

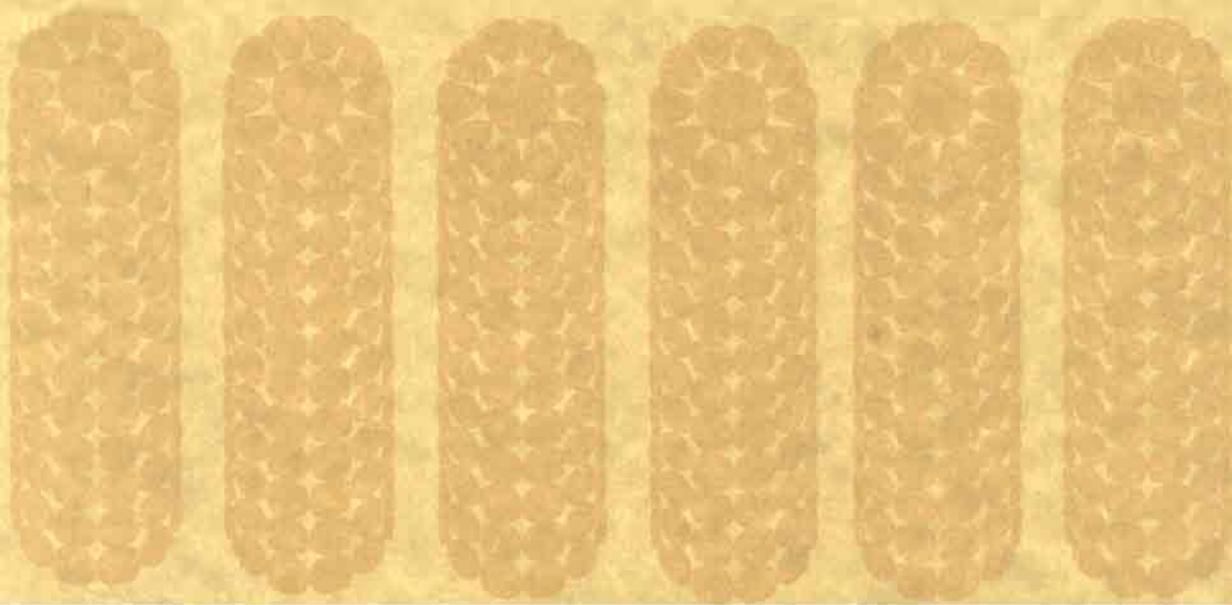


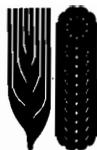
CIMMYT

CIMMYT Maize Program

*S*trategic Plan

1995 and Beyond





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I THE STRATEGIC PLAN'S PURPOSE, CONTEXT AND INTENDED USE

The purpose of the Maize Program strategic planning process is to provoke strategic thinking, decision making and acting — so that the Program shapes its own future rather than merely reacting to events. The process used to develop the plan entailed a series of analytic steps that pointed up the most important issues facing the Maize Program now and into the future.

The Maize Program Strategic Plan draws upon and takes into account the priorities established by the CGIAR and CIMMYT's Strategic Plan (while recognizing that some of the assumptions in the CIMMYT strategic plan are now out of date). Strategic issues were identified during planning sessions held in June 1993 and involving all Maize Program staff.

It is hoped that the Strategic Plan will: 1) focus Program staff on a common vision for the future; 2) serve as a guide for policy formulation and priority setting, as well as the development of operational plans, accountability systems and budget preparation; and; 3) provide a mechanism for explaining the Maize Program's current and future directions to external audiences (other CIMMYT personnel, funders, NARSs, and others).

II THE MAIZE PROGRAM'S MISSION, PARTNERS AND BENEFICIARIES

The Maize Program's mission is to:

Help the poor in developing countries by increasing the productivity of resources committed to maize while protecting natural resources. This will be accomplished through the preservation, improvement, and dissemination of genetic resources; the development of environmentally compatible crop management practices; the provision of research methodologies and information; and through training and consulting.

The CIMMYT Maize Program's partners are the national agricultural research systems (NARSs)* of developing countries. The beneficiaries are the maize farmers and the poor of developing countries, who will benefit from increased, sustainable maize production.

* The term "national agricultural research systems" is used in this document to describe a range of entities including: 1) public maize research programs, 2) public extension agencies, 3) non-government organizations, 4) farmer cooperatives, 5) and domestic and transnational seed companies.

III THE EXTERNAL ENVIRONMENT

The external environment in which the Maize Program operates is defined in detail under the section entitled "External factors" (page 16). In general terms, the Program is smaller than it was in the recent past, having been reduced along with other agricultural research activities supported by the Consultative Group on International Agricultural Research (CGIAR). Although resources have been reduced, the Maize Program has a budget in excess of US \$8 million annually and a staff of approximately 35 professionals. Personnel are located in seven outreach facilities around the world and at CIMMYT headquarters. A key element of the current environment is that the increased activity in maize seed production, distribution and marketing by private enterprises has created concern in the minds of both funders and researchers about the role of public institutions in the various areas of maize research. A corollary is the reduced participation in seed production and distribution by governmental agencies. This has facilitated the increase in activity by local seed enterprises as well as by multinational companies.

IV STRATEGIES FOR KEY ACTIVITIES

1. Germplasm and Biodiversity Preservation

As CIMMYT headquarters is located near the center of origin of maize and near areas where maize landraces have developed and are still used extensively and as CIMMYT has the mandate from the CGIAR for maize improvement in the developing world (except for parts of West and Central Africa), CIMMYT works in partnership with national programs toward the comprehensive (i.e., in situ and/or ex situ) preservation, characterization, and utilization of the genetic variability in maize and its wild relatives.

The CIMMYT Maize Program will:

- Use the most current preservation technologies to preserve the maize accessions stored in the germplasm bank at CIMMYT headquarters in El Batán (now some 12,300).
- Maintain and periodically update a database containing easily accessible information on the accessions.
- Expand efforts in identifying core sets from collections.
- In so far as resources allow, establish prebreeding activities to facilitate the flow of stored germplasm into active breeding programs.
- Assist developing countries in preserving maize germplasm of their countries, specifically in regeneration activities, and providing back-up storage for certain collections.
- Explore possibilities of improving local landraces “in situ” in conjunction with NARSs and farmers.
- Include CIMMYT-developed improved germplasm in permanent storage as significant improvements are documented.
- Comply with all CIMMYT, CGIAR, FAO and Biodiversity Convention policies regarding the distribution of germplasm, adhering to unrestricted distribution whenever possible.
- Analyze the genetic diversity in landraces as well as in improved germplasm.

2. Germplasm Improvement and Dissemination of Genetic Resources

This activity is especially important since:

- Improved germplasm is the primary product of the Maize Program.
- Germplasm requirements of farmers will continue to evolve.
- As exotic or source germplasm is agronomically improved, new options can be made available to NARSs.
- Germplasm improvements will become more specific, since many of the larger genetic gains have been made and scientists must now address challenging constraints that keep improved cultivars from fully expressing their genetic potential.
- Advances in genetics, plant breeding and related sciences have made new tools available to present day researchers.

Improved, stress tolerant germplasm in the hands of resource poor farmers is a necessary prerequisite to 1) meeting the increasing demand for food in developing countries without depleting natural resources and 2) guaranteeing income and food security in rural areas of developing countries. Although improved germplasm is moving more and more into the developing world, there is a recognized need to adapt this product to the circumstances of resource poor farmers in specific areas. It is the Maize Program's primary mandate to develop and disseminate germplasm suited to the needs of such farmers through whatever means, and to foster and complement related efforts by NARSs.

The Maize Program will:

- Focus on improving germplasm and developing breeding methodologies for regions/environments where the specific needs of resource poor farmers for improved, adapted germplasm are not met by alternative suppliers, and where cost-effective solutions are feasible.
- Allocate resources according to the type of germplasm used in these regions/ environments and to breeding strategies which will most likely result in germplasm adapted to these areas.

- Direct international testing toward key sites representing these regions/ environments.
- Actively seek the partnership of NARSs in target regions/environments, supplying germplasm and other technologies, as well as appropriate training. Preference will be given to regional germplasm improvement networks as an effective way to foster technology transfer and use regional resources efficiently.
- Continue to better define environments where maize is grown and to assess their relative importance for maize production, as part of setting priorities for future activities.
- Freely distribute international trials and germplasm, once key sites and target regions/environments are served.

a. Population improvement

Since improved maize populations have proven useful for developing both varieties and inbred lines for hybrids, germplasm research activities will continue to emphasize population improvement. Populations that are heterotic with one or more other populations will be emphasized and new populations will be developed by combining superior germplasm of similar heterotic patterns. Other existing populations will be de-emphasized or shelved, after their superior fractions have been identified and extracted for introgression into the superior populations.

Self pollination will be emphasized in population improvement. Superior, selfed progenies that have good combining ability will be recombined.

b. Hybrid and open pollinated variety development

During the past two decades, interest in hybrid maize has increased significantly in many developing countries, while agricultural inputs, seed technology, infrastructure, etc. in some others remain too low to support the efficient use of hybrids. There is thus a need for both hybrids and varieties in the countries served by the Maize Program. The strategy is to develop both hybrids and open pollinated varieties from the improved populations described above. Lines, experimental varieties, and experimental hybrids will be evaluated through an international testing network coordinated in Mexico and through regional testing networks coordinated by outreach staff. To improve the accuracy of evaluating these materials, key sites (where reliable representative data can be collected) will be designated for each target environment.

C. Breeding traits emphasized

The Maize Program will emphasize the improvement of traits that are considered to be important for large areas of the developing world and which are often beyond the capacity of NARSs to improve. These include host plant resistance to several important maize insect pests; drought tolerance, especially at flowering time; and the ability to perform well in low-input farming systems. Breeding for resistance or tolerance to streak virus will be emphasized in Africa, stunt virus in Central America, downy mildew in Asia, acid soils in South America, and leaf and other miscellaneous diseases in Mexico. Efforts will be made to 1) incorporate all of the above characteristics into hybrids and varieties that are agronomically acceptable in all aspects including yield, standability, and grain type and 2) transfer successful breeding strategies that enhance these traits to interested, capable NARSs.

3. Crop Management Research

The Maize Program has elected to allocate more core resources to germplasm improvement than to crop management research. However, crop management research is essential, since it is acknowledged that at essentially all yield levels, significant gains can be made in maize production through the improvement of agronomic practices. The Maize Program will foster efforts which enhance NARSs' capacities to develop crop management recommendations. This will be accomplished through the introduction of crop management practices resulting from Maize Program research in this area and through training and regional networks.

The Maize Program will:

- Develop and introduce improved crop management practices that are environmentally friendly and proven to be effective in maize cropping systems.
- Place high priority on establishing regional crop management research training centers in Africa, Asia, and South America.
- Work toward the financial and technical independence of these centers; however, the Program will actively pursue funding and guarantee adequate staffing as long as necessary.
- Provide technical and strategic leadership for regional networks involving crop management research, where a regional approach is more likely to provide a cost-effective, sustainable solution to common problems. Priority will be given to

networks for regions where maize is the prevalent staple food and where there are possibilities of establishing links with other networks on natural resource management and germplasm improvement.

4. Natural Resource Management Research

Agriculture deals with natural resources. Conscious of the importance of such resources for future generations, the Maize Program will generally focus its efforts toward developing germplasm and cropping systems which support the qualitative and quantitative preservation and improvement of natural resources. In addition, specific research on natural resource management will be conducted as part of a special, CIMMYT interdisciplinary unit, with technical and operational input from the Maize Program. Collaboration with other international research centers and national programs will be solicited.

The Maize Program will:

- Develop germplasm which makes more efficient use of natural resources, especially land area, water, and soil fertility.
- Discourage crop management techniques which irreversibly exploit natural resources, but will stress strategies to preserve natural resources in any activities related to crop management research.
- Address problems related to the degradation of natural resources in maize cropping systems.

5. Research Methodologies and Information

While the major task of international centers is to support NARSs in applying known agricultural technologies, specific needs for the development of new research methodologies arise.

The Maize Program will:

- Develop methodologies for germplasm improvement and agronomic and natural resource management research, focusing on products beyond the capacity of NARSs to develop and considered important for large areas of the developing world.

- Disseminate research results through training courses, workshops and conferences, networks, and CIMMYT-imprimatur publications and refereed journals.
- Invest in developing 1) breeding methodologies for host plant resistance to insects and major diseases, for drought tolerance, for nutrient use efficiency, and for acid soil tolerance, and 2) sound crop and natural resource management practices.
- Work with CIMMYT economists, national programs, and others to document impacts of collaborative, international agricultural research.

6. Training

Training will continue to be an important activity in the Maize Program, although limited resources have made it necessary to reduce its scope. Training in crop management will in most instances be done on a regional basis, whereas both basic and advanced breeding courses will be conducted at CIMMYT headquarters in Mexico. It is acknowledged that collaborative activities with NARSs, as present in networks or in individual interactions between CIMMYT and NARS scientists, have a strong influence on the empowerment of NARS scientists.

The primary objective is to upgrade the capacity of those NARS scientists who are most likely to apply their knowledge upon return to their countries.

The Maize Program will:

- Strive to maintain high quality training activities, targeted primarily to specific training requirements of NARS scientists, but offered to private company and non-government organization scientists in certain instances.
- Support the establishment of regional crop management research training centers.
- Solicit and provide funds to ensure that agronomists from resource poor NARSs can attend the regional courses.
- Train scientists from NARSs, private industry, and non-government organizations through collaborative research on improved maize technologies.
- Orient training heavily toward practical and participatory activities.

V GENERAL STRATEGIES

1. Resource Allocation Priorities

In agreement with the mission statement, resource allocations will be made in such a manner that the poor in developing countries are best served. To achieve this goal, the criteria for allocating resources will include:

- Value of production influenced, including the size of the ecology or mega-environment (lowland tropical, subtropical and mid-altitude, or highland).
- Likely success through the activity.
- Alternative sources of supply.
- Likelihood of wide-scale adoption of technology developed by the activity.
- Impact on the poor.

Activities in Africa will be emphasized.

2. Collaborative Research and Networks

The primary collaborators of the Maize Program will continue to be national programs of developing countries. Collaborative research will be designed and executed where it appears likely, based on the respective capabilities of the Maize Program and specific NARs, that more gains are to be made through collaborative efforts than by each working alone. These projects may take place under special funding arrangements or may be accomplished by pooling resources of the participating organizations.

Collaboration with other international agricultural research centers will be established as a high priority in areas of research where other centers and the Maize Program have common interests.

Collaboration with other organizations (e.g., agricultural universities, private companies and other non-government organizations) will also be established in instances where common interests can be identified. Special emphasis will be placed

on collaboration with advanced laboratories for transferring technologies to Maize Program scientists and developing countries.

The formation of networks of national programs within specific regions will be encouraged to support the joint development of common technologies and the transfer of technologies throughout the region. Where the Maize Program is the executing agency, the networks will be managed in close consultation with NARS representatives.

3. Organization and Management

The Maize Program will be organized into subprograms, support units and outreach teams in such a manner that it is clear to all staff members where responsibilities lie within the program. The organization will be modified as the need arises.

The Director and Associate Director will lead the management of the Program. Major decisions will be made in consultation with subprogram and outreach leaders. The process of management by objectives will be fully implemented as a management and staff evaluation tool, with reviews being formally completed annually for all staff.

4. Fund Raising Activities

The primary responsibility for obtaining core funds from the CGIAR and their subsequent allocation lies with the Director General's office.

The development and funding of maize special and core restricted projects is primarily the responsibility of the Maize Program. Scientists are encouraged to generate project proposal ideas for review by the Maize Director's office. Proposals that fit within the general objectives and which appear to have a reasonable chance of funding will be fully developed and submitted to the Deputy Director General of Research for review and recommendation. Recommended projects will be submitted to appropriate donors either by the Maize Program directors or by the Director General's office. Donor contacts and project follow up will be made by the Director General, the Deputy Director General of Research, the Maize Director's office or his/her designate (often an outreach team leader). Special project funding for Maize Program activities can be used for core or complementary activities.

5. Outreach vs. Headquarters Activities

The objectives of the Maize Program will be met through coordinated efforts of headquarters and outreach locations (currently seven). As the needs of developing countries change or when an alternate supplier can meet the needs more efficiently than the Maize Program, staff locations and regional activities will be adjusted. Mexico will remain the central control point of all activities and efforts will be made to retain a critical mass of staff at headquarters.

6. Biotech Activities

The Maize Program will work closely with the CIMMYT Applied Biotechnology Laboratory to develop techniques that can be used to supplement conventional breeding procedures and make them more efficient. As breeding tools (particularly marker assisted selection) prove advantageous, they will be implemented in all areas in which they have proven to be useful. As transformation techniques are developed, the Maize Program will help identify areas in which this technology can be applied to generate improved maize products and will fully cooperate in the evaluation of transgenic products. All techniques that prove useful in CIMMYT evaluations will be transferred to those NARSs that have the capacity and interest to implement this technology.

7. Germplasm Distribution

Germplasm bank accessions will be made freely available to all who request them, subject to restrictions that may be imposed by various agreements made by CIMMYT. Improved germplasm that has been announced as available will be distributed to anyone who will agree not to restrict its further distribution, subject to seed supply and with preference to the national agricultural research programs of developing countries. Unfinished and/or unannounced germplasm will be made available under the same conditions at the discretion of the scientist in charge of the particular material, taking into consideration the availability of seed for distribution. All germplasm entries and parents of hybrids that are distributed through the international testing program will be available in limited quantities to all cooperators for use either as breeding source material or for direct use in commercial products. Royalties or license fees will not be requested by the Maize Program; however, recipients will be requested to comply with a material transfer agreement. The

recipients of germplasm are requested to inform the Program whenever finished products, developed by using germplasm obtained from the Program, are made available to farmers.

8. Impact Measurement and Documentation

The impact of the Maize Program will be measured periodically, mostly through surveys conducted by the CIMMYT Economics Program with assistance from outreach personnel. Maize Program scientists will also conduct appropriate experiments to document the progress being made in germplasm improvement, crop management technologies, and improvement in research methodologies.

VI DIVISION OF THE MAIZE PROGRAM IN 2000 *

The Program will fulfill its maize improvement mandate by developing high-yielding, stress tolerant, and stable inbred lines, open-pollinated varieties, and hybrids, that are suitable for farming conditions of poor farmers in developing countries and that meet the preferences of consumers. To accomplish these objectives, the Program will use superior heterotic populations, efficient breeding methods to improve maize for traits of importance, evaluations at key sites, and modern and efficient statistical and biotechnological tools.

The Program will have tightly-focused, well-managed regional programs which will interact with local organizations to best serve resource poor farmers. Each regional program will participate in a network involving major NARSs of the region and beyond, through other regional programs, (where a research product has broader applicability) develop and disseminate improved, environmentally compatible maize technologies. The regional programs will be linked to one another and to Mexico, both through electronic communication and through an integrated, global system of germplasm improvement and testing. Linkages will be ensured through conscientious management that reflects a sound knowledge of all aspects of germplasm development and utilization in target countries. The composition of the research team at an outreach site will be determined by the disciplinary expertise and experience required by the research agenda assigned to that site.

The objectives of the Maize Program will be reevaluated systematically in the context of changes in cost-effectiveness and in the needs and capabilities of NARSs, which will be monitored and supported via networks. Relationships with both public and private entities will be positive, since a strong regional presence will provide information and flexibility in responding to their concerns.

Strong, professionally attractive regional centers will encourage the movement of staff and activities among postings. This will increase opportunities to work in project-

* The vision described here assumes that it will be possible to increase certain activities in the regions.

oriented teams which can rapidly respond to changes in external environments, while maintaining a stable CIMMYT presence in each region to interact with NARSs.

The Maize Program will have a portfolio of crop and natural resource management research projects which directly respond to global concerns about environmental degradation in maize-based systems. Efforts in crop management research will be clearly focused to exploit complementarities between improved germplasm and improved management in regions where external inputs are increasingly beyond the reach of many farmers.

The achievements and impacts of the Maize Program will be well-documented, and its future directions clearly plotted. These attributes, along with a sound plan for obtaining stable funding, will allow the pursuit of activities in a positive institutional climate. Such a climate will ensure creativity and productivity among the staff.

Appendix **FACTORS AFFECTING THE MAIZE PROGRAM**

EXTERNAL FACTORS

1. **Population** is projected to increase from today's 5.5 billion to 8.0 billion by 2020, with a large portion of this in developing countries and particularly in low income families, who are most likely to consume maize.
2. **The utilization of maize** both as a food and feed crop is projected to increase by more than 4% annually for at least the next ten years.
3. **NARSs** will continue to vary considerably in their capabilities and policies.
4. **A significant trend** is the growing inclination of public sector research entities to generate revenue from the sale of seed and/or germplasm.
5. **Multinational private companies** and, in some instances, national and local private companies, can in some developing world environments generate satisfactory profits from producing and selling maize hybrids and thus represent a useful means of germplasm distribution for CIMMYT. However, multinational companies do not generally distribute open pollinated varieties, given their unprofitability.
6. **Non-government organizations** are increasingly involved in seed distribution and sometimes production, representing additional potential collaborators.
7. **Potential alternative sources of supply** exists for these maize activities:

Hybrid development and testing - Private companies have increased their activities considerably in the past 15 years, but their emphasis will usually be on high yield potential areas.

Training - Universities can supply this service, but they are not oriented toward practical issues nor do they have an advantage in conducting certain kinds of training that rely on intimate knowledge of conditions in developing countries. In

addition, other international centers and regional programs (such as the Regional Program in Support of Basic Grains, or PRIAG, in Central America) can provide training opportunities.

Crop and natural resource management - Companies and producer cooperatives are providing more support for immediate production concerns, and where regional programs have been successful there is more consultation between national programs. CIMMYT remains the main supplier of agronomic research which transcends national boundaries, and is the only source of management recommendations for the Program's special trait germplasm (e.g., super early maize).

NARSs support - International agencies are providing some support to NARSs via consultancies, but not in any significant volume. This situation is not anticipated to change in the foreseeable future. Short-term consultants cannot replace regional Maize Program staff who provide that service. A trend is for more of the consulting work that CIMMYT conducts to take place electronically.

The provision of research methodologies and information to NARSs - Universities are increasingly able to provide information from widely available data bases. However, it is anticipated that the demand for CIMMYT assistance for accessing data systems will increase in the near term, as will the demand for literature searches.

8. **Increased emphasis on the environment by funders, NARSs and individuals** is a trend that is likely to continue.
9. **The Biodiversity/Environmental Convention** established numerous guidelines and policies that affect the Maize Program in various areas, especially germplasm conservation and transfer.
10. **The trend for intellectual property rights** is toward more protection of germplasm and germplasm products.
11. **The technologies of genetic engineering and marker assisted selection** are advancing at a rapid rate and becoming more available.

12. **Technologies** such as geographic information systems, modeling, and computers are advancing at a rapid rate.
13. **Finances** are limited, in part due to general disillusionment with agricultural research. Funders are expecting more input and control.
14. **Global climate change** trends would suggest increased instability leading to risk in marginal areas.
15. **Price trends** and trade liberalization are likely to have major impacts in some regions. Prices on inputs are likely to rise because input subsidies are being reduced or eliminated.
16. **High cost of doing business in Mexico.** As Mexico develops, costs will probably escalate and increased urbanization will put more pressure on the CIMMYT research station at El Batán.

INTERNAL FACTORS

Strengths:

1. An **effective network** to evaluate germplasm and to move germplasm, information and crop and natural resource management technologies around the world. Former CIMMYT trainees contribute significantly to this network.
2. The **ability to focus long term**, so long as we have enough core funding to maintain a critical mass.
3. An **outstanding germplasm base**, the germplasm bank, and the quality of CIMMYT maize populations and lines.
4. **International staff** who possess considerable experience and knowledge of national programs. A project oriented team approach that incorporates sound disciplinary work.
5. **Capable and reliable support staff.**

6. **Extensive relationships, contacts, and credibility with NARSs and governments.** In part the relationship is due to training, especially at headquarters. Flexibility in dealing with NARSs.
7. **Ability to influence scientific standards** in the regions.
8. **Cost effectiveness** in developing maize technologies for the developing world.
9. **Regional programs** that are strong.
10. **Laboratory and biotechnology facilities and programs**, including the seed health laboratory which enables the free movement of seed.
11. **A scientific database** containing a large amount of unique data on genotype adaptation and crop response to management.
12. **Adequate physical infrastructure**, including training facilities, etc.
13. **Good relationships with Mexico, CIMMYT's host country.**
14. **Good communication links**, which help provide easy access to scientists from the developed world.
15. **A good reputation with donors.**

Challenges for the future:

1. **Mandate to increase productivity while protecting natural resources.** This is a difficult challenge but also an opportunity, representing an important area of work for CIMMYT.
2. **Diversity of staff.** This is both a management challenge and a strength of the institution. It is a challenge because it is difficult for all to agree on a common direction.
3. **Breadth of mandate**, which makes it difficult to find a focus.

4. **The challenge of reconciling viewpoints of affected stakeholders** (e.g., funders and NARSs). It is also a challenge to establish information flow between groups.
5. **Financial constraints to agricultural research.** CIMMYT had far less difficulty obtaining funding in the past. There is now an opportunity to build better relationships with donors. There may also be opportunities in special project funding and deriving income from products.
6. **Information dissemination.** Lack of means for informing national programs about CIMMYT research and policies. The challenge is to strike a balance between information to NARSs and technical journals and to determine how to put a value on information to NARSs and other types of publications.
7. **Commodity focus.** This is both a strength and a weakness.
8. **Dependence on others to achieve impacts.** Dependence on others over whom we have little control for processes, policies, seed production facilities, etc. No direct sales of our products.
9. **Measurement of impact.** Little is known about how much CIMMYT material is being used by the private sector. It is not known how to factor in social values — that is, how to incorporate other-than-monetary criteria. This difficulty is especially acute in the case of crop management research.
10. **Bringing in new ideas and retaining younger staff** who will help keep the organization innovative, creative and dynamic.
11. **Maintaining a sense of purpose and direction** in the face of reduced support and increased criticism.
12. **Aging definitions of mega-environments** that will need upgrading in the next five years.

13. **Determining activities to reduce as new activities are initiated**, especially in the area of germplasm improvement.
14. **Adjusting to new CGIAR directives**, including collaborative work on an ecoregional basis.

CIMMYT is an internationally funded, nonprofit scientific research and training organization. Headquartered in Mexico, the Center is engaged in a worldwide research program for maize, wheat, and triticale, with emphasis on improving the productivity of agricultural resources in developing countries. It is one of 17 nonprofit international agricultural research and training centers supported by the Consultative Group on International Agricultural Research (CGIAR), which is sponsored by the Food and Agriculture Organization (FAO) of the United Nations, the International Bank for Reconstruction and Development (World Bank), and the United Nations Development Programme (UNDP). The CGIAR consists of some 40 donor countries, international and regional organizations, and private foundations.

CIMMYT receives core support through the CGIAR from a number of sources, including the international aid agencies of Australia, Austria, Belgium, Brazil, Canada, China, Denmark, Finland, France, India, Germany, Italy, Japan, Mexico, the Netherlands, Norway, the Philippines, Spain, Switzerland, the United Kingdom, and the USA, and from the European Economic Commission, Ford Foundation, Inter-American Development Bank, OPEC Fund for International Development, UNDP, and World Bank. CIMMYT also receives non-CGIAR extra-core support from the International Development Research Centre (IDRC) of Canada, the Rockefeller Foundation, and many of the core donors listed above.

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International Maize and Wheat Improvement Center

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