

**CONSULTATIVE GROUP ON INTERNATIONAL AGRICULTURAL RESEARCH**

**SCIENCE COUNCIL**

**CIMMYT Fifth EPMR 2004/05**

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**Panel Report: Summary and Recommendations**

**SCIENCE COUNCIL SECRETARIAT**

November 2005



## **SC Commentary on the Fifth External Programme and Management Review of CIMMYT**

The Report of the Fifth External Programme and Management Review (EPMR) of CIMMYT was discussed at SC3 at IWMI headquarters in Colombo, Sri Lanka, in the presence of the Panel Chair Dr. Don Marshall, Chair of CIMMYT's Board of Trustees Dr. Alex McCalla, and the CIMMYT DG, Dr. Masa Iwanaga. The Science Council (SC) expresses its appreciation to Dr. Don Marshall and his Panel for a critical Report, which provides a frank and constructive assessment of all aspects of the Centre's operations. The Panel report incorporates comments and analysis from both a prospective and a retrospective point of view. The SC notes with appreciation that CIMMYT considers this report of high quality, timely and useful at a time of transition and broadly agrees with the EPMR Panel's assessment and recommendations. The Centre has already initiated action to implement the recommendations. The Report contains twenty three recommendations and several important suggestions in the various chapters. The SC endorses the Panel's recommendations and provides the following commentary to complement the Report.

### **Introduction**

The Panel began by looking at the implementation of the agreed recommendations from the 4<sup>th</sup> CIMMYT EPMR in 1998 and found that several recommendations have been left unimplemented. This has affected the operations of CIMMYT and provides strong reasons for the System to urgently put in place a coherent follow-through monitoring and evaluation (M&E) mechanism to reinforce a higher sense of accountability at the Centre governance and management levels. Such steps have been taken in the annual performance measurement and Medium Term Plan assessment now being implemented at the System level. The SC fully agrees with the Panel that the Centre has born a high cost of serious shortfalls in governance and management, clearly documented in the report, some of which stem from the failure to implement past recommendations.

Due to financial failure which reached a critical point at the end of 2002, CIMMYT has gone through turmoil, including three staff downsizings implemented at the same time it was engaged in strategic planning and major programmatic restructuring. The effects of this are reflected in the responses to a staff survey conducted by the Panel. The SC shares the EPMR Panel's concern that low staff morale is one of the gravest problems that the Centre needs to address urgently. Any further downsizing of staff could hurt the research programmes seriously.

The Panel concluded that CIMMYT's unique experience and capacity in genetic enhancement of two of the world's major crops for poor environments and traits needed by the poor is the main justification for its existence. The Panel was concerned that this capacity is being eroded through a) a shift of resources away from plant breeding to other activities to implement the livelihoods based programmes of the new CIMMYT strategy; and b) a slow uptake and use of modern breeding methods that eventually could justify change in staff patterns. The SC agrees with these concerns of the Panel.

### **Strategic plan**

Panel considered CIMMYT's new strategic plan weak and lacking in direction and goals for implementation, despite the participatory process that the Centre followed in developing the plan. Thus, in the Panel's assessment, in trying to cover a very broad agenda, CIMMYT has overly de-emphasised germplasm enhancement in its strategic plan. The SC fears that CIMMYT is ceasing to promote its comparative advantage in crop improvement in the broad sense in its strategic plan for what ever reasons, one of which could be the declining investment by donors to support a programme based on strong genetic enhancement component. The SC wishes to re-emphasise to all stakeholders the critical and vital role of germplasm-based gains in productivity, maintenance of past gains and risk avoidance in the overall strategies of the CGIAR.

The SC strongly cautions the Centre from diversifying away from its core competence in genetic enhancement to areas where several other Centres and other organisations are working, such as crop-livestock interactions, INRM and addressing livelihoods broadly, and to areas beyond the CGIAR's priorities, such as putting in place national seed systems even though these activities may be linked to increasing maize and wheat productivity and subsequent poverty alleviation. Thus in reorienting its programmes, CIMMYT should seek more engagement with others to provide the "livelihood" setting and outcomes in which CIMMYT focuses on the crop improvement. This is particularly important in regions such as CWANA where another Centre can provide the livelihood inputs for the programme. The Panel noted that CIMMYT unfortunately appears to be expanding its livelihoods agenda in this region at the expense of crop improvement.

### **Inter- Centre relationships**

It is important that the CGIAR System as a whole be seen to be working in a co-ordinated way towards a single mission. CIMMYT's long-running disagreement with ICARDA, as highlighted by the Panel, over responsibility for wheat and barley breeding in the CWANA region is counter-productive and, therefore, must cease at the earliest possible time. The SC sees the inter-Center planning meetings that have already taken

place as steps in the right direction. However, in the SC's view, the assertion by both Centres that resolution will take time, simply because the dispute has been ongoing for many years, is not acceptable. The SC expects to see an indication of enhanced collaboration in the respective Centre's MTPs for 2006-8.

### **Research programmes**

The SC joins the Panel in commending CIMMYT for its efforts to integrate its research in the new programme structure, which has broken down the strong "silos" of the crop and discipline programmes of the old CIMMYT. The previous sharp split of activities into disciplinary programmes in maize, wheat, biotechnology, NRM and economics, including a split even in the gene bank and in training into separate maize and wheat units, has not helped the Centre to develop new research approaches and promote best practices in areas such as database management. The new structure should enhance the internal collaboration between breeding and biotechnology, which the SC considers imperative. The SC is also pleased to note that CIMMYT has been able to attract highly qualified new staff to the programme leader positions.

The SC is pleased that the Panel's assessment of CIMMYT's past research performance is by and large positive. The Panel's negative analysis of CIMMYT's publication record over the review period should, however, be addressed. CIMMYT has demonstrated impact in all areas of past research. CIMMYT's efforts in maintenance breeding have been invaluable securing and advancing yield gains through breeding against the main biotic and abiotic stresses. CIMMYT needs to maintain an adequate level of activity in maintenance breeding.

The SC shares the Panel's concern that CIMMYT has not been able to modernise its facilities due to lack of investment, and that areas such as data management and biotechnology capacity require substantial investments to be sufficient for the Centre's needs. The uptake of modern breeding methods has stagnated at CIMMYT in recent years, and one reason seems to have been the costing structure of projects, which has favoured labour-based approaches and penalised use of modern breeding tools. CIMMYT cannot assume that introduction of new breeding tools is immediately going to ease the requirement for breeder capacity at the Centre. Experienced breeders are key in implementing the shift from the conventional approaches to incorporation of new breeding tools that will eventually enhance efficiency.

CIMMYT should more carefully assess the involvement of alternative suppliers, the private sector in particular, for maize in the favoured areas in Asia and Latin America, and the strong wheat programmes in many countries. The Centre needs to identify its

specific niche in wheat and maize related research targeting areas where past research has not made a change and addressing pressing problems also in favourable areas if it has a comparative advantage. The SC raises some questions related to the continuation of the QPM breeding for human consumption without clear evidence of nutritional and other benefits. Although CIMMYT is planning to incorporate the QPM trait to all materials with other useful characteristics, and there are benefits to animals from high lysine and tryptophan, this work does not seem to warrant the additional investment which is needed, as the trait is not simple to manage, and does involve possible trade-offs with other traits.

Although the Panel considered CIMMYT's work in economics of high quality particularly in demonstrating past impact, it noted the total lack of *ex ante* impact assessment. This is also the SC's concern and it does not regard the Resource Allocation Tool as a substitute for more explicit *ex ante* impact assessments. It is particularly critical for guiding decisions regarding research into marginal areas and targeting resource poor farmers and other choices to determine optimal balance between different activities. The SC feels that not implementing the 4<sup>th</sup> EPMP's recommendations on the Economics Programme has been a serious omission as these recommendations are still valid.

## **Management**

As previously noted, CIMMYT has failed to implement any of the 4<sup>th</sup> EPMP recommendations related to management. The report gives a grim account of the financial mismanagement since 1998 which led the Centre to near collapse in 2002. It appears that funds went to overly ambitious research programmes at the will of research leaders with inadequate monitoring, and corporate, financial and human resources management components were neglected.

CIMMYT faces great challenges in attempting to build up again its reserves. It still needs to make priority decisions in order to enhance the scientific infrastructure. The SC strongly feels that a weak CIMMYT is a loss to the entire CGIAR System. The SC is sympathetic to the Centres determination to run a positive balance through savings. However, the SC is highly concerned about the continuing seriousness of CIMMYT's financial challenges.

## **Governance**

In addition to its analysis of the performance of the Board, the Panel provided a think piece on a governance model for CIMMYT and the CGIAR Centres in general. This includes a significantly smaller Board than is currently the practice, with emphasis on corporate and financial management oversight reflected in the Board members'

expertise areas along with more frequent virtual and face-to-face meetings. The Centre Board and Management fundamentally agree with this perspective. The SC emphasises that with any such model, the Boards would still need to assume principal oversight responsibility for all Centre management, including programme quality and relevance. Board commissioned CCERs are a central tool for carrying out this oversight responsibility.

The SC agrees with the Panel that the Centre needs to be clear about its responsibilities regarding the Generation Challenge Programme (GCP) that it hosts. It is very positive that the CP seems to have stimulated collaboration among researchers in different Centres.

## **Conclusions**

In the absence of a clearly articulated operational strategy, the SC considers it urgent that the Centre, with full involvement of its new Programme leaders, completes a strategic business plan to implement the new strategy. This should be reflected clearly in the Centre's Medium-term Plan for 2006-8. Furthermore, the implementation of the matrix management structure requires that the Centre has in place best management practices.

The SC suggests that given the many challenges CIMMYT faces regarding the financial situation, staff morale, management of the new programme matrix, further development of programmes and implementation of the new strategic plan, the Centre be reviewed after one year rather than two years as recommended by the Panel. This review should be accompanied by a site visit and include the Panel Chair. This is particularly relevant for monitoring improvement with staff morale. At the time of the review the Centre needs to have its programme of work developed involving the new programme leaders, have Board reform completed, and show evidence of progress as measured by critical indicators on all aspects of management.



## CGIAR Secretariat Comments on the Governance and Management Aspects of the CIMMYT EPMR Report

The review points to the failure of governance as a major reason for the severe crisis faced by CIMMYT. Continuing financial difficulty, low staff morale, and overall uncertainty are key concerns highlighted by the EPMR Panel.

The Panel's findings emphasize the critical importance of oversight of the Center's operations. Ensuring the implementation of CGIAR-endorsed EPMR recommendations is a major responsibility of CIMMYT's Board and management. Had the recommendations of the 4<sup>th</sup> CIMMYT EPMR on governance and management been implemented, perhaps the current financial crisis would have been averted. Recently the CGIAR Executive Council began to monitor the implementation of EPMR recommendations, which may flag non-compliance with CGIAR-agreed EPMR recommendations in a more timely manner. It should be noted that ExCo also alerted the Center in 2003 about CIMMYT's poor financial performance and requested remedial action.

We support the recommendations of the Panel on governance and management. We note that CIMMYT has agreed to all but one of them (i.e., creation of a governance committee) and has initiated changes to improve the governance processes. In our view, the recommendations point to the need for the Board to re-examine how it handles business. The Panel's suggestions contained in Appendix VII (Re-thinking Governance in CGIAR Centers) of the report could be helpful for this purpose.

One specific area of reform that we would like to highlight relates to Board's role in providing oversight of research and quality of science. We agree with the SC that, fundamentally, this is a major responsibility of the Board. Oversight of management and finance is an equally fundamental responsibility. The Board needs to decide how it would carry these fundamental responsibilities. In some cases the Board need not provide direct oversight itself, so long as it puts in place mechanisms that facilitate adequate and timely oversight. The Panel makes suggestions on such mechanisms which complement CGIAR evaluation and monitoring processes such as the EPMRs, MTPs, and PM.

A better balance of oversight responsibilities would enable the Board to have a greater opportunity to focus on other strategic concerns such as re-building CIMMYT's image, fund raising and financial planning, improving the Center's efficiency, establishing new partnerships, etc.. In this connection, we take note of the Panel's conclusion that "CIMMYT's Board lacks sufficient depth of expertise in financial analysis, in business

management and in attracting new resources to provide an adequate level of informed oversight and support to management.”

We are pleased to note that the Panel has reiterated the importance of an orientation and learning process for new Centre Board members. Orientation programs at the System level are available, and one specifically suited to the Centre should be a key component of CIMMYT’s governance improvement process.

We would like to clarify two specific statements made by the Panel in Section 1.2.2 of the Report:

- The Panel states that “the rapid erosion of core support for the Centres by donor agencies over the 1990s and its only partial replacement by special project funding... has been exacerbated by the development of CPs...” The recent analysis of the pilot CP experience (“*Synthesis of Lessons Learned from Initial Implementation of CGIAR Pilot Challenge Programs*” at [http://www.cgiar.org/pdf/agm04/agm04\\_cp\\_lessons.pdf](http://www.cgiar.org/pdf/agm04/agm04_cp_lessons.pdf)) shows that the CGIAR’s overall funding has been on the upswing since 2001 and that core support has not been affected by the development of CPs.
- The Panel cites “...linking part of the World Bank contribution to Centres to the level of funds raised” as another reason for “erosion of core support.” In fact, the Bank has been increasingly “de-linking” its contributions to Centers to the level of funds raised from other donors (i.e., “matching”). In recent years the trend has been to decrease the percentage of the Bank’s contribution provided on a matching basis.

In conclusion, the CGIAR Secretariat commends the EPMR Panel for a thorough evaluation of CIMMYT’s programs and management. This EPMR provides yet another example of the significant impact governance, management and institutional health have on program performance. The depth of analysis provided in the areas of governance and management in this review is in part due to having two panel members devote their primary attention to these areas.

We recommend that ExCo and the CGIAR endorse the Panel’s recommendations on the governance and management of CIMMYT.



**International Maize and Wheat  
Improvement Center**  
Centro Internacional de  
Mejoramiento de Maíz y Trigo

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Dear Per and Francisco:

The CIMMYT Board and Management appreciate the efforts of the 5<sup>th</sup> EPMR Panel in assessing CIMMYT at a time the Center is under major transition. The report comes at an opportune time for the Center and we find the critical analysis and rich and constructive suggestions to be very helpful in addition to the 23 recommendations contained in the report. The Center's response to the Panel's recommendations and other general observations are attached to this letter.

The Center recognizes that in a number of key areas recommendations of the previous EPMR have been given inadequate attention. We also acknowledge that, in the past, governance procedures have been below international standards of best practice. The CIMMYT Board has recently initiated an ambitious and far-reaching process that will lead to a comprehensive reform of its system of governance.

The Center shares the view of the Panel that "the Centre is now poised to move forward into the future".

We firmly believe that the new vision for CIMMYT of linking pathways to poverty alleviation with improved and sustainable maize and wheat based farming systems, coupled with the undoubted excellence of CIMMYT's new senior management team and staff, augers well for the Center. We continue to look for more efficient means to deliver the outputs of our work so that they impact where needed most- in the households of poor families- and we stand ready to catalyze change processes in the CGIAR.

Finally, we urge donors to invest in the new CIMMYT.

Yours sincerely,

Masa Iwanaga  
Director General  
CIMMYT

Alexander McCalla  
Board Chair  
CIMMYT



## ***CIMMYT RESPONSE TO THE 5<sup>th</sup> EXTERNAL PROGRAMME and MANAGEMENT REVIEW***

The CIMMYT Board and Management take this opportunity to thank the 5<sup>th</sup> EPMR Panel for their time, effort and recommendations. The report is a vital part of the oversight of the Center and will help it ensure continued impact to its stakeholders in the future. Throughout, this response is a collective response of the Board and Management unless otherwise noted.

The Center recognizes that in a number of key areas recommendations of the previous external review have been given inadequate attention. While it would be easy to pass the responsibility for this failure to act to the financial crisis and prior administrations, it is appropriate for the Center Board and management to recognize these shortcomings and to take responsibility for appropriate remedial actions. In many areas such as performance evaluation, cost recovery systems, project management and computerised financial systems, the current Center management is actively working on these issues. We recognize that there has been an under-investment in these areas in the past and we will strive to make changes, with appropriate resourcing, in the short to medium term.

The Center shares the concerns of the Panel on staff morale, and also recognizes that various staff groups have lived through deep financial turmoil, significant staff downsizing and ongoing staff employment concerns associated both with the new alliance with IRRI and implementation of the new strategy. The Center also recognizes, as did the Panel that “despite the ongoing funding crisis... the panel was pleased to find that CIMMYT’s scientific staff continued to produce a range of outstanding outputs”.

CIMMYT is a world renowned scientific institution and as such attaches great importance to the relevance and quality of its science. The Center is encouraged by the positive comments of the panel regarding the “uniformly high quality of the newly appointed Directors”, and that the overall staff quality was ranked by the panel as good to very good. The comments of the panel on the complexities of implementing a program matrix structure are embraced by the Centre and we shall endeavor to instill as much clarity as possible into the various matrix roles.

The CIMMYT Board of Trustees found the Panel’s advice on governance particularly useful. The major preoccupation of the Board since 2002 has been the financial health of CIMMYT but the Board has also been aware that its governance procedures are below international standards of best practice. The Board has recently initiated an ambitious process that will lead to a comprehensive reform of its system of governance. The advice of the Panel has helped refine the thinking of the Board and we are certain that the results of this ongoing process will be a durable framework for the future.

In closing, CIMMYT thanks the Panel again for the professional attitude it showed during its work. The Center highly appreciates the critical analysis and rich and constructive suggestions made in the report. The Center’s Board has requested Management to report at the next meeting of the CIMMYT Board in November 2005 with an outline of progress towards implementing recommendations.

The Center acknowledges and shares the view of the Panel that “the future ahead for CIMMYT is very bright indeed”

## ***CHAPTER 2***

**General comments:** CIMMYT was pleased that the panel recognised that the Centre’s recent strategic planning process had brought together staff and members of the Board of Trustees to critically assess how CIMMYT could build on its historical strengths and remain relevant to its various stakeholders. We agree with the panel that the Centre has adopted a bold new vision and mission and that the strategic direction outlined in “Seeds of Innovation” needs to be fleshed out in a strategic business plan that, amongst other things, will assess the resource needs to implement the plan. A key part of this planning process which will occur throughout 2005 will be the development of a revised resource mobilisation strategy.

While CIMMYT concurs with the panel's judgement that current work is constrained by the restricted nature of CIMMYT's funding there are several excellent examples of projects that have attracted donor support that clearly align with the Seeds of Innovation strategy, including NSIMA ("New seed initiative for maize in Africa"); IRMA "Insect resistant maize for Africa: *Delivering products to farmers*"; and SOFESCA ("Soil fertility consortium for southern Africa"). These projects are strongly supported by the regional communities they serve as they are clearly having an impact on their lives. While it is undoubtedly true that a range of social and political factors will influence the extent to which CIMMYT can achieve its mission, CIMMYT believes that the success of programs such as the African Livelihoods Program demonstrates that the new strategy, when fully implemented, can have a profound effect on the lives of many of the world's poorest communities. As the panel has observed, the Director General has recruited an exceptionally talented team that will lead the implementation of the new strategy. CIMMYT believes this team has the skills and the commitment to lead the significant changes foreshadowed in Seeds of Innovation and to address the poor staff morale that has resulted from the major restructuring.

Clearly the focus in "Seeds of Innovation" on regionalisation of CIMMYT's activities places increased emphasis on both sub-Saharan Africa and South East Asia. The Center continues to seek new project activities, consistent with the strategy, to expand research and impact on poverty alleviation.

*1) The Panel recommends that senior management and programme directors undertake a much more rigorous process to define goals for the new strategy that provide a framework within which to organize projects and activities and against which progress in meeting the goals can be measured. In addition to strengthening the implementation of the new strategy, the process will enable the programme directors as a team to identify a set of goals that are congruent across the Centre.*

CIMMYT agrees with the recommendation and plans to implement the required actions with immediate effect. The Center in its "Seeds of Innovation" document already has planned for such a set of goals and milestones to be developed during 2005, and for there to be a Center led review of the implementation by late 2006. "Seeds of Innovation" should be perceived as a vision document for the new strategy that is being implemented and will be complemented, as originally planned, by a supplemental plan document entitled "From vision to implementation"

*2) The panel recommends that CIMMYT develop a business strategic plan that will support the successful implementation of the new strategy in the face of a dynamic financial environment.*

CIMMYT agrees with the recommendation and sees the value in a business style strategic plan document. As with recommendation 1 the Center will begin implementation of this recommendation with immediate effect. A business strategic plan that brings into full operation the "Seeds of Innovation" vision will clearly and explicitly state program goals, milestones, deliverables, focus and balance. The document will also show clear linkages between the setting of institution and program goals, resource mobilization and program budgets. This exercise is also very closely linked to the development of our next MTP (2006-2008) and attendant financing and resource mobilization plans.

*3) The panel recommends that CIMMYT management and board undertake a mid-term review in 2007 focused on the implementation of the new strategy, the efficacy of CIMMYT's reorganization and the impact of financial capacity on CIMMYT's programmes and operations.*

CIMMYT agrees with the recommendation.

### **CHAPTER 3**

**General comments:** Overall, the Center found this chapter to be less useful than the report as a whole for two (2) main reasons:

- a) Some complex issues are not fully analysed. For example, the Panel refers to the release of drought tolerant maize OPVs for sub-Saharan Africa and the potential for their cultivation on 1M hectares but questions whether any smallholder farmers grow this material (p27). This analysis does not take into account the considerable role of NGOs in distributing seed to smallholder families and the remarkable increase in the use of improved OPVs in the region.
- b) There appears to be uneven and inconsistent use of CCERs conducted by the Center during 2004. The recommendations of the wheat CCER are largely reflected by the Panel however, in the case of the maize CCER, the conclusions of the Panel do not take into account the CCER report. Furthermore, some of the findings of the Panel on maize research are incomplete and, apparently, contradictory. For example, the maize CCER concluded that *“important contributions had been made to the livelihoods of the resource poor maize producers and to Africa’s maize industry”* while the EPMR report finds that *“it is obvious (sic) that germplasm improvement and better agronomic practices have not yet reached the resource-poor smallholders”*.

The Center notes that the Panel use the number of papers in peer-reviewed journals as a measure of scientific quality however, would no doubt agree that scientific publications are a single and limited measure of scientific excellence. The Center welcomes the Panel’s endorsement of the success of the Rice Wheat Consortium (RWC), winner of the 2004 King Baudouin Award, and agrees wholeheartedly with the need for donor-commissioned project reviews to become routine input to EPMRs.

#### **CHAPTER 4**

**General comments:** The Center is concerned that the overall impression in this chapter is one of CIMMYT falling below critical mass in certain areas such as wheat breeding. The Center is firmly of the view that significant gains in plant breeding methodologies in recent years have increased the efficiency of its plant breeding programs and that simple input measures such as staff classified as “plant breeders” do not adequately reflect the genetic progress that is being made in the improvement of wheat and maize. The Center also notes that the CGIAR 2003 annual report highlights that CIMMYT has the largest investment of all centres in one of the five (5) system outputs: *germplasm improvement*.

- 4) *To facilitate the establishment of a multidisciplinary approach to conducting ex ante impact studies, the Panel recommends that increased integration through time allocation be secured between ITA staff and non-social scientists in the other programmes.*

CIMMYT agrees with the recommendation and notes that a multi-disciplinary approach to research, embracing bio-physical and social scientists, is emphasized in the “Seeds of Innovation” document.

- 5) *The Panel recommends that ITA, in cooperation with the ecoregional programmes, collect data on the variables that explain the heterogeneity of the existing production functions and thus, of yields (both potential and actual) that express differences attributable to productivity gaps within the same agroecological region, due to constraints that limit the adoption of improved technology.*

CIMMYT agrees with the recommendation and considers this approach to be part of a planned wider research effort to assemble and analyze information on factors determining pathways for technology adoption, livelihood impacts and poverty reduction in major wheat- and maize-based farming systems of developing countries.

- 6) *The Panel recommends that (the) ITA (Programme) initiate macroeconomic studies by 2006 in close cooperation with IFPRI and other CGIAR Centres. The highest priority should be assigned to sub-Saharan African countries.*

CIMMYT agrees with the recommendation insofar as it refers to analysing sectoral and rural development policy determinants of wheat- and maize-based farming systems improvement and to identify and advocate appropriate policy and institutional responses.

7) *The panel **recommends** that maize research in CIMMYT identify the high priority Marginal Maize Production Areas (MMPAs) in each mega-environment. Based on such MMPAs, a seed delivery system for improved cultivars should be developed jointly with partners as a vehicle to make CIMMYT's upstream maize research results available to resource-poor farmers.*

CIMMYT accepts the recommendation to focus on low-yielding areas caused by abiotic, biotic and socioeconomic constraints. CIMMYT has a comparative advantage in the development of germplasm for low to very low yielding environments to which much of our germplasm development efforts in sub-Saharan Africa have been directed. We agree that seed delivery systems require further development and, towards this aim, CIMMYT has recently hired a seed systems specialist for our African Livelihoods Program.

8) *The panel **recommends** that maize breeding and research efforts in the following areas be intensified:*

a) *Grain quality characteristics of high priority to end users in MMPAs, combined with more systematic research and breeding to reduce mycotoxin contamination on the grain;*

CIMMYT agrees with this recommendation however, notes the need for additional, sustainable resources to ensure that new initiatives have a medium to longer term outlook. In the meantime, CIMMYT will explore opportunities for collaborative work in this area with IITA.

b) *Testing and evaluation of breeding materials directly in the MMPAs, for identification of the best material for release;*

CIMMYT notes this recommendation and observes that it is routine procedure for experimental materials to be tested in their target environments. CIMMYT has made very significant progress in MMPAs using farmer participatory "Mother-Baby" trials (>1M ha in southern Africa sown with improved maize using this approach) and acknowledges the recommendation as being a strong endorsement of this approach.

c) *Non-transgenic host plant insect resistance research to speed up the process of integration of the highly resistant CIMMYT germplasm into new varieties;*

CIMMYT notes this recommendation. CIMMYT has invested in host plant resistance work for at least 30 years and considerable progress has been made however, increasingly transgenic approaches to insect resistance are providing significant technical gains. We will continue to work on an integrated pest management strategy that is reflected in a number of ongoing projects.

d) *Application of fast track breeding techniques (doubled haploid, MAS, NIR techniques) in all maize breeding activities in CIMMYT;*

CIMMYT partially agrees with this recommendation as the value of these technologies should be assessed on a case-by-case basis. CIMMYT has routinely been using MAS for traits where MAS is more cost-effective than field-based techniques. Recently, CIMMYT has commenced the use of NIR for assessing stover quality in maize and we expect to expand this work. The use of double haploids in maize is a relatively new technique and its utility for marginal and low input environments is yet to be proven. As for our response to 8a) CIMMYT notes the need for additional resources of a medium to longer term nature to implement areas of research of strategic importance.

- e) *Acquisition, storage and management of maize breeding data to eliminate the current back-log.*

CIMMYT agrees with this recommendation and notes that decisions have already been made to allocate more resources to the acquisition, storage and management of maize breeding data within CIMMYT during the next two years.

9) *The Panel recommends that:*

- a) *Crop management research in (the) TES (Program) in the regions be strengthened by allocating NRM (Crop and Resource Management) staff time from other programmes, particularly IAP, to TES;*

CIMMYT agrees with the recommendation and notes that there are at least two avenues to be pursued: a) additional financial resources are needed for the TES Program; and b) increasing the overall staffing and cross program assignments of Crop and Resource Management scientists generally.

- b) *CIMMYT, TES in particular, seek collaboration with other CGIAR Centres in the region, including shared appointments of agronomists and other natural resources specialists;*

CIMMYT agrees in principle with the recommendation. We will follow up on some initial discussions that have already been held with three other centres and also on emerging collaboration among centres within the Water and Food Challenge Program.

- c) *The Crop and Resource Management Group, TES and other ecoregional programmes enhance strategic research on natural resource management, particularly for improved water and nutrient use efficiency.*

CIMMYT agrees with the recommendation. Already there is an increased emphasis on more strategic research through two recent appointments and we plan to enhance this approach in future projects

10) *The Panel recommends that the IAP breeding teams work closely with crop management and social science groups to develop cultivars that are suitable for conservation agriculture, use water efficiently and are resistant to storage losses.*

CIMMYT notes the recommendation and observes that activities in the RWC have embraced genotype by management (conservation agriculture) interactions for some time. The plant breeding programs in both maize and wheat, in recent years, have aimed at the development of germplasm with an emphasis on input use efficiency (water) and resistance to storage losses (maize) and the development of materials suited to conservation agriculture. The breeding programs in Mexico run a parallel selection program under conservation agriculture and conventional conditions.

11) *The Panel recommends that IAP undertake long term experiments to evaluate cropping system sustainability with the results being fully utilized for strategic research as well as for demonstration purposes.*

CIMMYT agrees with the recommendation insofar as it relates to long-term trials conducted on CIMMYT's experimental stations in Mexico and notes that trials over the past 10 years in Mexico have provided an excellent platform for strategic research and demonstration. In regional locations, CIMMYT collaborates with research partners to effectively design, manage and utilise long-term crop management trials.

12) *The Panel recommends that IAP increase its research in maize cropping systems and their development.*

CIMMYT agrees with the recommendation and we expect to focus attention on the maize producing regions of Asia where demand is increasing at the fastest rate.

## **CHAPTER 5**

13) *The Panel recommends that the data acquisition, data management and genebank user interface be upgraded in the CIMMYT genebank for both wheat and maize as a matter of urgency.*

CIMMYT agrees with the recommendation and notes that significant steps are already underway through several different system-wide initiatives to develop a range of integrated modules to fully computerise data acquisition, genebank management, germplasm evaluation and database query across both crops.

## **CHAPTER 6**

**General comment:** The Center is very pleased to note the Panel's comments at the end of the chapter: *"in terms of developing stress resistant wheat and maize targeted at smallholder producers farming in harsh environments CIMMYT has no peer. In that sense, the quality of science at CIMMYT is outstanding"*.

## **CHAPTER 7**

**General comments:** CIMMYT is pleased that the panel affirms the importance of effective partnerships to the "Seeds of Innovation" strategy and acknowledges the track record CIMMYT has already established in this regard. The Center agrees that the formation of meaningful partnerships and alliances with other CGIAR centers, NARS, NGOs and ARIs will be essential if CIMMYT and other CGIAR centers are to remain relevant to the communities they serve. For this reason, CIMMYT has wholeheartedly embraced the concept of a formal alliance with IRRI and strongly supports the recommendations of the oversight committee convened by the Rockefeller Foundation. However, the Center also shares the view of the panel that there is considerable scope for greater integration of activities with many other CGIAR centers and is committed to ongoing dialogue with the centers mentioned in the report in order to build critical mass, improve efficiencies and enhance the impact of CGIAR activities on the lives of the poor. CIMMYT concurs with the Panel's suggestion that there must be clear definition of those interactions that will be critical to implementation of the "Seeds of Innovation" strategy. The Center fosters excellent relations between individual CIMMYT scientists and scientists from other institutions and there are many examples of highly productive interactions with NARS and NGOs throughout CIMMYT's regional networks.

14) *The Panel recommends that:*

a) *Training coordinator position be relocated to an independent Unit reporting directly to the DDG-R;*

CIMMYT notes the recommendation. As set forth in the CIMMYT strategy, training and capacity building activities are an integral part of the knowledge management and sharing activities of the ITA Program. These activities are closely related to broader ITA thrusts on the orientation of CIMMYT and its partners to livelihoods and poverty reduction; support to the use of best practices; priority setting and impact assessment; and, advocacy of effective policies to foster impact on the ground.

b) *The Training Unit working together with programme directors develop a priority setting tool, both thematic and geographical. The resulting priorities should then be used to allocate resource to the programmes;*

CIMMYT agrees in principle with the recommendation for training purposes and plans to implement a priority setting tool as part of the enrichment of the Resource Allocation Tool that was developed during the strategic planning exercise, noting that priorities for capacity building need to be determined within and across programs.

*c) CIMMYT develop innovative alternative funding schemes for training*

CIMMYT agrees in principle with the recommendation and is actively exploring a variety of options internally and with external stakeholders, including private sector support. Fellowship programs, both internally and externally funded, will be implemented to facilitate capacity building.

## **CHAPTER 8**

**General comments:** The Center is extremely grateful for the thought the EPMR panel has given to this section of the report and Appendix VII. The Board recognises that certain aspects of governance oversight of CIMMYT have failed in the past and has been working with the new management team to improve governance processes.

During its March 2005 meeting, the Board held a one day session to review CIMMYT's governance. A strong consensus was reached on a concept for full and in depth reform of our governance system. This concept will be further developed in the coming months along with a detailed business plan for its implementation after formal approval during the November 2005 Board meeting. Many of the EMPR observations have reinforced our own analysis of the Board's strengths and weaknesses and the recommendations provide a very constructive framework to guide the reform process. At the end of this process we expect that CIMMYT will have a fully revamped governance system of the highest international standards.

In the meantime, we have initiated a number of specific changes in response to the EPMR report with the aim to address the following:

- a) Improved quality of the information provided to the Board.
- b) Agenda setting that is organised to encompass both continuous items of Board work and strategic issues.
- c) Performance evaluation of the Director General that is clearly aligned with CIMMYT's key objectives.
- d) Better use of CCERs as the primary mechanism for science review.
- e) Greater role for the Board in resource mobilization.
- f) Better monitoring of progress on key CIMMYT business issues.
- g) No overlap of trustees on the Audit and Finance and Administration Committees.

Finally, CIMMYT wishes to record that it will continue its dialogue with IRRI and is fully committed to achieving the vision of governance and management recommended by the oversight committee convened by the Rockefeller Foundation.

*15) To help ensure that CIMMYT builds and sustains high functioning Boards, the Panel recommends the establishment of a governance committee with responsibility for a range of activities essential to Board effectiveness, including defining more clearly the role of the board, developing a more strategic process for identifying and recruiting board members, assessing board performance on a formal basis, evaluating the performance of members before re-election, recommending improvements to board practice, such as meeting design and preparation, information flow and communication, and developing an orientation and ongoing education program for members to enhance their performance*

The Board is committed to fulfilling its role to the highest possible standards; with this goal in mind the Board has agreed to further reduce its size to no more than seven appointed members while maintaining the appropriate mix of skills, and to enhance the roles of the Audit and Finance and Administration Committees as agents of the Board. Rather than create a separate governance

committee CIMMYT intends to engage a specialist consultant to help the Board and its committees clarify their roles and put in place a more strategic process for identifying and recruiting board members, assessing board performance on a formal basis and evaluating the performance of members before re-election. The consultant will also provide advice on meeting design and preparation, information flow and communication and will work with the Board to develop an orientation and ongoing education program for trustees. It is anticipated that the consultant will also be engaged to review the effectiveness of the Board's processes, in the first instance on an annual basis. In future it is intended that the Board as a whole will explicitly address governance functions in lieu of a governance committee.

*16) The Panel **recommends** that a dedicated staff person in the DG's office be identified to serve as the Board Secretary. This position should have sufficient status within the organization, clear responsibility and also adequate time to provide support and coordination for the board.*

CIMMYT agrees with the recommendation and has already (effective March 2005) implemented this recommendation.

## **CHAPTER 9**

**General comments:** CIMMYT is pleased that the Panel recognised the role the new Director General has played in leading the institution through an extremely difficult transition which involved painful restructuring and reorientation such that CIMMYT can continue to be relevant in today's environment. The Panel clearly acknowledge the complexity of the change process that is being lead by the Director General and his management team and it is pleasing that the quality of the program directors that will be critical to the future success of CIMMYT's strategy is acknowledged elsewhere in the report. Notwithstanding the commitment of this group, CIMMYT is acutely aware of the poor morale of many CIMMYT staff and in total agreement with the Panel that this needs to be addressed with utmost urgency.

In addition to the specific recommendations made by the Panel we would like to put on record a number of important observations and suggestions that will be acted upon by the Center:

- a) The host country agreement will be reviewed.
- b) Careful attention will be paid to the new matrix management arrangements; effective implementation will be monitored by the Board and, where necessary, management training programs will be put in place.
- c) Professional project and finance management systems will be implemented.
- d) There will be close fiduciary oversight of Generation Challenge Program funding.
- e) A comprehensive business plan to deliver the strategy articulated in "Seeds of Innovation" will be developed for approval at the November 2005 Board meeting.
- f) Corporate services functions will be strengthened.
- g) The human resources function will encompass the support of the Center's human resources strategy.
- h) CIMMYT has agreed, in principle, to implement the One Staff policy.
- i) A new performance management system to support the new organisational structure will be implemented.
- j) New financial oversight measures have been implemented.
- k) CIMMYT will budget annual surpluses of the order of \$2M until 2007 to ensure that working capital of 90-120 days of operations is accumulated.

*17) The Panel **recommends** that management review the staff survey results in detail with special attention to staff morale, communication of policies, clarity of goals, performance recognition, and staff evaluation, and take appropriate corrective action as a matter of urgency.*

CIMMYT agrees with the recommendation. Clearly, CIMMYT is in a period of transition and it is inevitable that staff morale has been affected over the past two years which have seen down-sizings. CIMMYT will work extremely hard to ensure that all staff have clarity on the future and an important aspect of this will be a new One Staff policy that is already agreed in principle by the Board. Consistent with recommendations 1) and 2) we fully expect that communication of roles and responsibilities to staff, with attendant policies and procedures, will greatly assist staff function and morale.

*18) The Panel **recommends** that management give priority to reforming financial management at the Centre, including budget, staffing and related systems, with highest priority given to the development of a computerized financial management system that provides real on-time financial information to users; and urgently develop (in consultation with programme staff) a transparent resource allocation process consistent with needs of the matrix management system.*

CIMMYT agrees with the recommendation. We have already commenced the implementation of the following systems which are the initial building blocks for the development of a more comprehensive financial management system:

- An integrated human resource information system (HRIS); the first phase of this project will be implemented by the end of March '05 and the complete staff database will be finalized by the end of June '05.
- CIAT's project manager application. We plan to have an effective project management system in place during the 3<sup>rd</sup> quarter of '05.

The issues surrounding the development and implementation of a completely new financial management information system are being currently reviewed and we are evaluating options of moving to a shared service with another CGIAR Center as a first priority.

*19) The Panel **recommends** that management carefully examine the correctness of the net assets (equity) balance for 2004 attributable to the increase in 2003 (of approximately US\$ 2.0 million) from fixed assets write-off and revaluation.*

CIMMYT notes this recommendation and has reviewed it with our External Auditors who have confirmed that, while the detail that was presented in the 2003 financial statements was less than clear, the treatment was correct. The disclosure issue has been clarified in the 2004 financial statements and the relative balances of CIMMYT's net asset categories are correctly stated.

*20) The Panel **recommends** that the Board and management develop a set of financial indicators for measuring the Centre financial performance and health. The indicators should supplement those developed by the CGIAR System in close consultation with CGIAR Secretariat and Centre Finance Directors.*

CIMMYT agrees with the recommendation. We have discussed and agreed upon a set of financial indicators at the March '05 Board meeting. These indicators are based on those developed by the CGIAR.

*21) The Panel **recommends** that a full cost recovery/pricing system for support services be implemented to recover the full costs from projects and users of services. This will reduce the pressure on unrestricted funding and make it available for other high priority activities at the Centre, including building the working capital to the required level.*

CIMMYT agrees with the recommendation and has already implemented changes within the '05 budget that will lead to full cost recovery from projects and users of services. It is expected that

through a combination of restructuring of our internal costing practices and improved project costing when submitting proposals to donors, we will be able to substantially improve our performance in this area.

22) *The Panel **recommends** that Board and management:*

- a) Make substantial efforts and allocate adequate time for the careful review of the external audit (at headquarters and regional operations), management letters and the audited financial statements with the notes;*
- b) Carefully review the annual audit plans and scope of external audit for headquarters and regional operations;*
- c) Formally assess annually the performance of the external auditors before deciding on their re-appointment.*

CIMMYT agrees that the external audit function is crucial to the fiduciary oversight of the Center by the Board and asserts that its Audit Committee takes its roles in relation to the External Auditors seriously. The CIMMYT Board Audit Committee and full Board will continue to commit substantial time and effort for the careful review of external audit reports for headquarters and regional offices. The Committee annually receives audit plans, and will review the external audit scope to reflect management's and the Board's assessment of risks, taking into account the changing nature of the Center's programs at headquarters and in the regions. The Audit Committee will develop and implement a formal plan for assessment of the External Auditors prior to renewal or selection of new auditors.

23) *The Panel **recommends** that Board and management review the scope of internal audit work and the capabilities of the senior internal auditor and make the required changes to strengthen this important function.*

The CIMMYT Board and Management agree that CIMMYT must have a strong internal audit function. The scope and capabilities of the internal audit function will continue to be under review and all necessary and appropriate actions will be taken.

**Conclusion:**

The Center shares the view of the Panel that "the Centre is now poised to move forward into the future". CIMMYT notes the conclusion of the Panel that "there are still outstanding issues, but for the most part the hard work is behind it" however, we stay firmly committed to the remainder of the task ahead. While we agree with the Panel that "the new strategic plan provides a strong vision for CIMMYT in the future" we share its concerns that more work is needed at the implementation and goal setting levels. The Center in its document "Seeds of Innovation" indicated that it would review the status of implementation of the new strategy in late 2006, a suggestion that dovetails well with the view of the EPMR Panel.

In its concluding comments the panel rightly looks at the CIMMYT of tomorrow. The panel indicates some of the many challenges that still are ahead in a changing world; and draws attention to the key role that CIMMYT has had since its inception of providing public sector improved germplasm. CIMMYT recognizes and restates its clear role in this area. This is one of its enduring strengths as explicitly highlighted in the new strategy. CIMMYT also recognizes the importance of the substantial new investment that is needed by the Center that results from the financial crisis prior to 2002. CIMMYT hopes that donors heed the comment of the Panel that the Center must "seek additional capital support from donors".

**D.R. Marshall**

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9 March 2005

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Dear Drs Pinstруп-Andersen and Reifschneider,

I am pleased to transmit to you the Report of the Panel that conducted the Fifth External Programme and Management Review (EPMR) of the International Maize and Wheat Improvement Centre (CIMMYT) headquartered in Mexico. The Panel reviewed, as requested, the research programme and its outputs and impacts, as well as the management and governance, of the Centre.

CIMMYT suffered a severe financial crisis in mid-2002 provoked by the complete rundown of the Centre's capital reserve. A number of factors appear to have contributed to this financial crisis. However, deficiencies in the oversight of the Centre's finances by the Board of Trustees of CIMMYT appear to have been a significant contributing factor. As a consequence, this Panel examined governance issues more closely than EPMRs of other Centres and has made several recommendations for the improvement of the governance of CIMMYT. However, some of the issues facing the CIMMYT Board are common to the boards of other CGIAR Centres. Therefore in an Appendix to the report, the Panel proposes a more functional and strategic approach to Centre Governance to provoke consideration of the issue across the system.

CIMMYT over the last 18 months has gone through a major transformation. It has a new mission, strategic plan and programme structure. It has a younger staff profile that is better aligned to meet to the needs of its new strategic plan, and the staff have greater skills in a range of modern technologies. CIMMYT also has a new management team in place as well as new scientific leadership. However, the transformation is ongoing - CIMMYT is still a Centre in transition - and the Panel made a number of recommendations to improve both the management of CIMMYT and its scientific programmes. The Panel felt it was too early to

judge the effectiveness of the changes that have happened, and are continuing to happen, at CIMMYT. As a result the Panel has recommended that the CIMMYT Board and management undertake a mid-term review in 2007 to assess the progress towards the full implementation of the new structure and programmes and their effectiveness.

I wish to thank my fellow Panel members who worked together in a common cause with great enthusiasm, commitment and sense of purpose. It was a pleasure to work with them. I also wish to sincerely thank, both personally and on behalf of the Panel, Sirkka Immonen from the SC Secretariat who served as a resource person and supported the Panel throughout the review. Her assistance was always timely and effective and her exceptional organizational skills ensured the completion of the review as planned. Last, but not least, I thank Selcuk Ozgediz and Manny Lantin from the CGIAR Secretariat who helped from a distance and provided valuable input the governance and management components of the review.

Finally all the Panel Members join me in expressing our appreciation for the opportunity to participate in the challenging task of conducting this Review. We hope our report will be useful to the CGIAR, CIMMYT and its partners.

Yours Sincerely

D.R. Marshall  
Chair, External Review Panel

CONSULTATIVE GROUP ON INTERNATIONAL AGRICULTURAL RESEARCH  
SCIENCE COUNCIL AND CGIAR SECRETARIAT

**REPORT OF THE  
SIXTH EXTERNAL PROGRAMME AND MANAGEMENT REVIEW  
OF THE  
CENTRO INTERNACIONAL DE MEJORAMIENTO DE MAIZ Y TRIGO  
(CIMMYT)**

**Review Panel:** Don Marshall (Chair)  
Eugenio J. Cap  
Shu Fukai  
Peter G. Goertz  
Maureen K. Robinson  
Edward N. Sayegh

Sirkka Immonen (SC Secretariat)

SCIENCE COUNCIL SECRETARIAT  
FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

March 2005



## **EXECUTIVE SUMMARY**

### **Introduction**

This review covers the period since the Fourth EPMR which was initiated in 1997. During this time the Centre has seen marked change both internally and in its external environment. Internally, the Centre has been through a deep financial crisis which coincided with the appointment of a new DG in 2002, the development of a new mission and strategic plan which led to the implementation of a new research programme structure, and a radical shift in its staff profile as a result of staff downsizings and a staff renewal programme to better align its staff competencies with the new programme structure. It has also been engaged in lengthy discussions with a sister Centre, IRRI, about close alliance, possibly merger, and a decision on closer collaboration has been reached.

The changes in the external environment include the “gene revolution” in molecular genetics and genomics, the controversy surrounding the development and release of genetically modified organisms (GMOs), the “IT revolution” in information sciences and bioinformatics, growing private investment in plant breeding of non-hybrid crops, the changing intellectual property environment, the evolution of the CGIAR including the continuing shift in funding from unrestricted to restricted and introduction of Challenge Programmes. Clearly, CIMMYT is a Centre in transition – reforming and reshaping itself to face a rapidly changing external environment.

Given the dynamic environment in which CIMMYT now operates and the considerable but relatively recent internal change, the Panel conducted Fifth EPMR in two parts. A retrospective part, where we assessed the outputs and impacts of the Centre, was based on the old programme structure since the new Programmes had not been in place long enough to have had an impact in their own right; and a prospective part, based on the new programme structure, where we critically examined the appropriateness of CIMMYT today to fulfil its mission into the future. We attempted a comprehensive and rigorous review of CIMMYT’s governance, management and research that included meetings with the Board members, scientists, administrators, a range of stakeholders and site visits to four countries.

### **Does CIMMYT have a Future?**

The first question the Panel asked was- Are the changes CIMMYT is going through those of a dynamic organization, with a clear and unique mission, positioning itself to realize that mission, or simply the death throes of an organization that has past its use by date? In short-Does CIMMYT have a future?

The argument against a future role for CIMMYT is simple. CIMMYT’s own analyses indicated that there are more than ample supplies of both wheat and maize in the world to meet current global demand so that prices are at historically low levels in real terms. Further, that for the foreseeable future, growth in supply can more than match growth in demand given the expected improvements in technology generated by the very large investment (several orders of magnitude greater than CIMMYT’s total budget) by both developed and the more rapidly developing countries in wheat and maize breeding and research.

The counterargument is based on the fact that the primary target for CIMMYT's research are the more than 500 million people in the world who are resource poor farmers and their families who live in extreme poverty, grow their own food, and often rely on wheat and maize as their primary source of calories. For these farmers, the global levels of production of wheat and maize, as well as their price, are largely irrelevant. Further, the research outputs targeted at large scale commercial farmers operating in high input production systems in developed, and the more rapidly developing, countries seldom spillover to resource poor farmers in low yielding, low input environments typically subject to multiple biotic and abiotic stresses.

The Panel therefore concluded that the case for the continued support of CIMMYT in developing germplasm with multiple stress resistance specifically targeted at resource poor farmers was strong and clear. Such improved germplasm that was not only accessible to resource poor farmers but specifically targeted to their needs was essential if they were to benefit from the ongoing scientific advances in genetics, genomics, and breeding.

## **Governance**

CIMMYT's Board of Trustees has been one of the more stable components of the Centres organizational structure over the last three years. It is composed of a set of expert, talented and experienced individuals. Yet, collectively the Board, which carries ultimate responsibility for maintaining adequate internal controls, failed in its oversight role of the Centre's finances and management. The cost of this failure was borne not by the Board but by the staff and Programmes of the Centre.

The Board has moved to improve its structure and performance in recent years so that the Governance today at CIMMYT is better than it was in 2001/2. However, it is still not good enough and the Panel identified several areas of the Board's operations that require remedial attention. These include, but are not limited to:

- The size composition and committee structure of the Board
- Board orientation and learning
- Board evaluation of the DG, the Board Chair and itself
- Board oversight of the Centres finances and resource development

A number of the issues identified by the Panel are not unique to the CIMMYT Board but are shared to varying degrees by the Boards of all the CGIAR Centres. In an Appendix to this report the Panel proposes a more functional and strategic approach to Centre Governance as a means of heightening awareness of the issues across the CGIAR and perhaps invoking a coordinated systemwide approach to their resolution.

## **Management**

The present DG of CIMMYT, faced with an extremely difficult financial and management situation when he arrived in mid-2002, has moved decisively to stabilize the finances of the Centre, streamline the management structure, and strengthen the control and monitoring mechanisms of the Centres operations. However, while much has been achieved in improving the management of CIMMYT over the last two years, there are areas where significant problems still exist which will require remedial action by the management in the near term.

Several of these problems are not new. For example, the problems identified by this review, including the lack of an effective computerized financial management system, a functioning project management system and the lack of a full cost recovery/pricing system for support services, were all issues identified in the last EPMR. Nothing was done to resolve these issues in the intervening 7 years, which makes their resolution now more pressing. The Panel has also suggested that steps be taken to improve the internal and external audit functions at the Centre (Chapter 9).

The Panel surveyed both IRS and NRS staff as part of the review process. The survey indicated there was a significant problem with staff morale in the Centre, which is perhaps not surprising given the recent financial problems and staff downsizings, but it was also clear that staff were unhappy with several aspects of CIMMYT's HR policies and processes. The Panel feels these problems require urgent corrective action to ensure CIMMYT can continue to attract and retain good staff.

### **Strategic Planning**

In 2002 the CIMMYT Board and new DG initiated a wide ranging and comprehensive planning process which resulted in a new mission, organizational structure, and strategic plan for the Centre. The planning process itself was excellent – thorough, inclusive of CIMMYT stakeholders, systematic and well documented. The new mission, while ambitious, is in line with the CGIAR goals of alleviating poverty, increasing food security and improving sustainability. The new strategic plan provides a strong vision for CIMMYT in the future where priority will be given to a holistic approach to understanding livelihood systems, impact –oriented Programmes that will catalyze interdisciplinary research, decentralization of Programmes away from Mexico, and partnerships that can leverage capacity and help accelerate results. It also describes a new programme structure for the Centre which is a matrix of 2 global and 4 ecoregional interdisciplinary Research Programmes and 5 disciplinary Groups (Chapter 2).

However, the new strategic plan also suffers from some significant deficiencies. Perhaps the most important was the absence of clearly defined goals, the heart of an effective strategic plan that would drive priority setting and resource mobilization and allocation. It also lacked a clear definition of the areas of wheat and maize research targeted at reducing poverty where CIMMYT had a strong comparative advantage, another key to effective priority setting. The Panel included in its recommendations that these deficiencies be rectified and that senior management, as well as the 6 new Programme Directors who are all now in place, develop specific goals for the strategy as well as a business strategic plan and operational plans to facilitate the successful implementation of the new strategy in a dynamic and challenging environment that CIMMYT finds itself.

### **Accomplishments and Impact**

Despite the ongoing funding crisis at CIMMYT for much of the review period and the turmoil it invariably created, the Panel was very pleased to find that CIMMYT's scientific staff continued to produce a range of outstanding outputs. In the case of wheat, these include high yielding bread wheat lines in a range of maturity classes with durable rust resistance and improved adaptation to drought stressed environments. In the case of maize, a major output has also been improved germplasm with specific traits including enhanced drought tolerance,

herbicide resistance to facilitate *Striga* control, and Quality Protein Maize. In the case of Natural Resource Management, the outputs include the development of conservation agriculture practices –zero tillage, crop rotations and raised beds that reduce soil degradation and water use and increase production.

CIMMYT also produced strong evidence of the impact of its work. A formal study of the value of durable multigenic resistance to leaf rust in developing country agriculture estimated the net present value of the research since its inception was US\$ 5.36 billion and the benefit: cost ratio was 27:1. CIMMYT's scientists received the World Food Prize in 2000 for work in the development of Quality Protein Maize (QPM) which is now being grown on nearly one million hectares worldwide. Zero-till and raised beds are also being widely adopted in a range of cropping systems in developing countries, particularly in Asia.

The Panel feels that CIMMYT should be congratulated for its continuing strong practical outputs from its science that continue to have a strong positive impact on the livelihoods of resource poor farmers.

### **Quality and Relevance of Science**

The Panel examined a number of components of the quality of science and relevance of science at CIMMYT.

Science relevance is primarily determined by the quality and effectiveness of the strategic planning, priority setting and resource allocation processes put in place by the Centre. Judging by the outstanding impacts of CIMMYT's research, there is no question as to the relevance of past research programmes. Due to the lack of a fully articulated strategic plan, with clear goals and priorities, the Panel found it difficult to judge the relevance of CIMMYT's research going forward.

Staff quality, research infrastructure and quality assurance processes are all important in determining the quality of science. Staff quality at CIMMYT was good to very good. The Panel was favourably impressed by the uniformly high quality of the newly appointed directors of CIMMYT's new Research Programmes. However, the research infrastructure at CIMMYT is highly variable and has been often neglected during the ongoing financial crisis. Considerable investment will be required to bring it up to the level expected of an international research institute in a number of areas (Chapters 5 and 6).

The internal and external quality assurance procedures at CIMMYT appear to be operating well except in two areas. One is the evaluation of staff performance which the staff, but perhaps not management, thought was inadequate. The other was the very limited use by the Centre of CCER's to monitor the quality of science of its Programmes.

In an attempt to assess the overall quality of science in the Centre, the Panel compared the record of publications in refereed international journals of CIMMYT scientists against the record of scientists in IRRI. Overall IRRI staff published more papers than CIMMYT staff, with a greater proportion of staff at CIMMYT producing less than one paper per year than the staff at IRRI. While publications in refereed journals are only one indicator of science quality, it is widely used internationally, and would be a useful way for CIMMYT to show improvement in the future.

## **Implementation of the New Programme Structure**

CIMMYT is in the process of implementing its new programme structure based on a matrix of 2 global and 4 ecoregional Research Programmes, which deliver outputs and impacts, and 5 Disciplinary Groups, which ensure continuing scientific excellence. While major steps have been taken by CIMMYT in implementing its new programme structure, there are still outstanding issues which if left unresolved may cause significant problems in the future.

Matrix management systems are complex and can be difficult to effectively implement. They require scientists to manage staff, resources and relationships, skills they may not have developed to the level required. The Panel felt that CIMMYT was underestimating the difficulty in implementing its new matrix management system and needed to put in place detailed implementation plans to make it operational including:

- Definition of the responsibilities and authorities of Programme Directors and Disciplinary Group Leaders
- Development of operating procedures for all staff with roles and responsibilities
- Provision of leadership and management training for senior scientific and management staff
- Streamlining and revision of the support systems and processes of the Centre

The Panel also critically examined the progress towards the implementation of the MTP projects for each Research Programme (Chapter 4). While the Panel raised specific issues in relation to a number of the Programmes it was clear that it was not yet possible to critically assess the capacity of the new Programmes to deliver their planned outputs and impacts. The Panel therefore strongly recommends that the CIMMYT Board and management undertake a mid-term review in 2007 to assess progress towards the full implementation of the new structure and Programmes.

## **Conclusions**

CIMMYT is clearly a Centre in transition. It has to a degree stabilized its financial situation and put in place a plan to rebuild its financial reserves. It has developed a new Mission, Strategic Plan, and Programme structure through a comprehensive and inclusive consultation process and is well down the road in implementing change. It has put a new management team in place and gone through a significant staff renewal process. The Centre is now poised to move forward into the future. There are still outstanding issues as always but for the most part the hard work is behind it.

The Panel is convinced that a compelling case exists for the continuation of CIMMYT to develop germplasm resistant to multiple biotic and abiotic stresses and designed to meet the needs of resource poor farmers, dependent on wheat or maize, living in harsh environments. To a great degree these are the forgotten people; the advances in agricultural research and development over the last fifty years have largely passed them by, and the varieties they grow and their yields have often been static for decades. For the first time, the combination of a well characterized collection of genetic resources and modern genetic technologies make the development of improved germplasm with significantly increased yields for such difficult environments an achievable goal. CIMMYT is uniquely placed to achieve this goal.



## RECOMMENDATIONS

### Chapter 2

1. The Panel **recommends** that senior Management and Programme Directors undertake a much more rigorous process to define goals for the new strategy that provide a framework within which to organize projects and activities and against which progress in meeting the goals can be measured. In addition to strengthening the implementation of the new strategy, the process will enable the Programme Directors as a team to identify a set of goals that are congruent across the Centre.
2. The Panel **recommends** that CIMMYT develop a business strategic plan that will support the successful implementation of the new strategy in the face of a dynamic financial environment.
3. The Panel **recommends** that CIMMYT Management and Board undertake a mid-term review in 2007 focused on the implementation of the new strategy, the efficacy of CIMMYT's reorganization and the impact of financial capacity on CIMMYT's Programmes and operations.

### Chapter 4

4. To facilitate the establishment of a multidisciplinary approach to conducting *ex ante* impact studies, the Panel **recommends** that increased integration through time allocation be secured between ITA staff and non-social scientists in the other Programmes.
5. The Panel **recommends** that ITA, in cooperation with the ecoregional Programmes, collect data on the variables that explain the heterogeneity of the existing production functions and thus, of yields (both potential and actual) that express differences attributable to productivity gaps within the same agroecological region, due to constraints that limit the adoption of improved technology.
6. The Panel **recommends** that ITA initiate macroeconomic studies by 2006 in close cooperation with IFPRI and other CGIAR Centres. The highest priority should be assigned to sub-Saharan African countries.
7. The Panel **recommends** that maize research in CIMMYT identify the high priority Marginal Maize Production Areas (MMPAs) in each mega-environment. Based on such MMPAs, a seed delivery system for improved cultivars should be developed jointly with partners as a vehicle to make CIMMYT's upstream maize research results available to resource-poor farmers.
8. The Panel **recommends** that maize breeding and research efforts in the following areas be intensified:
  - a) Grain quality characteristics of high priority to end users in MMPAs, combined with more systematic research and breeding to reduce mycotoxin contamination on the grain;
  - b) Testing and evaluation of breeding materials directly in the MMPAs, for identification of the best material for release;

- c) Non-transgenic host plant insect resistance research to speed up the process of integration of the highly resistant CIMMYT germplasm into new varieties;
  - d) Application of fast track breeding techniques (doubled haploid, MAS, NIR techniques) in all maize breeding activities in CIMMYT;
  - e) Acquisition, storage and management of maize breeding data to eliminate the current back-log.
9. The Panel **recommends** that:
- a) Crop management research in TES in the regions be strengthened by allocating NRM staff time from other Programmes, particularly IAP, to TES;
  - b) CIMMYT, TES in particular, seek collaboration with other CGIAR Centres in the region, including shared appointments of agronomists and other natural resources specialists;
  - c) The Crop and Resource Management Group, TES and other ecoregional Programmes enhance strategic research on natural resource management, particularly for improved water and nutrient use efficiency.
10. The Panel **recommends** that the IAP breeding teams work closely with crop management and social science groups to develop cultivars that are suitable for conservation agriculture, use water efficiently and are resistant to storage losses.
11. The Panel **recommends** that IAP undertake long term experiments to evaluate cropping system sustainability with the results being fully utilized for strategic research as well as for demonstration purposes.
12. The Panel **recommends** that IAP increase its research in maize cropping systems and their development.

## Chapter 5

13. The Panel **recommends** that the data acquisition, data management and genebank user interface be upgraded in the CIMMYT genebank for both wheat and maize as a matter of urgency.

## Chapter 7

14. The Panel **recommends** that:
- a) Training coordinator position be relocated to an independent Unit reporting directly to the DDG-R;
  - b) The Training Unit working together with Programme Directors develop a priority setting tool, both thematic and geographical. The resulting priorities should then be used to allocate resource to the Programmes;
  - c) CIMMYT develop innovative alternative funding schemes for training.

## Chapter 8

15. To help ensure that CIMMYT builds and sustains high functioning Boards, the Panel **recommends** the establishment of a governance committee with responsibility for a range of activities essential to Board effectiveness, including defining more clearly the role of the board, developing a more strategic process for identifying and recruiting board

members, assessing board performance on a formal basis, evaluating the performance of members before re-election, recommending improvements to Board practice, such as meeting design and preparation, information flow and communication, and developing an orientation and ongoing education program for members to enhance their performance.

16. The Panel **recommends** that a dedicated staff person in the DG's office be identified to serve as the Board Secretary. This position should have sufficient status within the organization, clear responsibility and also adequate time to provide support and coordination for the board.

## Chapter 9

17. The Panel **recommends** that Management review the staff survey results in detail with special attention to staff morale, communication of policies, clarity of goals, performance recognition, and staff evaluation, and take appropriate corrective action as a matter of urgency.
18. The Panel **recommends** that Management give priority to reforming financial management at the Centre, including budget, staffing and related systems, with highest priority given to the development of a computerized financial management system that provides real on-time financial information to users; and urgently develop (in consultation with Programme staff) a transparent resource allocation process consistent with needs of the matrix management system.
19. The Panel **recommends** that Board and Management carefully review the adequacy of the level of net assets (equity) balance for 2004 which was increased in 2003 by approximately US\$ 2.0 Million from fixed assets write-off and revaluation.
20. The Panel **recommends** that the Board and Management develop a set of financial indicators for measuring the Centre financial performance and health. The indicators should supplement those developed by the CGIAR System in close consultation with CGIAR Secretariat and Centre Finance Directors.
21. The Panel **recommends** that a full cost recovery/pricing system for support services be implemented to recover the full costs from projects and users of services. This will reduce the pressure on unrestricted funding and make it available for other high priority activities at the Centre, including building the working capital to the required level.
22. The Panel **recommends** that Board and Management:
  - a) Make substantial efforts and allocate adequate time for the careful review of the external audit (at headquarters and regional operations), management letters and the audited financial statements with the notes;
  - b) Carefully review the annual audit plans and scope of external audit for headquarters and regional operations;
  - c) Formally assess annually the performance of the external auditors before deciding on their re-appointment.
- 23) The Panel **recommends** that Board and Management review the scope of internal audit work and the capabilities of the senior internal auditor and make the required changes to strengthen this important function.