progress has been made on the project management system in response to the 4th EP MR and the subsequent CCER recommendations. The 5th EP MR Panel suggests that CIMMYT gives high priority to this activity to support its matrix management systems also.

RE-THINKING GOVERNANCE IN CGIAR CENTERS

Effective, diligent governance of the Centres that comprise the CGIAR has always been a concern of the System. In part, this is a function of each Board's legal responsibility to safeguard the public interest at the heart of a Centre's mission and purpose, and to assure beneficiaries, donors and others that the assets and resources of the organization are used effectively to achieve a public good. It is also a function of the Centres' acute awareness of their collective responsibility to address urgent and fundamental human needs that makes anything less than effective, diligent governance unacceptable.

Good governance tends to be valued most highly when its absence has contributed to organizational calamity. This was true in the early 1990s when high profile failures within the nonprofit sector brought home the consequences of board negligence, and is equally true today with problems in the corporate sector that have prompted widespread reforms affecting both for-profit and not-for-profit boards.

In the absence of calamity as a spur to reform, there are still compelling reasons to re-think what Boards do. Boards do not work in a vacuum; as organizations change, Boards should consider whether the expectations and practices that once defined good governance still work to achieve that goal or whether different approaches are required.

CIMMYT's 5th EPMP, like other recent Centre reviews (IRRI is a good example), highlighted the System's heightened attention to Centre governance as well as particular concerns with the performance of CIMMYT's Board in recent years. The review also revealed an awkward fit between the accepted standards within the System for evaluating the governance function and the demands that CIMMYT's growing organizational complexity places on its Board.

Panel members believed this last issue was not unique to CIMMYT, and to encourage a broader consideration of whether and how Centre governance might evolve, the Panel includes a more general discussion of the issue in this appendix.

Changing the nature, focus and structure of Centre governance

In 1997, the CGIAR published a series of booklets renewing the case for good governance and providing Centres with detailed information on Board structure and practice. The eight booklets described a Centre Board's basic roles and responsibilities, and outlined the essential elements of Board structure and practice that would help ensure Board effectiveness. The template that emerged both affirmed good practices already in place within many of the Centres and provided a highly serviceable framework for undertaking improvements.

Many of the recommended practices continue to be of value, but it is the Panel's view that the overall framework fails to emphasize critical requirements for contemporary governance or to yield a Board that is nimble and highly adaptive in its work. Rather than

provide an itemized critique of current practice, the Panel prefers to raise issues that seem essential for effective Centre governance going forward.

Re-defining the Board's role

Centres are large and financially complex enterprises, with far flung operations, facing stiff competition for resources and frequently working in areas parallel and sometimes identical to the corporate sector. It is more common for Centres to find themselves in trouble because of mismanagement—financial or otherwise—than because the research agenda or the quality of scientific work is flawed. The nature of the enterprise combined with the frequent nature of the problems argue for a Board that brings much more focus, commitment and ability to financial and management issues; one that accepts this as its primary role and obligation, and that organizes itself to be effective in that dimension of its work. In addition, it is more efficient to emphasize this role and recruit for expertise in it than to attempt to create this capacity after the fact with Board members who see both their skills and interests as being elsewhere.

To the Panel, this seems like a logical and necessary shift in the way Centre Boards define their role and build their capacity. It is no longer functional and may be counterproductive to make oversight of science and research a primary role or responsibility of the Board. While this is a responsibility that cannot be wholly relinquished by the Board, it can be managed more efficiently in other ways, for example, through CCERs, a higher level of Board engagement in the results of the EPMRs, and the use of task-specific scientific advisory groups, rather than through building a Board with a depth and breadth of research-related expertise that mimics staff capacity and duplicates checks and balances available elsewhere, including the CGIAR system, the professional culture of the sciences, and the competitive market for resources.

In the new formulation of the Board's role, there would be:

- An emphasis on
 - oversight and stewardship responsibilities for Centre financial operations, the prudent use of resources, financial stability, and financial sustainability
 - evaluation and decision making that are strategic—well informed and forward looking
 - a relationship with the DG that is collegial but rigorous
 - a capacity to build resources and forge new relationships
- A de-emphasis on
 - stakeholder representation as a role for board
 - direct board oversight of the research agenda, scientific outputs, and the quality of science

Smaller Boards, more strategic composition and leaner structures

The current formulation for Board composition places a value on highly representative Boards, and Boards that bring a broad array of skills and perspectives to the table. This creates Boards that are large, difficult to keep engaged and informed, and expensive to convene for meetings and other activities.

If the Board's role is more narrowly defined, a small Board can still comprise critical expertise and representation if the priorities are clear and the recruitment process for new Board members is rigorous. Small Boards tend to be more active, with higher levels of engagement as a group but also individually. Because each absence or failure to perform is more noticeable in a small Board, small Boards build internal accountability that contributes to productivity.

A small Board also requires a rethinking of the committee structure. Current practice usually results in a standing committee structure that is uninflected in terms of the value to the Board or the Centre of small group versus full group work, and reinforces the need for a Board of a certain size. A small Board requires a more functional committee structure—fewer standing committees, smaller committees that provide value to the full Board and greater use of *ad hoc* committees or task forces with focused assignments and short life spans.

How small is small:

- 7-10 elected members (to include no more than one CGIAR-endorsed member)
- As few *ex officio* members as possible

What should drive the recruitment of members:

- Priority on expertise and influence driven by assessments of needs/capacity
- Gender balanced
- Strategic regional balance

What is the leanest possible committee structure:

- Strategic executive committee (meets only when necessary or to complete tasks assigned by Board)
- Limited number of standing committees: Governance/Nominating, Audit, Finance/Administration;
- An increased use of task forces with a focused assignment

More frequent, shorter Board meetings and more strategic, focused agendas

CIMMYT provided a telling example of the challenges a Board faces when it meets only twice a year. Infrequent meetings make it difficult to build continuity, track changes in a Centre's performance, and make decisions that feel timely or relevant. It is hard to build a sense of urgency around problems or opportunities. The lack of time spent on the affairs of the organization can erode the confidence and moral authority of the Board to engage and challenge management and hold it accountable.

To be effective, Boards need to meet more often (using meetings of the executive committee judiciously when they can't), for shorter periods and with more highly focused agendas. Field trips and site visits need to be carefully weighed to determine their value in building Board knowledge and commitment against the extended time commitments and inefficiencies they entail. A small Board can bring the cost of meetings down, as can shorter meetings. If Centre meetings were shorter and more crisply organized, Board service might

be more appealing and more possible for those in the private sector who cannot sacrifice four to five days at a time to a volunteer activity, no matter how worthwhile.

Oversight of Science

Centre Boards have traditionally had a significant number, often a majority, of members who were active scientists or science managers with experience in areas of relevance to the Centre's major research activities. These members have provided a strong capacity for Board oversight of the Centre's science usually through a Programme Committee.

A reduction in the number of Board members with experience in science and the abolishment of the traditional programme committee may raise concerns about science oversight amongst some members of the CGIAR. One solution to these concerns would be the appointment of a Scientific Advisory Committee (SAC) of say, 4-6 members, which could advise the Centre and Board on the quality of its science. The SAC could meet yearly, for example at the time of the annual work planning and priority setting meeting of the Centre, and report formally either to the Management or Board. Under this arrangement the SAC members could focus their expertise on monitoring quality of science in the Centre as well as input expert external advice into the planning process.

BRIEF ON ISO 9001:2000 CERTIFICATION

ISO 9001:2000 Certification requires adherence to ISO internationally recognized standards. Organizations are subjected to special international audit to acquire certification. Maintaining ISO certification requires annual specialized audit. The information below provides the benefits and principles of ISO certification.

What are ISO standards?

Standards are documented agreements containing technical specifications or other precise criteria to be used consistently as rules, guidelines, or definitions of characteristics, to ensure that materials, products, processes and services are fit for their purpose.

International Standards thus contribute to making life simpler, and to increasing the reliability and effectiveness of the services we use.

Quality management principles

The following text is an integral reproduction of the content of the document "Quality Management Principles".

Introduction

This document introduces the eight quality management principles on which the quality management system standards of the revised ISO 9001:2000 series are based. These principles can be used by senior management as a framework to guide their organizations towards improved performance. The principles are derived from the collective experience and knowledge of the international experts who participate in ISO Technical Committee which is responsible for developing and maintaining the ISO 9000 standards.

The eight quality management principles are defined in ISO 9000:2000, *Quality management systems Fundamentals and vocabulary*, and in ISO 9004:2000, *Quality management systems Guidelines for performance improvements*.

This document gives the standardized descriptions of the principles as they appear in ISO 9000:2000 and ISO 9004:2000. In addition, it provides examples of the benefits derived from their use and of actions that managers typically take in applying the principles to

Principle 1: Client focus

Organizations depend on their clients and therefore should understand current and future customer needs, should meet customer requirements and strive to exceed customer expectations.

Key benefits:

- Increased revenue and market share obtained through flexible and fast responses to market opportunities.
- Increased effectiveness in the use of the organization's resources to enhance customer satisfaction.
- Improved customer loyalty leading to repeat business.
- Applying the principle of customer focus typically leads to:
 - Researching and understanding customer needs and expectations.
 - Ensuring that the objectives of the organization are linked to customer needs and expectations.
 - Communicating customer needs and expectations throughout the organization.
 - Measuring customer satisfaction and acting on the results.
 - Systematically managing customer relationships.
- Ensuring a balanced approach between satisfying customers and other interested parties (such as owners, employees, suppliers, financiers, local communities and society as a whole).

Principle 2: Leadership

Leaders establish unity of purpose and direction of the organization. They should create and maintain the internal environment in which people can become fully involved in achieving the organization's objectives.

Key benefits:

- People will understand and be motivated towards the organization's goals and objectives.
- Activities are evaluated, aligned and implemented in a unified way.
- Miscommunication between levels of an organization will be minimized.
- Applying the principle of leadership typically leads to:
 - Considering the needs of all interested parties including customers, owners, employees, suppliers, financiers, local communities and society as a whole.
 - Establishing a clear vision of the organization's future.
 - Setting challenging goals and targets.
 - Creating and sustaining shared values, fairness and ethical role models at all levels of the organization.
 - Establishing trust and eliminating fear.
 - Providing people with the required resources, training and freedom to act with responsibility and accountability.
 - Inspiring, encouraging and recognizing people's contributions.

Principle 3: Involvement of people

People at all levels are the heart of an organization and their full involvement enables their abilities to be used for the organization's benefit.

Key benefits:

- Motivated, committed and involved people within the organization.

- Innovation and creativity in furthering the organization's objectives.
- People being accountable for their own performance.
- People eager to participate in and contribute to continual improvement.
- Applying the principle of involvement of people typically leads to:
 - People understanding the importance of their contribution and role in the organization.
 - People identifying constraints to their performance.
 - People accepting ownership of problems and their responsibility for solving them.
 - People evaluating their performance against their personal goals and objectives.
 - People actively seeking opportunities to enhance their competence, knowledge and experience.
- People freely sharing knowledge and experience.
- People openly discussing problems and issues.

Principle 4: Process approach

A desired result is achieved more efficiently when activities and related resources are managed as a process.

Key benefits:

- Lower costs and shorter cycle times through effective use of resources.
- Improved, consistent and predictable results.
- Focused and prioritized improvement opportunities.
- Applying the principle of process approach typically leads to:
 - Systematically defining the activities necessary to obtain a desired result.
 - Establishing clear responsibility and accountability for managing key activities.
 - Analysing and measuring of the capability of key activities.
 - Identifying the interfaces of key activities within and between the functions of the organization.
- Focusing on the factors such as resources, methods, and materials that will improve key activities of the organization.
- Evaluating risks, consequences and impacts of activities on customers, suppliers and other interested parties.

Principle 5: System approach to management

Identifying, understanding and managing interrelated processes as a system contributes to the organization's effectiveness and efficiency in achieving its objectives.

Key benefits:

- Integration and alignment of the processes that will best achieve the desired results.
- Ability to focus effort on the key processes.
- Providing confidence to interested parties as to the consistency, effectiveness and efficiency of the organization.
- Applying the principle of system approach to management typically leads to:
 - Structuring a system to achieve the organization's objectives in the most effective and efficient way.
 - Understanding the interdependencies between the processes of the system.
 - Structured approaches that harmonize and integrate processes.

- Providing a better understanding of the roles and responsibilities necessary for achieving common objectives and thereby reducing cross-functional barriers.
- Understanding organizational capabilities and establishing resource constraints prior to action.
- Targeting and defining how specific activities within a system should operate.
- Continually improving the system through measurement and evaluation.

Principle 6: Continual improvement

Continual improvement of the organization's overall performance should be a permanent objective of the organization.

Key benefits:

- Performance advantage through improved organizational capabilities.
- Alignment of improvement activities at all levels to an organization's strategic intent.
- Flexibility to react quickly to opportunities.
- Applying the principle of continual improvement typically leads to:
- Employing a consistent organization-wide approach to continual improvement of the organization's performance.
- Providing people with training in the methods and tools of continual improvement.
- Making continual improvement of products, processes and systems an objective for every individual in the organization.
- Establishing goals to guide, and measures to track, continual improvement.
- Recognizing and acknowledging improvements.

Principle 7: Factual approach to decision making

Effective decisions are based on the analysis of data and information

Key benefits:

- Informed decisions.
- An increased ability to demonstrate the effectiveness of past decisions through reference to factual records.
- Increased ability to review, challenge and change opinions and decisions.
- Applying the principle of factual approach to decision making typically leads to:
- Ensuring that data and information are sufficiently accurate and reliable.
- Making data accessible to those who need it.
- Analyzing data and information using valid methods.
- Making decisions and taking action based on factual analysis, balanced with experience and intuition.

Principle 8: Mutually beneficial relationships with Clients

An organization and its clients are interdependent and a mutually beneficial and healthy relationship enhances the ability of both to create value to the organization

Key benefits:

- Increased ability to create value to the organization

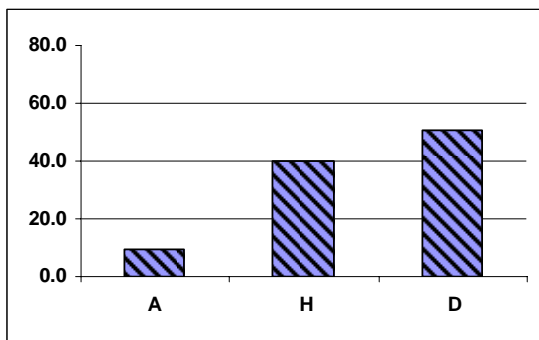
- Flexibility and speed of joint responses to changing needs and expectations.
- Optimization of costs and resources.
- Applying the principles of mutually beneficial and healthy client relationships typically leads to:
 - Establishing healthy relationships that balance short-term benefits with long-term considerations.
 - Pooling of expertise and resources with clients and partners.
 - Clear and open communication.
 - Sharing information and future plans.
 - Establishing joint development and improvement activities.
 - Inspiring, encouraging and recognizing improvements and achievements by clients.

RESULTS OF THE CIMMYT STAFF SURVEY

CIMMYT staff were asked to respond to statements on 12 themes by choosing one of three options: Agree (A), Hard to Decide (H; neither agree nor disagree) or Disagree (D). The proportion of different responses to each statement is shown in the graphs below. The number of respondents (75 in total) is given in brackets.

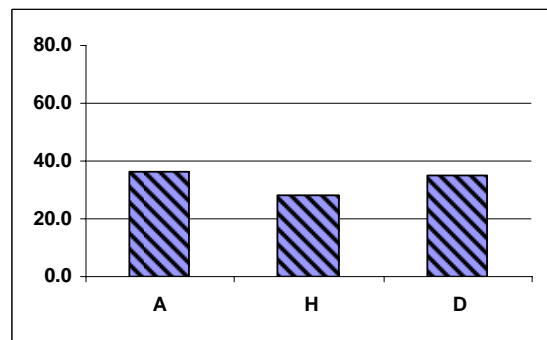
1. CIMMYT Culture

Decision-making is highly participative and I feel free to express my opinion on work related issues. (75)



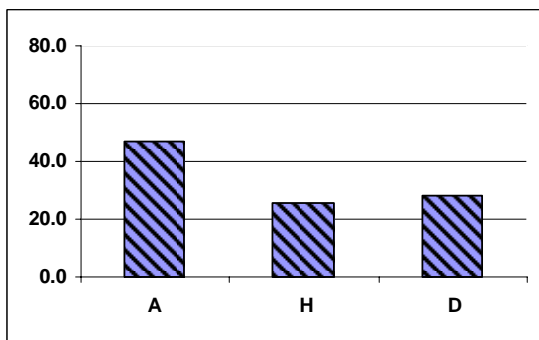
4a. Internal Communication Processes

a. Generally, I am provided the information I need to do my job in the best possible way. (74)

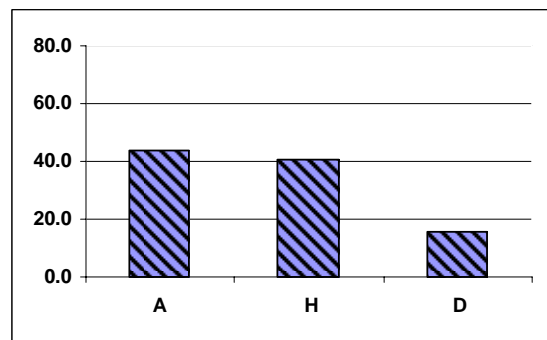


2. Goals, Mission and Direction

The goals, mission and direction of CIMMYT are clearly communicated to staff. (75)

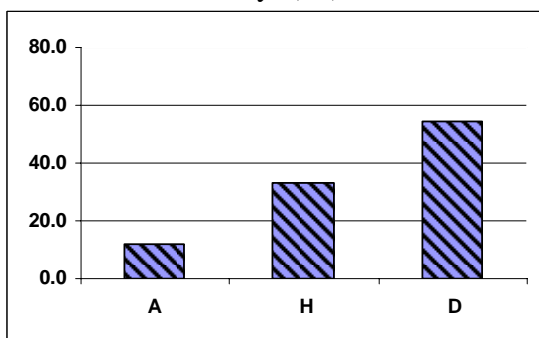


b. The written communications I receive at CIMMYT are clear and understandable. (71)



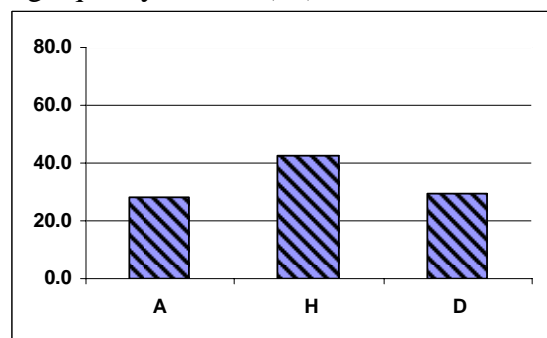
3. Policies and Procedures

The manner in which new and revised procedures and policies are communicated to staff is satisfactory. (75)



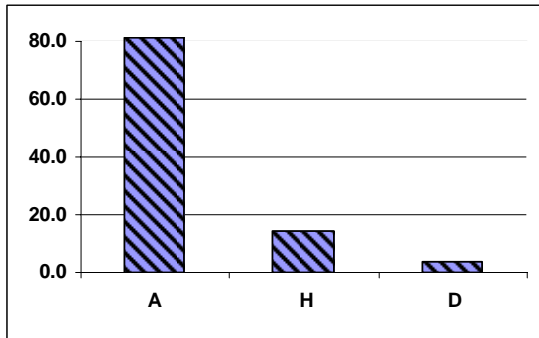
5. Working Conditions

CIMMYT is willing to invest in equipment and provide facilities needed to ensure high quality results. (75)



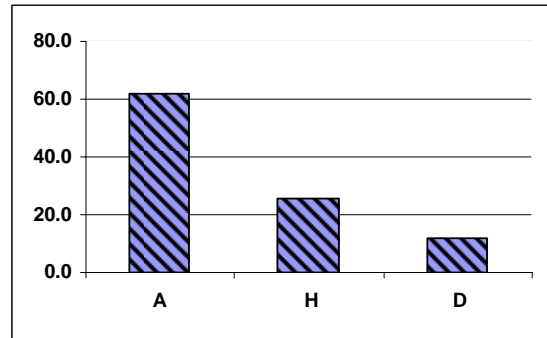
6. Job Definition

My skills, abilities and professional experience fully match with the requirements of my position. (75)



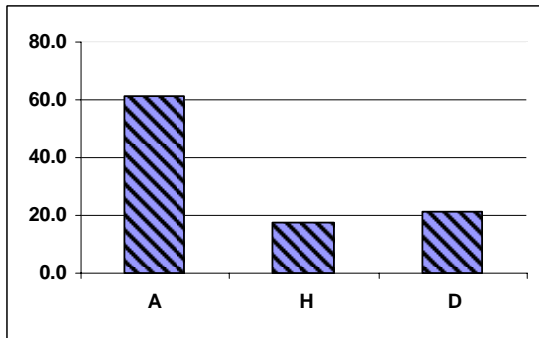
9. Co-Worker Relations

The people I work with daily have a high level of trust and confidence in each other. (74)



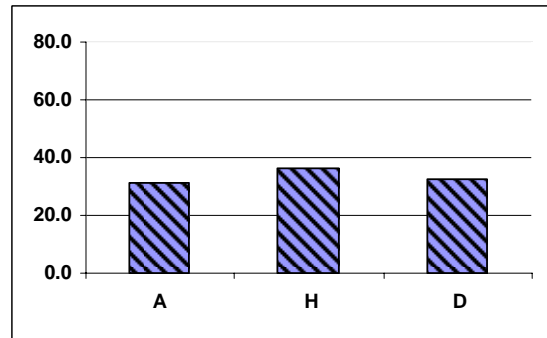
7. Job Satisfaction

My position gives me the opportunity to develop my individual talents. (75)



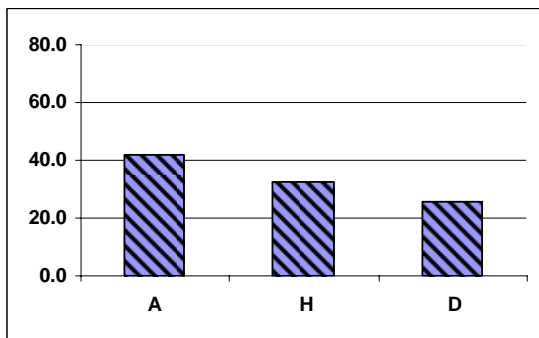
10. Staff Empowerment

a. The recognition I receive from CIMMYT when I solve a work-related problem motivates me to work harder. (74)

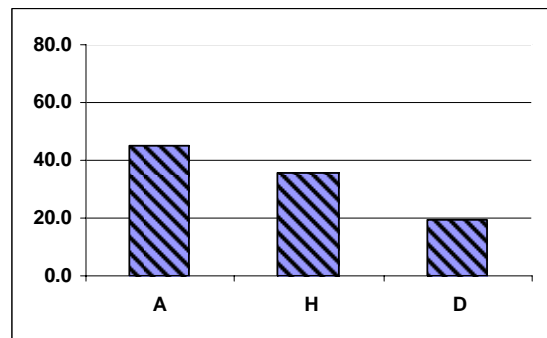


8. Leadership

My immediate supervisor communicates specific work goals to me clearly (74)

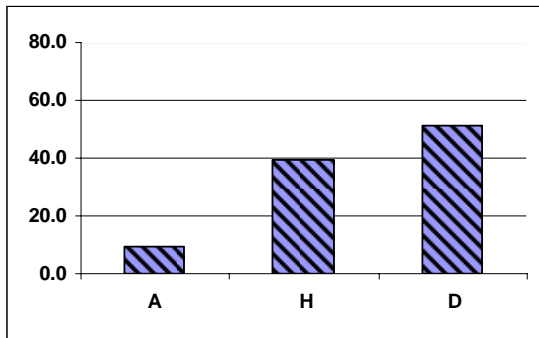


b. I can express my opinion in issues that affect my work. (73)

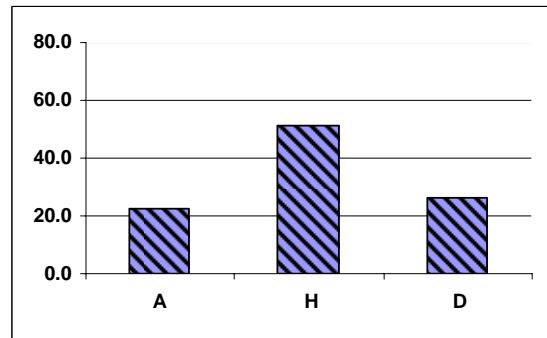


11. Staff Performance Evaluation

The last staff evaluation has helped me to improve my job performance. (74)

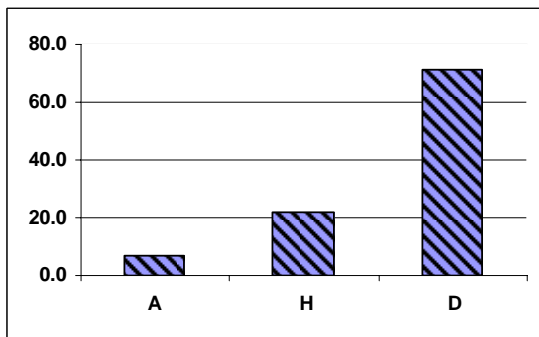


b. I would recommend CIMMYT to my friends as a good place to work. (72)



12. Identity with CIMMYT

a. The morale of staff at CIMMYT is high. (73)



LIST OF ACRONYMS

ABC	Applied Biotechnology Centre
ALP	African Livelihoods Program
AMBIONET	Asian Maize Biotechnology Network
AMS	Africa Maize Stress
APSIM	Agricultural Production Systems Simulator Model
ARI	Advanced Research Institute
BCA	Bangladesh Country Almanac
CCER	Centre-Commissioned External Review
CDC	Centre Directors Committee
CGIAR	Consultative Group on International Agricultural Research
CIAT	International Centre for Tropical Agriculture
CIMMYT	International Maize and Wheat Improvement Centre
CNRM	Crop and Natural Resources Management
CP	Challenge Program
CWANA	Central West Asia-North Africa Region
DDG-R	Deputy Director General Research
DG	Director General
DNA	Deoxyribonucleic acid
DREB	Evaluation of Transcriptional Factor Genes
DSSAT	Decision Support System for Agrotechnology Transfer
ECAMAW	Eastern and Central Africa Maize and Wheat Network
EPMR	External Programme and Management Review
ExCo	Executive Council
FAO	Food and Agriculture Organization of the United Nations
FTE	Full Time Equivalents
GIS	Geographic Information Systems
GMO	Genetically Modified Organism
GQL	Grain Quality Laboratory
GRP	Genetic Resources Programme
HQ	Headquarters
HR-SAS	Human Resources – Strategic Advisory Services
IAP	Intensive Agro-Ecosystem Programme
IAS	Intensive Agro-Ecosystems
ICARDA	International Centre for Agricultural Research in the Dry Areas
ICIS	International Crop Information System
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IFPRI	International Food Policy Research Institute
IGP	Indo-Gangetic Plains
IITA	International Institute of Tropical Agriculture
ILRI	International Livestock Research Institute
IMTU	International Maize Testing Unit
IPR	Intellectual Property Rights
IRMA	Insect Resistant Maize for Africa

IRRI	International Rice Research Institute
IRS	Internationally Recruited Staff
ISO	International Organization for Standardization
IT	Information Technology
ITA	Impact Targeting and Assessment
IWIN	International Wheat Improvement Network
IWIS	International Wheat Information System
IWWIP	International Winter Wheat Improvement Program
KARI	Kenya Agricultural Research Institute
LDC	Lesser Developed Countries
LGB	
MAS	Marker Assisted Selection
MMPA	Marginal Maize Production Areas
MPBCRC	Molecular Plant Breeding Cooperative Research Centre
MTP	Medium-Term Plan
MV	Modern Varieties
NARI	National Agricultural Research Institute
NARS	National Agricultural Research System
NGO	Non-Governmental Organizations
NIR	Near Infrared Spectroscopy
NRG	Natural Resources Group
NRM	Natural Resource Management
NRS	Nationally Recruited Staff
OPV	Open Pollinated Varieties
PGRFA	Plant Genetic Resources for Food and Agriculture
PSC	Program Steering Committee
QPM	Quality Protein Maize
QTL	Quantitative Trait Loci
RAT	Resource Allocation Tool
RCT	Resource Conserving Technologies
REGNUR	East and Southern African Regional Maize Nursery Project
RFWS	Rainfed Wheat Systems
RWC	Rice-Wheat Consortium
SADC	Southern Africa Development Community
SADLF	Southern African Drought and Low Soil Fertility Project
SHU	Seed Health Unit
SIDU	Seed Inspection and Distribution Unit
SoilFertNet	Soil Fertility Management and Policy Network for Maize-Based Farming Systems in Southern Africa
SRO	Sub-Regional Organisation
SSA	Sub-Saharan Africa
SSG	Social Sciences Group
TAC	Technical Advisory Committee
TES	Tropical Ecosystems
TRIPS	Trade-Related Aspects of Intellectual Property
UNDP	United Nations Development Programme