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CGIAR GENDER PROGRAM

WORKING PAPER, NO 21

ENGENDERING ORGANIZATIONAL CHANGE: A CASE STUDY OF STRENGTHENING GENDER EQUITY AND ORGANIZATIONAL EFFECTIVENESS IN AN INTERNATIONAL AGRICULTURAL RESEARCH INSTITUTE

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June 1999

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LIST OF GENDER STAFFING PROGRAM WORKING PAPERS

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Working Paper, No. 20	Taking Stock of Gender Staffing in the CGIAR, 1998; Sara J. Scherr, Deborah Merrill-Sands; May 1999.
Working Paper, No. 21	Engendering Organizational Change: A Case Study of Strengthening Gender Equity and Organizational Effectiveness in an International Agricultural Research Institute; Deborah Merrill-Sands, Joyce K. Fletcher, Anne Starks Acosta, Nancy Andrews, and Maureen Harvey; June 1999.
Working Paper, No. 23	Summary Report, CIMMYT Pilot on Multi-Source Performance Assessment; Linda Spink, Deborah Merrill-Sands, Krista Baldini, Marisa de la O; June 1999.

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CGIAR Gender Staffing Program

CGIAR

The Consultative Group on International Agricultural Research (CGIAR) aims to harness modern science to the sustainable development of agriculture in poor countries. The CGIAR is jointly sponsored by the World Bank, the Food and Agriculture Organization (FAO), the United Nations Development Program (UNDP), and the United Nations Environmental Program (UNEP). It is made up of 16 international agricultural research centers located in 12 developing and 3 developed countries. These research centers specialize in strategic research on agriculture, food policy and natural resources management and provide research management advice. The centers employ 1,200 scientists of 60 different nationalities.

CGIAR Gender Staffing Program

The Gender Staffing Program supports efforts of the CGIAR-supported centers to strengthen the recruitment and retention of highly qualified women scientists and professionals and to create work environments that are equally supportive of the productivity, advancement, and job satisfaction of both women and men. The Program provides funds through small grants, technical assistance and management consulting, training, and information services. The Program, which began in 1991, is coordinated by the CGIAR Secretariat, supported by the members of the CGIAR, and implemented by the Center for Gender in Organizations (CGO) at the Simmons Graduate School of Management at Simmons College in Boston, Massachusetts, USA. The mission of the Center for Gender in Organizations is to serve as a national and international resource for scholars and practitioners who work at the intersection of gender and strategic organizational issues. The Center's work is based on the belief that organizational performance is enhanced by gender equitable work environments that allow both men and women to be active and productive contributors. The Center pursues this agenda through education, collaborative research, conferences, and dissemination of information.

CGIAR Centers

CIAT	Centro Internacional de Agricultura Tropical (Colombia)
CIFOR	Center for International Forestry Research (Indonesia)
CIMMYT	Centro Internacional de Mejoramiento de Maiz y Trigo (Mexico)
CIP	Centro Internacional de la Papa (Peru)
ICARDA	International Center for Agricultural Research in the Dry Areas (Syria)
ICLARM	International Center for Living Aquatic Resources Management (Philippines)
ICRAF	International Center for Research in Agroforestry (Kenya)
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics (India)
IFPRI	International Food Policy Research Institute (USA)
IIMI	International Irrigation Management Institute (Sri Lanka)
IITA	International Institute of Tropical Agriculture (Nigeria)
ILRI	International Livestock Research Institute (Kenya)
IPGRI	International Plant Genetics Resources Institute (Italy)
IRRI	International Rice Research Institute (Philippines)
ISNAR	International Service for National Agricultural Research (The Netherlands)
WARDA	West Africa Rice Development Association (Cote d'Ivoire)

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ABSTRACT

This case study describes, analyzes, and extracts lessons from a collaborative action research project aimed at the dual agenda of strengthening gender equity and organizational effectiveness in an international research organization. The organizational change project focused on analyzing the organization's culture in order to identify deeply held assumptions, norms, and values that were producing unintended and inhibiting consequences for both gender equity and organizational effectiveness. The interventions focused on changing work practices and processes in order to interrupt and transform these cultural assumptions. This case study is written for managers, organizational change agents, action researchers, and consultants interested in enhancing the effectiveness of organizations through strengthening gender equity. The paper lays out in detail the approach, method, process, and analysis used in this major change effort and documents the unfolding results.

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This action research and learning project was carried out under the auspices of the Gender Staffing Program of the Consultative Group for International Agricultural Research (CGIAR) and the Centro International de Mejoramiento de Maiz y Trigo (CIMMYT).[1]

The CIMMYT project has been central to the action research agenda of the CGIAR Gender Staffing Program. The authors express their deep gratitude to CIMMYT's Director General, Professor Timothy Reeves, its managers and staff for providing the initiative and opportunity to carry out this collaborative action research and learning project. CIMMYT opened the doors to the action research team and provided full support and active participation in the work.

We also want to acknowledge the important contribution of Linda Spink, and her colleagues at the Training Resources Group in Alexandria, VA, in providing management consulting support to several of the change initiatives undertaken as part of this organizational change project.

As was the intent of this project, both the action research team and CIMMYT staff have learned a great deal about gender and organizational change in the process. Although this has been an intensive collaboration, the authors accept full responsibility for any errors or omissions in the presentation of the case study.

We also gratefully acknowledge financial support from both CIMMYT and the CGIAR Gender Staffing Program. The CGIAR Gender Staffing Program is funded by The Australian Council for International Agricultural Research, The Ford Foundation, The International Development and Research Center, The Netherlands Ministry of Foreign Affairs, and the Swiss Development Corporation.

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[1] The International Center for Improvement of Maize and Wheat

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FOREWORD

Change in major scientific institutions is often difficult to achieve. Given the general pragmatism of scientists, to initiate change in such institutions through gender-related activities would therefore not be a usual preferred approach.

However, at CIMMYT, the "gender lens" was in fact a key perspective and contribution to extensive organizational change at this world-famous and long-established agricultural research Center. The studies described in this paper catalyzed a large agenda for organizational change which incorporated refocusing of research programs; a move to project-based management; enhanced communication systems – both inside and outside the Center; and a range of human resource initiatives which have contributed to more transparent, fair and rewarding working conditions at CIMMYT.

The role of the external consultants was vital, providing a forum and mechanism for healthy exchange of ideas and issues. The change process is continuing but its spectacular momentum was indeed triggered by the initiatives reported here, and CIMMYT is a better organization because of it.

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El Batan, Mexico
March 1999

I. INTRODUCTION

A. OVERVIEW

This case describes and analyzes an organizational change process aimed at strengthening gender equity and organizational effectiveness in a not-for-profit international agricultural research organization based in Mexico. The Centro International de Mejoramiento de Maiz y Trigo (CIMMYT) has a world-wide reputation for its research into increasing sustainable production of maize and wheat, which are staple food crops in developing countries. CIMMYT was part of the "Green Revolution," having made a significant contribution to the development of high-yielding plant varieties that helped to stave off widespread famine in developing countries in the 1960s. It continues to seek to improve the productivity and sustainability of maize and wheat systems in developing countries around the world.

In order to ensure that it could retain and attract the highest-quality scientists, CIMMYT made an explicit commitment in 1995 to increasing its recruitment of women and to providing a work environment equally hospitable to and supportive of men and women. To accomplish this goal, CIMMYT contracted several consultants and a team of action researchers to help it examine its work environment from a gender perspective, and to support specific changes of policies, management systems, work practices, and work culture in order to develop a more gender-equitable work environment. This case records that process as it has unfolded over two and one-half years.

The intervention has focused on changing deeply held assumptions, norms, and values in CIMMYT that produce unintended consequences for both gender equity and organizational performance. While the change process is far from complete, significant achievements have been realized. The experience is rich in insights into and lessons on the nature of organizational change required to strengthen both gender equity and organizational effectiveness through changing work culture and practices.

This case study is written for managers, organizational change agents, action researchers, and consultants interested in strengthening the effectiveness of organizations through strengthening gender equity. The case lays out in detail the approach, method, process, and analysis used in this major change effort and documents the unfolding outcomes. Our hope is that others engaged in similar change processes can learn from this practical description of how we have worked, what has been accomplished, and the challenges we, as external and internal change agents, as well as the organization continue to face.

B. APPROACH

Our goal has been to assist CIMMYT to create a gender-equitable work environment inclusive of both men and women; stimulate their fullest productivity and satisfaction in their professional and personal lives; harness diverse skills, perspectives, and knowledge; value different contributions and ways of working; and engage both women and men in the decision-making that shapes the work and the work environment.

We begin with two fundamental premises in our analytic framework:

1. that organizations—their systems, practices, structures and norms—are gendered; and
2. that effective and sustainable progress on gender equity can occur only when the change effort integrates the goal of strengthening organizational effectiveness.

We believe that organizations, having been created largely by and for men, tend to be driven by assumptions that reflect the values and life situations of men and of idealized masculinity (Ferguson, 1984; Acker, 1990; Mills and Tancred, 1992). This bias has had two major effects. The first is that our conceptual knowledge of organizational life is quite narrow and limited. What we regard as normal or commonplace—from appropriate workplace behavior to norms of success, commitment and leadership—tends to value traits socially and culturally ascribed to males—independence, individuality, and rationality—while devaluing or ignoring those socially ascribed to females—support, collaboration, and connection. Thus, our understanding of the workplace and our ability to envision alternative structures and systems have been constrained by gendered norms of effectiveness and success (Fletcher, 1998, 1999). The second effect occurs when these norms are put into practice, creating idealized images of work, workers, and success that entrench gender segregation and inequity in the workplace.

From this perspective it is clear that creating gender equitable workplace environments cannot be achieved simply by increasing the numbers of women within the organization, by adapting policies and procedures to women's needs, or even by providing gender-sensitivity training (Kolb, et al., 1998). These actions might relieve some of the blatant discrimination against women in the workplace, but they have little effect on the assumptions that drive behavior and create the structures, systems, and processes that reinforce and reproduce gender inequity. In contrast, the approach to gender and organizational change used in this case focuses on these systems and practices – things that on the surface appear to be merely routine, gender-neutral, artifacts of organizational life – and seeks to change them in ways that will be beneficial not only for women, but also for men and, very importantly, for the organization. The focus is on identifying and changing those systemic issues that both reproduce gender inequity and negatively effect organizational performance, inhibiting the organization's ability to envision alternative work practices or adapt to new demands.

This approach of addressing both gender equity and organizational effectiveness is what we call the "*dual agenda*" (Bailyn, et al., 1997; Kolb, et al., 1998). We have found that linking gender equity to strategic organizational objectives and performance provides a critical leverage for change. It helps to mobilize leadership support and commitment, connect the interests of diverse constituencies with the goals of the change process, and provide a compelling motivation to engage in and sustain long-term and systemic organizational change.

In practical terms, the action research team begins the analysis by looking at the organization through a "*gender lens.*" This lens shapes the inquiry in three ways. First, it focuses attention on dimensions of the organization's culture that have a differential impact on men and women. This would include, for example, the organizational culture (that is, the norms, values, core assumptions, and behaviors promoted in the organization); work processes and practices; roles and types of work; core management systems (such as performance appraisal and reward systems); decision-making and communication processes (both informal and formal); resource allocation processes; accepted leadership and management styles; and the use and management

of time. Time has a strong gender dimension, as women still have primary responsibility for the care of families and for managing private life (Hochschild, 1989).

Second, recognizing that most diagnoses focus on stereotypically "masculine" aspects of organizations, such as systems of power, influence and individual achievement, the gender lens also focuses on the more "feminine" aspects of organizing. This includes things such as systems of support, caring, and collaboration, shining the light on the types of work that are often invisible in organizations. For example, work done to develop people is critical to organizational effectiveness, but is often not captured in the realm of "visible work or visible products" (Fletcher, 1998, 1999).

Finally, as men's experience has traditionally defined "normal," the gender lens explicitly includes women's experiences, especially those aspects that they find problematic or constraining. Like other "learning from diversity" initiatives (Thomas and Ely, 1997), this approach works because women are to some extent outsiders. As such, they are often uncomfortable with the status quo. Their experiences can reveal not only different ways of working and innovative practices (Thomas and Ely, 1997; Martin, 1998), but they can also help to question aspects of the work environment rarely noticed by those in the mainstream. Their perspectives can help to uncover core assumptions—about work, management systems, products, and organizational values—that are gendered and might have unintended negative consequences, not only for women but also for men and for the organization.

C. METHOD

To help an organization understand how widely-held and deeply-rooted work norms and practices can be gendered, we use the concept of mental models developed by Peter Senge at the Sloan School of Management at the Massachusetts Institute of Technology (Senge, et al., 1994). Mental models are:

> *deeply ingrained images and assumptions...which we carry in our minds of ourselves, other people, institutions.... Like panes of glass, framing and subtly distorting our vision, mental models determine what we see and how we act. Because mental models are usually tacit, existing below the level of awareness, they are often untested and unexamined.* (Senge et al., 1994: 235-236)

Mental models are normative, identifying ideal images and modes of behavior that reveal beliefs about, for example, routes to success, exemplary behavior characteristics, organizational loyalty or commitment. They are taken-for-granted or tacit, rarely questioned or discussed, and so apparently natural as to be unremarkable. And lastly, mental models manifest themselves in concrete work practices, structures, processes and everyday routines in work life. These can be formal processes, such as reward systems or performance appraisal instruments, or informal practices, such as interaction styles or demonstrations of commitment such as staying late.

Identifying and analyzing mental models is powerful within the context of gender and organizational change. Surfacing mental models allows us to examine the tacit assumptions that drive organizational behavior, structures, systems, and processes. Most importantly, it allows us to *select* certain mental models–those that meet the dual agenda of having unintended negative consequence both for gender equity and for organizational effectiveness–and raise them to the level of conscious awareness. This allows people to reflect on the *systemic* influences that effect

not only their own personal work situation but also the organization's ability to meet its goals. By making these mental models explicit, this approach disrupts the status quo and gives both men and women new ways of looking at their organization and the systemic, rather than the individual determinants, of behavior (Fletcher, 1997). Moreover, the "naming" of the mental models gives members of an organization a legitimate means to discuss issues and values that are often either tacit or taboo in the organizational culture.

To begin to uncover the mental models, the researchers ask people to describe specific aspects of the organizational culture—written and unwritten rules of success; exemplary behavior or "ideal" workers; formal and informal work processes and decision-making schema; patterns of communication up, down and across the hierarchy; evaluation, promotion and reward systems; and leadership and management styles. Staff are also asked what they consider to be the most pressing challenge or problem facing their work group and the organization as a whole. The research team then analyzes the data to surface underlying assumptions that account for the behaviors, structures, beliefs and norms that both reinforce or reproduce gender inequity and limit some aspect of organizational effectiveness or performance.

A second key aspect of our action research and learning approach is that it is both collaborative and interactive. Researchers work with members in the organization from the beginning to set the goals, frame the inquiry and analysis, interpret the findings, and design change interventions. The researchers' role is more pronounced in the inquiry and analysis phases; the role of the organizational-change agents is stronger when designing and implementing change. Throughout the process, the researchers engage in mutual inquiry. They attempt to understand people's experience and to offer their own understanding of the situations people describe. In doing this, they hope to unlock old ways of thinking and to create an opportunity for new possibilities and options to surface.

We believe that an intensively collaborative process is critical for sustained change. It deepens the analysis and frames it in a way that can be heard and used by the organization. Equally important, it increases the knowledge and skills of change agents within the organization so that they can move the change process forward independently.

Central to this method is the belief that challenging assumptions and questioning ways of thinking require a relational context; that is, movement toward change occurs through growth-fostering interactions (Jordan, et al., 1991) characterized by mutuality, reciprocity and "fluid expertise" (Fletcher, 1998). Thus, it is up to us as researchers to create mutuality in all our interactions, whether with individuals, work groups or the management team. We need to listen carefully to what people say and communicate in everything we say and do that we are co-learners and co-teachers in this process. In the spirit of fluid expertise, the researchers recognize that they have certain perspectives and ways of thinking, and they do not shy away from sharing them. But they also recognize that their expertise is limited, and that, as co-learners, they have much to gain by acknowledging and building on the expertise of their partners in the organization. We believe that this collaborative and interactive approach leads to generative learning, not only for the organization but for the researchers as well.

II. THE CASE STUDY

A. CIMMYT

At CIMMYT, major research areas involve conservation and distribution of genetic resources; plant breeding; plant protection and agronomic practices; biotechnology, socio-economics and policy analysis; natural resource management; and information, documentation, and training.

CIMMYT is one of a consortium of sixteen international agricultural research centers supported and funded by the Consultative Group for International Agricultural Research (CGIAR). The CGIAR comprises more than 50 governments, foundations, and international and regional organizations from developed and developing countries. The CGIAR is co-sponsored by the World Bank, the Food and Agriculture Organization of the United Nations, the United Nations Development Program, and the United Nations Environmental Program. The members of the CGIAR meet semi-annually to coordinate their funding (approximately US$300 million annually), and their strategic priority setting, monitoring, and evaluation processes. While CIMMYT is autonomous with its own Board, it operates within a policy and funding environment shaped largely by the CGIAR. Attention to gender in both research and staffing has been part of this larger policy environment since the early 1990s when the CGIAR Gender Program was established. The Program is designed to support the Centers in their efforts to strengthen gender equity by providing technical advice, resources, information, and cutting-edge knowledge.

CIMMYT has an annual budget of approximately US$30 million from more than 40 donors. After 20 years of solid support for international agricultural research, funding eroded significantly in the 1990s as donors' priorities shifted away from agriculture and food production. The resulting decline in funding put CIMMYT under considerable stress. In the early 1990s, the Center had to undertake a major downsizing in staff and a shift in funding strategy, as it was forced to rely increasingly on project funding rather than the more stable and predictable unrestricted core funding. CIMMYT also had to change its research priorities in response to growing global concerns about the environment and to donors' interest in the sustainable management of the natural resources upon which agriculture depends. CIMMYT also had to reposition itself to take advantage of the developments and opportunities emerging from biotechnology and the potential applications to agriculture. Thus, it was within the context of significant change, both internal and external, that CIMMYT embarked on its efforts to develop a more gender equitable work organization.

CIMMYT has a staff of about 700, of which approximately 110 are internationally-recruited scientists and professionals. The international staff comprises more than 50 nationalities and approximately one-third of the international staff are based outside of the headquarters. Administrative and support staff, technicians, and field staff are primarily Mexican nationals who are recruited locally.

In 1997, women comprised 24% of all staff. They constituted only 16% of the internationally-recruited professional and scientific staff, however. There were no women at the senior management level. Recently women have been appointed to middle-management positions

heading administrative departments, such as finance and human resources. On the positive side, two-thirds of internationally-recruited women are employed in research, the core business of the organization. Yet, while 70% of internationally recruited men are "senior" or "principal" scientists, only 30% of women are at these levels.

The 24% overall representation of women in the Center, and their low numbers within the professional and managerial staff, indicate that women still represent a distinct minority within CIMMYT. Hence, they are vulnerable to predictable organizational dynamics of tokenism and stereotyping; they tend to experience higher visibility and performance pressure; and they have more limited access to social and professional networks (Ely, 1994; Kanter, 1977; Yoder, 1991). Moreover, they have not had the critical mass to form strong coalitions to lobby for change and influence work culture, systems, and practices.

B. ENABLING CONDITIONS

Several critical enabling forces converged to catalyze the gender-staffing initiative at CIMMYT: the presence of a nascent internal constituency of women; a genuine commitment to and interest in addressing gender issues in the workplace among some members of the senior management team; and positive incentives from the funding community. Each of these forces had an effect on the structure of the initiative.

The internal constituency of women professionals interested in fostering gender equity and a more hospitable work environment began to develop in the early 1990s. This group initially was responding to perceived gender inequities in salaries between men and women and in the job categorization of some professional women. The attention being given to gender staffing in the CGIAR provided legitimacy for their concerns and a safer environment in which to meet and speak out. Their skills and commitment to working together on gender issues were strengthened through their participation in a CIMMYT-sponsored management training course for women. The influence of this group was strengthened considerably by the informal leadership provided by a member who has been a dedicated change agent throughout the process.

Key members of the senior management team provided leadership and support for CIMMYT's efforts to create a more gender-equitable work environment. The Deputy Director General, impressed by the "dual agenda" accomplishments of another Center (Kolb and Merrill-Sands, 1999), decided to address gender staffing issues seriously and explicitly at CIMMYT. He established a Gender Task Force, hired a consultant to examine possible gender inequities in salary and position classifications, and commissioned this action research project to identify aspects of the work culture that could be changed to enhance both gender equity and organizational effectiveness. The new Director General also stood solidly behind this work. He wanted CIMMYT to take a leadership position in the CGIAR in promoting gender equity. Further, he also recognized that linking effectiveness and gender-staffing issues was in line with his vision of the changes the Center needed to undertake in order to respond to new donor priorities and other challenges in CIMMYT's external environment.

The explicit commitment of the donor community to strengthen attention to gender in research, training, and staffing provided a powerful incentive for CIMMYT to address gender staffing. The CGIAR Gender Program provided partial funding to support the work, technical assistance, and visibility and recognition for CIMMYT's efforts within the consortium. The availability of external funding made it less risky for managers to take on the initiative; and the external support

and recognition helped managers and staff to sustain their efforts even when the change process was challenging.

Finally, the first consultancy on parity in salary and position classifications found anomalies and inconsistencies for both men and women. This helped to dispel the notion that work on gender was targeted only at improving conditions for women, perhaps even at the expense of men. As a result of this consultancy, some of the major discrepancies in salaries were corrected and the Center initiated a process, with strong participation from staff, for developing a more systematic and transparent system of position classifications and criteria for promotions. The outcome was very interesting from a gender perspective. The new system resulted in 40% of the internationally-recruited women being reclassified at higher levels compared to only 8% of the men (Cafati, et al., 1997). This outcome helped to make the case in the Center that working on gender is more than simply increasing numbers of women; it requires changes in core management systems and work practices.

C. CONSTRAINING CONDITIONS

CIMMYT has had a long history of low female representation in the professional ranks, and only one woman in a senior management position. Moreover, the previous leadership did not consider gender equity to be a priority, thus there was a legacy of resistance to such issues in the organization. Despite explicit commitment from the two most senior managers, there were initially few other champions for the work among senior management. The fact that the one female senior manager lost her job in a downsizing at the beginning of the change effort created skepticism amongst some staff regarding the depth of management's commitment to gender equity.

Funding pressures and downsizing also created a challenging environment for undertaking significant organizational change. Although such initiatives disrupted the status quo and opened up "organizational space" to think about new ways of working, they also made many staff feel vulnerable, overburdened with work, and hesitant to take on uncertainty.

Finally, although it was strategically advantageous that the new Director General had aligned the gender initiative with his own change agenda, it also created a situation in which many parallel change efforts were moving ahead simultaneously, intensifying time and work pressures.

III. INQUIRY AND ANALYSIS

A. ACTION RESEARCH TEAM AND THE STRUCTURE OF COLLABORATION

The action research team was initially composed of three female members who represented diverse disciplines and areas of expertise. It included the leader of the CGIAR Gender Program, an anthropologist who had previously worked as a researcher in another CGIAR Center; a professor of organizational behavior with expertise in gender and organizational change; and a manager/consultant who had served as a Director of Finance and Administration in another CGIAR Center. The team was joined, during the implementation phase, by an organizational change specialist. The research team worked most directly with the CIMMYT senior management team and the Gender Task Force. (Later in the process, the Change Catalyst Committee was established to move the desired organizational changes forward.) Funding for the change effort over two and one-half years is estimated at about $160,000, excluding CIMMYT staff time.

The action research team was based in the United States and able to visit CIMMYT only periodically (initially every 2-3 months). Therefore, the internal collaborators had to carry the process forward in the team's absence and to keep the team informed of important developments. This arrangement made it more difficult to sustain momentum for change, as we discuss below.

Several key principles shaped the approach and method of the project. First, we wanted the project to model the values the team held to be intrinsic to a gender-equitable work environment. Therefore, the project was to include diverse groups within the organization and to foster wide participation of staff in the change process; to share information widely and openly; to foster collaborative working within the team and with the organization; and to operate non-hierarchically. We believed that reinforcing the substance of our analysis and feedback with our own behavior would strengthen the initiative considerably.

Of these values, fostering a collaborative mode of working, whereby the action researchers, as external change agents, and CIMMYT staff, as internal change agents, could interact as co-learners, was the most difficult to achieve. Perhaps because this mode of working is at odds with traditional consultancy models, in which outside experts are hired to assess the problem, generate recommendations, and oversee a predetermined implementation process, our efforts at co-creating the initiative often floundered. Interestingly, it was not only CIMMYT staff who fell back on traditional, more directive modes of working when things got tough. Often, both in our workings as a team and in our interactions with CIMMYT members, we found ourselves falling short of our own collaborative model in order to "save time" or to "make things simpler." Of course, compromising the collaborative process did neither; but the experience did help us to appreciate the complexity of enacting—rather than simply advocating—a model of fluid expertise. Despite some of these difficulties, our orientation toward collaborative principles led us to be very explicit and consistent in sharing information with our organizational partners. Each of the major phases of work was documented in terms of method and content, and a summary was always shared with the senior management team and the Gender Task Force.

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The project was designed to have six phases: set-up, for negotiating and building the basis for collaboration; mutual inquiry and data collection; data analysis; feedback and brainstorming; experimentation and implementation; and monitoring and adapting. It should be noted, however, that these phases do not unfold in a linear fashion. They overlap and are iterative: for example, inquiry and data collection continue throughout the change process; observations are fed back to staff and managers on an ongoing basis. The first four phases of the project, from entry to feedback, took approximately six months. The last two phases—experimentation and implementation, and monitoring change—have been going on for eighteen months and continue. These phases are summarized below.

B. PROJECT SET-UP

The set-up visit had two primary objectives: to work directly with people on site to finalize the project design and ensure that it was truly collaborative; and to foster a deeper understanding within CIMMYT of our dual-agenda approach to organizational change. Organizational effectiveness and gender are not commonly linked in organizations; therefore, it is important to give people an opportunity to think about these ideas before the general interviewing begins. The leader of the action research team gave a seminar on the approach and carried out exploratory interviews. Thereafter, a briefing note on the project was circulated to all staff and the project plan was reported in CIMMYT's weekly newsletter.

The leader worked with the Gender Task Force and the senior management team to develop an interview plan and random sampling method for respondents. The random selection of sampling of interviewees was important to ensure that a broad range of views was sought, and that findings were not perceived to be biased in favor of any particular group within the organization.

There was considerable discussion about whether the project should focus on international staff exclusively or include all CIMMYT staff. On one hand, it made sense to focus only on international staff, as this was the mandate of the CGIAR Gender Program and the research team did not have strong Spanish-language skills. Moreover, international and national staff are subject to different policies and conditions of work, and several human-resources initiatives were underway to address national staff issues. On the other hand, it would be difficult to understand the gendered dimensions of work culture, systems, and everyday work-practice norms without soliciting the views of all those in the workplace environment. An uneasy compromise—which led to important findings about the impossibility of separating gender from other dimensions of systemic power, such as race and class—was reached. The project would concentrate on international staff and be a pilot project; subsequently, a project, using a comparable methodology and building on findings of the pilot study, would be carried out with the national staff. For the pilot project, however, a small sample of national staff working in research would be interviewed so that a more accurate picture of the current work environment and practices could emerge.

C. INQUIRY

The action research team developed an interview guide based on data from the set-up visit, our conceptual framework for understanding gendered dimensions of the workplace, and the findings of sociological research on career obstacles for women in science (Fox, 1991; Sheridan, 1998; Sonnert and Holton, 1996). In line with the dual-agenda approach, questions were designed to elicit not only the respondent's view of the driving forces in the CIMMYT work culture but also

a sense of the strategic issues facing the Center. The open-ended questions were organized into several critical themes: the organization of work and work practices; visible and invisible work; the use and management of time, and the interface of work- and personal-life responsibilities; organizational culture (norms, values, and accepted or privileged behaviors); criteria for success, performance-appraisal systems, rewards and sanctions; decision-making processes; communications systems; internal collaboration; processes of inclusion and exclusion; leadership and management styles; and vision and strategic directions.

The team spent 8 days on site for data collection. One-hour interviews were carried out with 58 staff members (16 women and 42 men) and 7 spouses (6 women and 1 man). In addition, 5 focus groups were held with work teams. The vast majority of interviewees participated actively and openly, and the interviews yielded very rich data and insights. The action research team holds these interviews to be an important intervention in the system, creating an opportunity for people to reflect on current conditions, to discuss gender as an organizational dynamic, and to envision possibilities for change. The input from spouses was very helpful for understanding tensions around work-family balance as well as the larger social context affecting CIMMYT and its workers.

D. ANALYSIS

Given the collaborative nature of the project, the action research team felt it was important during the initial visit to feed back to key groups within the CIMMYT community their first impressions emerging from the interviews. In doing so, the team had three objectives. They wanted to do a "reality check" to make sure that they were moving in the right direction in interpreting the data. As well, the team wanted to get the views of staff and managers on the key themes in order to enrich their understanding of the issues. And they wanted to seed some ideas as a stimulus for further reflection and, possibly, change, as they would not be returning for three months to provide the formal feedback.

The preliminary findings were discussed with the Gender Task Force, the National Staff Committee, the ad hoc committee of internationally recruited women, and the senior management team. Their response to the emerging themes and ideas was helpful, not only in deepening the team's understanding of the organization but also in furthering the goals of the intervention. In general, the groups felt that the themes had captured critical dilemmas within the CIMMYT work culture. The discussions gave people an opportunity to find new ways of looking at old and tenacious problems, and inspired some to commit around particular themes, and to resolve to do something immediately.

To ensure that as many staff members as possible were informed and included in this preparation phase, a short article summarizing the data-collection process, some preliminary observations, and plans for the next phase were included in CIMMYT's weekly newsletter. These channels of feeding back preliminary findings helped prepare the ground for the subsequent feedback of the team's more in-depth analysis.

Off-site the action research team prepared a more in-depth and interpretative analysis of the data. It is in this in-depth analysis that the salient features of this approach to gender equity become apparent. Although the data analysis process was intensely iterative, it can be thought of as having six steps:

- understanding the current work environment, that is, the mental models that drive behavior and the historical context in which these mental models have formed;
- identifying the organization's strategic objectives and the challenges it faces;
- surfacing "disconnects" between the current environment and future challenges;
- identifying the gender implications of these disconnects;
- selecting those mental models related to the disconnects with the strongest implications for gender equity and organizational effectiveness; and
- identifying leverage points related to the mental models that could have significant positive outcomes for both equity and effectiveness.

Once the data analysis was complete, the feedback presentation was designed in three major sections. The introduction, which we called "holding up the mirror," gave a general sense of the CIMMYT work culture. Its intention was to feed back to the organization—in its own words—themes and patterns emerging from the interviews: what it feels like to work in the organization; the norms of behavior expressed; and the challenges people feel the organization is facing.

The second section presented the dual-agenda analysis of the data. This included a description of those CIMMYT mental models that the team felt had the strongest implications for gender equity and organizational effectiveness. In order to give a balanced representation of the analysis, we highlighted the positive role these mental models were playing in the current environment as well as their unintended consequences for each element of the dual agenda. Therefore, each mental model was described behaviorally, using phrases, images and stories that suggested its positive and less positive aspects. Then the unintended consequences of the mental model for both equity and effectiveness were described.

The final section of the presentation focused on action, identifying possible leverage points for change and outlining the process by which the community would discuss, brainstorm, and determine next steps. A summary of the analysis is offered below as an illustration of the approach.

E. SUMMARY OF ANALYSIS AND FINDINGS

Holding up the Mirror

A central image in the "mirror" for CIMMYT was an organization that had inspired pride, commitment, and loyalty among its staff. Reflecting on the days of the Green Revolution, staff talked of sacrifice and selfless devotion, of the mission of the organization taking priority over everything else, including family and personal life. This legacy was an important part of CIMMYT's history and culture. Even newcomers could tell stories of notable scientists from this era—and it appeared that this history continued to exert a strong influence on the CIMMYT's work culture and values.

Somewhat at odds with this image, staff also talked of work norms and a work environment that often felt "uncoordinated," "fragmented," and "ad hoc." Staff spoke of an ever-expanding agenda: things were continuously added; but nothing was taken away, even in an environment of shrinking resources. Many also described CIMMYT as a place in which, despite an emphasis on teamwork, individuals were given considerable—and sometimes too much—autonomy and

independence. In this context, people often spoke of a desire to knit people and programs more closely, to reduce competition and "kingdom building," and to create systems that would foster collaboration.

While many staff were optimistic about CIMMYT's future—particularly about the renewed sense of mission and vitality brought by the new Director General—there was also a note of anxiety: things were moving too fast. People feared that the new directions at CIMMYT would simply add to existing work rather than refocus or strategically prioritize an already overcrowded agenda. It was clear from the interviews that the external environment affecting CIMMYT had changed dramatically in recent years. These included a significant decline in funding, an increase in the breadth and complexity of the research agenda of the CGIAR, and a changing model of research within the CGIAR system based on collaboration and partnering with national research organizations in developing countries and advanced research institutes, rather than the former model of autonomous initiatives.

Finally, a change in demographics—in terms of diversity in the workforce and workers' life situations—was affecting the pool of professionals from which CIMMYT recruited. Increased numbers of women in fields relevant to CIMMYT's research and an expanding supply of scientists from developing countries, as well as the growth in dual-career families had led to changes in family lifestyles around the world. CIMMYT would therefore increasingly have to work with a more diverse staff with different sets of skills, values, and work styles, not to mention personal responsibilities.

The action researchers argued that these forces had converged in recent years, creating a disconnect between what CIMMYT was trying to do and how it was organized to do it. This was making it difficult for CIMMYT to respond and adapt flexibly to the challenges it was facing.

Mental Models

Building on the concept of the dual agenda and the theme of CIMMYT in transition, the team identified four mental models that they believed had significant implications both for CIMMYT's ability to create a gender-equitable work environment and for its ability to reposition itself successfully in its new environment.

The first mental model—Reliance on a Unifying and Compelling Mission—was rooted in the legacy of CIMMYT's original mission. CIMMYT was created in response to a widely acknowledged global crisis in food production. In the early days, a powerful sense of urgency drove its work, and there was strong external validation of its importance. The problem was clear; the goal was feeding hungry people. The product—improved germplasm—was well defined and tangible. In recent years this unifying and compelling force in the CIMMYT community had become diffuse, embracing such abstract concepts as food security and sustainable agriculture. The problems it needed to address were more complex, the urgency tempered. The outside validation was more nuanced, and the impact was, in some respects, less immediate and tangible. Yet, CIMMYT continued to operate as if its unifying mission charted its course, integrated programs, framed decision-making, and motivated staff.

The absence of this unifying mission created tensions and missed opportunities. In the past, the mission had obviated the need for strategic focus, and had provided incentives and a framework

for collaboration. The more complex mission did not provide this framework; yet the mental model of a unifying mission that guided and integrated CIMMYT's work obscured the need for explicit mechanisms to determine priorities, and to support teamwork and collaboration.

This mental model also accounted for the way in which products were informally ranked in importance and status. While the value of germplasm—central to the mission of the past—remained deep in CIMMYT's culture, the value of other less visible products that are important for CIMMYT's current mission—improved methodologies, information, research support, biotechnology applications and improved production systems—was less clear. As a result, people who worked on these products often felt undervalued.

There were several gender and organizational effectiveness implications related to this mental model. Addressing the absence of a clearly articulated strategic focus could have significant implications for research quality and efficiency. Developing explicit institutional supports to encourage and reward collaborative efforts would help encourage the teamwork needed in complex research projects. As well, in a complex research environment in which all products were connected, it was important to recognize the value of all members of the CIMMYT team.

With respect to gender equity, a clearer strategic focus would help to address time- and agenda-overload problems, and would reduce the stress felt by many staff. These pressures had a particular bearing on staff—many women and some men—with competing responsibilities, such as families and child rearing. For these people, time was not infinitely expandable to serve an ever-growing research agenda. Second, a more collaborative work culture, which recognized the interdependence of work and products, would bestow greater value and visibility to the work of staff who provide intermediate products, such as the output of biotechnology, economics or pathology. This difference in valuing of products and types of work had gender implications because women tended to be clustered in these positions. In addition, many women spoke of wanting to work in a more collaborative environment, where the invisible work of providing support and enabling others would be recognized and rewarded.

The second mental model—Belief in Individual Achievement—had been built on beliefs about how good research is done, that fostering individual achievement was the best route to ground-breaking research. The assumption seemed to be that if CIMMYT hired the best and the brightest, gave them resources, autonomy, and latitude in defining the problems they wished to work on, they would produce and scientific breakthroughs would be attained. While some aspects of autonomy and independence were appreciated, it was a model of success that no longer fit CIMMYT's environment. While it made sense in a world that was resource rich and where the mission and product were clear and tangible, it made less sense in a resource-constrained world where problems were more complex and required diverse perspectives and collaboration.

This mental model affected the way work was done in several significant ways, and was the root of many concerns raised by staff. First, it had worked against CIMMYT sharpening its strategic focus and setting priorities, even though staff and managers knew that it was important to do so. In this model, decisions about narrowing the agenda devolved to the individual scientist. Yet, the tendency of scientists is to keep options open and pursue new opportunities because it is often not clear how breakthroughs will come.

This mental model also led to a devaluation of all forms of support—as if people could be divided into those who support and those who produce. Sets of skills and forms of output not directly associated with individual achievement tended to be undervalued. Those who contributed in terms of strengthening collaborations, problem-solving, facilitating effective work processes, developing new methodologies or managing tended to believe that their contributions were invisible. Many, at all levels, spoke of this invisibility, but those in administrative, non-scientific positions—which includes many national and female staff—particularly felt this.

A third unintended consequence of this mental model is that it fostered individualized treatment and undermined efforts to create transparent policies and practices. Staff were not well informed about the distribution of benefits across levels; policies varied by program and unit. Staff at all levels perceived that everything had to be negotiated individually. While this allowed for flexibility and meeting individual needs, it also had negative consequences for the organization's diverse staff. Those who were less well connected or who felt outside the mainstream perceived resource decisions to be ad hoc and idiosyncratic, based on favoritism rather than on systematic resource allocation based on the needs of CIMMYT as a whole.

In terms of organizational performance, this mental model was affecting CIMMYT's ability to respond to its changed mission and product. The environment fostered competition and favoritism and encouraged what some called "kingdom building." Instead, what was needed was interdependence and partnership in which everyone feels important, where skills of collaboration and teamwork are rewarded, and where all contributions and products are recognized and valued.

This mental model also had implications for gender equity. Because of gender segregation in the workforce, women tended to be over-represented in formal support positions. As well, the support skills needed to collaborate, facilitate and enable were devalued in the formal reward systems and structures, but highly valued in people's descriptions of workers they admired. Aligning the formal rewards with what was informally valued could raise the stakes on these skills. As many women felt these were the skills they brought to the workplace, revaluing these skills would have a real impact on how they felt about contributing to CIMMYT's effectiveness in this way. Finally, instituting more uniform and transparent policies, systems, and practices would help minimize bias and ensure equitable treatment of diverse staff.

The third mental model—Default to Hierarchy—related to the largely unquestioned assumption, rooted in CIMMYT's past success, that hierarchy was the best way to organize. Lines of authority and decision-making were vertical, there was a strong reliance on top-down information flow, and power and influence were concentrated at the top. Core management systems—budgeting, planning, and performance reviews—were vertically organized and relied on a hierarchical cascade. Lateral lines of authority and communication were almost invisible, even though many wished they were strengthened.

This structure apparently worked well when CIMMYT had a focused mission and clear product. However, people had begun to recognize that top-down management was no longer working well. This played out in two ways critical for organizational performance and gender equity—in norms about responsibility for problem-solving, and in norms about tapping local expertise.

The mental model affected beliefs about who "owns" problems and whose responsibility it is to fix them. When staff were asked in the interviews for suggestions about what could be done to make CIMMYT a more effective organization, most indicated that management should take

specific actions or decisions. Perhaps because they did not feel empowered or have time to make real change, staff rarely identified areas in which they could take responsibility to innovate or improve things at their own work level.

CIMMYT's vertical organizational structure also caused the frustration because of its downward information flow. This was the area in which the largest number of staff interviewed wanted to see change. Many expressed concern that management was making decisions without accessing local expertise. Scientists worried that strategic decisions on the research agenda were being made without sufficient input from the scientific community. Staff posted in other countries were frustrated that there was no way of giving input before decisions were made. Some staff characterized decision-making as ad hoc because they did not know the rationale for the decisions being made. Others felt that there was no way to give input up the hierarchy, either on strategic issues or on how the organization was run and staff was managed.

The team focused on this mental model because they believed that it had far-reaching implications for organizational performance and gender equity within CIMMYT. This implicit belief in "top down" as the best way to organize had created a strong sense that the people "in charge" should know more, or know better, than others. As a result, local expertise was not being accessed effectively, nor was CIMMYT taking full advantage of its staff's experience and skills.

A related concern was that because of interrupted and abbreviated flows of information up and down the hierarchy, decisions seemed to be made without a sound rationale or staff's interests or concerns in mind. This had made it difficult for managers to cultivate support for critical decisions. Moreover, hierarchical norms were breaking down outside CIMMYT, in the broader research system, where they were being replaced by norms of collaborating and partnering, and CIMMYT was resisting this trend.

The deeply entrenched hierarchical norms had gender implications as well. Because women were less well represented at higher levels of the hierarchy, their perspectives, skills, and experience were not being accessed effectively, and their contribution to CIMMYT's overall mission was not being realized. As a result, many women felt unconnected and undervalued. However, several staff members observed that the real issue of access to influence at CIMMYT was not only one of gender but of race, class and cultural diversity. The team believed that challenging hierarchical norms—creating ways to access the local expertise of <u>all</u> CIMMYT's workers—would enhance not only women's contribution, but that of all groups, because it would create formal opportunities for input and influence.

As the team listened to staff describe what was expected of them and what behaviors and skills were most admired at CIMMYT, a fourth mental mode—that of the ideal CIMMYT worker—emerged. This was an image strongly rooted in CIMMYT's past. The ideal worker was instilled with missionary zeal, willing to sacrifice everything and endure hardship to get the job done. It was a model that assumed CIMMYT workers did not have competing responsibilities in private life. Another aspect of the ideal worker concerned work style. In the past, CIMMYT had prided itself on being action-oriented and "hands on"—good scientists spent time in the field, close to the data.

Despite some very positive aspects, this value of commitment and dedication had some unintended consequences for staff's ability to integrate work and personal life and for work

structure and style. First, underlying this image of the ideal worker was the assumption that the most valuable worker is one who either has no personal life or who has someone to take care of it. From the interviews with spouses, it was clear that CIMMYT had been long subsidized by traditional families, and this situation was no longer viable. Because of demographic changes in the workforce and the increase in dual-career couples world wide, it was increasingly difficult to recruit staff with partners willing to forgo professional opportunities to take full responsibility for private life. Moreover, in many cultures, women's increasing role in the professional/public sphere was mirrored by men's increasing interest in parenting and contributing to the private sphere. Thus, it would be difficult to attract the best and brightest staff if changes were not made to allow people to integrate work and personal life more satisfactorily.

Second, this model privileged certain ways of working, and made it unlikely that new work practices would emerge. In fact, suggested changes to increase efficiency or cost effectiveness—such as delegating tasks to field personnel to reduce scientists travel time—were met with suspicion from some members of management and research staff, assuming that there was an unwillingness to make the sacrifice necessary to do things the old way.

A third issue had to do with the skills needed to succeed in the new environment of collaboration and partnership. The action researchers noted that there was evidence in the business literature that workers who focus on work and family—particularly caring for others—brought relational skills to the workplace (Bailyn, et al., 1997; Fletcher, 1998; Johannsson, 1995) that were important in environments that valued collaboration, cross-functional communication, and participatory decision-making. In CIMMYT, there was a strong call for these skills and a recognition of their value. The research team argued that, in terms of organizational effectiveness, it was in CIMMYT's best interest to organize work in ways that allowed people to be involved in both work and family in order to develop these collaborative, enabling skills.

The image of the ideal worker as someone with a traditional family and stay-at-home spouse had clear gender equity implications. First, it privileges traditional families, while women working at CIMMYT were likely to be single or in dual-earner families. Second, it is still rare to find husbands whose primary role is to care for the family. Consequently, women were at a disadvantage in this respect as well.

Leverage Points for Change

Based on the analysis, several leverage points for change were identified that could have a significant positive effect both on effectiveness and gender equity. These included initiatives that would sharpen CIMMYT's strategic focus and reduce the overcrowded agenda; foster consultation and communication and reduce the system's reliance on overly hierarchical norms of communication and decision-making; and help people integrate work and personal life more satisfactorily.

IV. FEEDBACK AND CHANGE INITIATIVES

A. FEEDBACK PROCESS

The feedback to the CIMMYT community was designed to encourage dialogue and broad participation by CIMMYT staff in interpreting the analysis and generating ideas for change interventions. The process was developed collaboratively with the Gender Task Force and the Director General. It had seven steps which are discussed briefly.

Before the action research team finalized its analysis, they consulted with the Director General and a Co-Chair of the Gender Task Force on the utility and relevance of the analysis as well as on how to present the themes to the larger CIMMYT community. This preliminary consultation helped to keep the Director General and the Gender Task Force engaged with and confident about the feedback process. Key decisions, such as having the Gender Task Force members co-facilitate the focus groups, were made together. Before the feedback visit, the Director General circulated a memo to all staff, encouraging them to participate in the week-long events and reiterating his commitment to the process.

Once on site, the analysis was previewed with the Senior Management Team and the Gender Task Force before it was presented it to the CIMMYT community. The purpose was twofold. First, it gave these groups an opportunity to grapple with the analysis, ask detailed questions, and reflect on implications before co-facilitating staff discussion groups. Second, it gave the research team an opportunity to incorporate valuable input about aspects of the analysis that were unclear or phrased in a way that would make it difficult for some staff to hear. The team now sees this as a critical part of the collaborative method, and believes that no general feedback session should be held until key positional and informal leaders have had a chance to work with the analysis in a setting that fosters free exchange and open dialogue.

The following day, the team presented its analysis in a plenary session open to all staff and spouses. This, and subsequent plenary sessions, were videotaped for staff out-posted in other countries. Simultaneous Spanish translation was provided for the benefit of national staff. However, in what proved to be a telling oversight, national staff was not informed of the session until the day before the event. As a result, the session was well attended by international staff, but only by a few national staff.

The Director General played an extremely important role in the feedback session. He linked the work on gender to his larger change agenda, underscoring the strategic importance of the work. His visible support gave the work credibility and legitimacy, countered staff's concerns that nothing tangible would result from this effort, and created a safe environment, which led to open and creative discussions in the working groups that followed.

During the general discussion at the end of the presentation, an informal leader of national staff forcefully asserted his view that the analysis had missed an important mental model underlying the CIMMYT work culture—that national staff were different from and inferior to international staff and should be treated differently. There was no official response to his comment, either by management or the research team. Nonetheless, the nonverbal response of those attending the

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session indicated general agreement. In hindsight, the implications of this critical event were felt throughout the project.

Small focus groups to discuss the analysis were held immediately after the plenary. These groups were organized by work units and facilitated by members of the Gender Task Force, so staff could respond to the analysis, discuss its applicability, and brainstorm possible changes that could be made at the Program or Unit level to address the issues. About 80 staff, primarily international, participated. The discussion groups were effective in getting staff to react to the mental models and think through their consequences for work practice and behaviors.

Working groups were then held during the two days following the plenary to brainstorm pilot projects for organizational change experiments that would meet the dual agenda. They were organized thematically, by the leverage points for change identified in the analysis, and were co-facilitated by the research team and members of the Gender Task Force.

Given the issue of the different treatment of national and international staff, an additional group was created to explore this issue. The themes included: sharpening CIMMYT's strategic focus; strengthening communication and consultation within CIMMYT; enhancing recognition of CIMMYT's diverse products/outputs; strengthening collaboration; balancing responsibilities and satisfaction of work and personal life; promoting a greater sense of equity and fairness in policies and practices; reducing staff's overcrowded agendas and time pressures; and narrowing the gap between international and national staff. A working group of spouses was also convened to explore the work/family leverage point from the family perspective. The connections between these leverage points and the mental models is summarized in Table 1.

The purpose of the groups was to develop ideas for concrete action steps and/or organizational experiments that would challenge and interrupt the identified mental models and open up new ways of working that would enhance both gender equity and organizational performance. Action steps were defined as concrete changes that could be introduced quickly with limited resource implications. Organizational experiments were defined as more significant changes that would be piloted on a small scale, monitored and assessed, adapted, and then, if effective, diffused more widely.

The brainstorming unleashed tremendous energy and creativity. The underlying cynicism that nothing would change was dissipated and staff worked together to generate some very innovative proposals. The expectation was that these discussions would catalyze spontaneous innovations by individuals and work groups that would complement the more formal change efforts to be carried out at the organizational level. The working groups generated proposals for 21 action steps and 36 organizational experiments.

A second plenary session, open to all staff and spouses, was held at which the working groups, including that of spouses, presented their proposals for changes to the CIMMYT community. Attendance and interest were strong, with about 100 people participating, including, this time, significant representation from national staff.

TABLE 1:

Summary of Mental Models, Their Unintended Consequences, and Organizational Experiments

Mental Model	Unintended Consequences for ...	Experiments
1. Reliance on a Unifying and Compelling Mission	Developing a strategic focus	Strengthening staff input into mega-project design
	Invisibility of some products	360° performance appraisal
	Mechanisms for collaboration	Strengthening teams and collaborative work practice
2. Belief in Individual Achievement	Overcrowded agenda	Division of labor experiment
	Devaluing of collaboration and support	360° performance appraisal/Strengthening teams and collaborative work practice/Division of labor
	Individualized treatment	Closing the gap between national and international staff
3. Default to Hierarchy	Norms about problem solving	Strengthening management-staff communications/360° performance appraisal
	Failure to tap local expertise	Strengthening management-staff communications/Strengthening teams and collaborative work practice/Division of labor
4. Ideal CIMMYT Worker	Balancing work and personal life responsibilities	Division of labor
	Work style and structure	Division of labor
5. Differentiating between IRS and NRS	[not included in original analysis]	Narrowing the gap between national and international staff/Division of labor/360° performance appraisal

Brief descriptions of the experiments and action steps had been prepared and were posted by theme on the walls of the auditorium. Each person at the meeting was invited to indicate the four action steps or experiments of highest personal interest. The seven experiments that received the most staff interest also met the criteria of advancing the dual agenda.

This session, which had not been part of the original plan but had been suggested by the Gender Task Force, proved very effective. Not only did it cement staff's ownership of the ideas for change, but it also ensured that all staff shared the same information about the outcomes of the process. It also helped to distribute responsibility for implementation more broadly among staff,

challenging the norm of default to hierarchy, and afforded an opportunity for informal leaders to emerge.

Interested staff were then invited to volunteer for a Change Catalyst Committee that the Director General formed to ensure that the ideas generated were moved forward and translated into real change.

The process was completed by a wrap-up session with the Director General, the Senior Management Team, the Gender Task Force, and the newly created Change Catalyst Committee (CCC) to review the feedback process, elicit reactions, and clarify roles and responsibilities for follow-up action. Participants were generally very positive about the process and the quality of the ideas generated. The principal concern was that the change process would be overwhelmed by other priorities, and the excitement would dissipate, leaving people discouraged. The action research team also met informally with women professionals to get their reactions to the analysis and the output of the working groups. The goal was to begin to build an internal constituency among the main beneficiaries of this effort, one that understood the dual agenda and would be motivated to keep the gender dimension of the initiatives in place as the action steps and experiments were implemented.

Staff were cynical about the feedback process before it began, as many previous change efforts had not seemed to yield results. Their cynicism also related to the gender focus, the perception by some that the project had exceeded its mandate, the three months between inquiry and feedback, and the fact that many of the issues raised appeared to be "old news."

However, the concept of mental models proved a powerful antidote to this frame of mind. In exploring mental models it became clear that the forces driving the old problems were deeply rooted in tacit assumptions about work, and that there was a link between many of these old problems and gender. Momentum began to build after the presentation to all staff. The tide changed with the working groups organized by programs and units, in which people talked about the implications of the findings in their own area. By the end of the process, most staff were energized, enthusiastic and optimistic about the possibilities for constructive change.

B. ORGANIZATIONAL EXPERIMENTS

During the feedback week, the Change Catalyst Committee was formed, with the responsibility of moving the ideas generated by the focus groups into action. Staff who were interested in working on implementing change were asked to volunteer to serve on the Committee. Some members of the Gender Task Force signed on to the CCC.

Its initial task was to screen the proposals for action steps and experiments, develop an agenda for change, and take the steps necessary to refine the experiments and to engage groups in implementing them. Five criteria were used to select experiments: the degree to which the experiment addressed the dual agenda and underlying mental models; the degree of interest and enthusiasm of staff as indicated by their choices in the final plenary session; the potential number of people affected; the likelihood of success, including the presence of a champion to see the experiment through; and considerations of time, money, and human resources.

The CCC eventually recommended six organizational experiments. In five of the six cases, at least 40% of the staff members who chose these as priorities during the feedback session were female.

Experiment 1: Building staff involvement into the design and implementation of the new project structure

At the time of the feedback, CIMMYT was instituting a new system of mega-projects for organizing research and related program activities, as part of its new five-year plan. Mega-projects were to overlay the current system to encourage cross-program collaboration and to sharpen the organization's strategic focus. This proposed re-organization into projects was a significant departure from traditional organizing by programs. The shift to mega-projects came up frequently in the interviews; there were many questions and concerns about how it would work and affect research leadership, current reporting relationships, and resource allocation.

The experiment consisted of developing a new model of staff participation on the task force designing the new mega-project system and in decisions regarding both the content of the mega-projects and how they would be implemented. The experiment was designed to "tap local expertise" and challenge traditional practices based on the mental model of "default to hierarchy" (see Table 1). The experiment ensured that, rather than including only senior managers in the planning process, men and women of diverse backgrounds and from different levels in the organization were involved in the task force as well. Moreover, broad consultation and staff views and input were included throughout the process.

This was a new way of working within CIMMYT and the process did result in increased participation by women scientists on the task force and in broader involvement of staff in the design of the mega-project system. In fact, the model was so appreciated that it was used again to gather input about the staffing and leadership of the projects themselves. While this experiment was bounded in time, it modeled new ways of working and consulting within CIMMYT and was considered a success by staff and management. Many women felt that it involved them in the planning process in ways that had never occurred in the past. Equally important, the product of this process—CIMMYT's five-year plan based on the mega-projects—has been praised for its high quality both within CIMMYT and by an external review team of eminent scientists and research managers (CGIAR, 1998).

Experiment 2: Strengthening communications between the senior management team and staff

This experiment was also designed to challenge the mental model of default to hierarchy. It was intended to address limited communication up and down the hierarchy, concentration of decision-making and authority at the top, and limited use of "local expertise" on critical issues (see Table 1).

The experiment had several components. First it entailed circulating in advance the agenda for the regular meeting of the senior management team, called the Management Advisory Committee (MAC), so staff would know what topics the MAC was addressing and could bring issues or information to the attention of their supervisors before the meeting. It also reinstated the norm of Program Directors holding regular meetings with staff to report on the outcomes of MAC meetings and to solicit feedback. In addition, the proposal added "splash back" as a

standing item on the MAC agenda. This gave managers a routine opportunity to bring staff's concerns to the attention of the senior team.

The experiment had important implications for both organizational effectiveness and gender equity. Poor communication meant that CIMMYT was not making full use of the diversity of staff expertise and experience in problem-solving and strategic decision-making. Second, top-down decision-making without an accompanying rationale was making it difficult for staff to support, share responsibility and act on management's decisions.

With respect to gender equity, while many men voiced concerns about communication, the negative consequences of the hierarchical norms were greater for women, who are not well represented at the upper levels. The concentration of influence and decision-making at the top meant that women's perspectives, skills, and experience were not being tapped effectively; and their potential contribution was not being fully realized. As a result, many women felt like outsiders, which is costly for both women and an organization. The experiment also had equity implications beyond gender, as many other staff, especially national staff, had expressed a similar frustration with the lack of information and inability to influence decisions.

The results of the experiment are quite dramatic. A baseline and follow-up survey one year later showed that staff perceived a significant improvement in the quality of communications (see Annex Table A.1). Of 11 indicators of quality of communications, staff had ranked only 2 average or above in the base line survey compared to 5 in the follow-up survey. The results were even more striking for international staff. In the baseline survey, they ranked 6 indicators as average or above as compared to 10 in the follow-up survey. Improvements were greatest in terms of the quality and frequency of information flowing from the senior management team to staff, but feedback channels were also perceived to have been strengthened.

The data suggest that this positive outcome resulted from increased efforts on the part of the senior management team to communicate more regularly, and on the part of staff to keep informed and involved in raising issues and concerns. These changes suggest a significant decline in the extent to which communication practices are shaped by the mental model of "default to hierarchy." Nonetheless, staff continue to perceive that further efforts are needed to encourage senior managers to draw systematically on staff expertise in problem-solving and decision-making. Further efforts are also needed to strengthen communications between senior management and national staff.

The survey results indicate that the introduced changes have fostered a more gender-equitable work environment. Both men and women reported significant improvements in communications, but women perceived a more dramatic change. Of the 11 indicators of quality of communications, internationally-recruited women perceived a statistically significant improvement in 7; while men saw a significant improvement in 4 (see Annex Table A.2.). Most importantly, women perceived a notable and positive change in the extent to which their input was sought and the degree of comfort they felt in raising issues with their supervisors for consideration by the senior management team.

This suggests that the experiment has served to create a more inclusive work environment and expanded opportunities for women to contribute more fully to shaping CIMMYT's research and its work environment. At the same time, the message is clear that the changes in communication

practices have not benefited women alone. They have also benefited men and, arguably, CIMMYT's effectiveness as an organization.

Experiment 3: 360° performance appraisal systems

A 360°, or multi-source performance appraisal system, supplements managers' assessment of staff performance with that of peers and direct reports. The goal of this experiment was to interrupt the norm of default to hierarchy by giving people an opportunity to provide input on managers' and supervisors' performance. It would also address the vacuum created by reliance on a unifying mission, by providing greater visibility for intermediate products and inputs. As well, by gathering input from co-workers and peers, it could address the norm of individual achievement by explicitly recognizing and valuing the invisible work of support functions and collaboration (see Table 1).

Although seemingly gender neutral, this experiment had significant potential to affect gender equity. Research indicates that multi-source performance assessment is often more gender equitable than a traditional single-source system (Edwards and Ewen, 1996; Edwards, et al., 1995). Not only does it provide a way of lessening managerial bias against or discomfort with providing feedback to women, but it also makes visible many of the work functions that women routinely provide, both formally and informally, such as facilitation, problem prevention, support, and coordination.

While the Director General and many staff, especially women, expressed a high level of interest in experimenting with multi-source assessment both in the interviews and during the feedback meetings, it was difficult to get this experiment launched. Managers and some staff were cautious about a new approach to performance appraisal. Moreover, the approach directly challenged deeply held assumptions and values about hierarchy and authority. To respond to these concerns, the action research team commissioned a paper summarizing the research literature on multi-source assessment (Gormley and Spink, 1997), gave a seminar to management and staff on the approach, and helped CIMMYT to select a method appropriate to their needs and organizational culture.

The Human Resources Management Office took over the lead in implementing the experiment. They hired a consultant to work with them to develop and evaluate a multi-source assessment method in four pilot units: a large research project team, two program-support units (one comprised primarily of Mexican staff), and the senior management team. The team felt it was important for senior managers to experience the process directly so that they could make an informed decision on how to use multi-source assessment on a larger scale throughout CIMMYT.

CIMMYT elected to experiment with an approach that was quantitative and focused on skills and behaviors considered essential for high quality work performance (Spink, et al., 1999). A consultant provided support to the pilot groups in defining their assessment criteria and in giving and interpreting feedback. Members of the action research team remained involved throughout to ensure that the gender equity aspects, such as attention to invisible work, did not get lost.

After the completion of the pilots, staff's perceptions were captured through focus groups and an assessment survey including 78 respondents. Staff's response was very positive (see Annex Table B). Staff appreciated the objectivity of the feedback, its richness and detail, the fact that

invisible work skills were highlighted, and the simplicity of the instrument. They felt the feedback was more fair and frank than the supervisor-only approach and that it was a more useful assessment of performance than focusing on work outputs alone. As a result of the pilot project, staff recommended that CIMMYT adopt 360^0 feedback as an integral part of the performance appraisal system.

There was an interesting difference in reactions of male and female subjects (people who received feedback) responding to the assessment survey. As had been expected, women responded more favorably than men about the degree to which the objectives of the experiment with multi-source assessment were met and about the quality and utility of information received (Spink, et al., 1999). While both groups reacted positively, women indicated more than men that they found the 360^0 feedback to offer a more useful assessment of performance than that provided by focusing on work outputs alone. They also agreed more strongly than men that the feedback from peers and direct reports supplements that received by their supervisor in useful ways; and offers greater potential for fairness than the supervisor-only approach to performance appraisal. Women also agreed more strongly that the multi-source assessment provided information that motivated them to improve their work performance (see Annex Table B).

Experiment 4: Strengthening teams and collaborative work practice

This experiment was aimed at investing in training and coaching for several pilot project teams to strengthen team performance and collaborative work practice. The experiment responded to staff's desire for a more explicit mechanism for teamwork; for more formal support for collaborative work practice; and for more recognition of team-based, rather than individual-based, models of achievement. The experiment also offered the potential to interrupt, through changes in work practice, assumptions about hierarchy and individual achievement (see Table 1).

This experiment had the potential to strengthen organizational performance by providing the general skills needed to help CIMMYT move to the more collaborative mega-project system. It also had the potential to affect gender equity by creating more explicit mechanisms to encourage teamwork and to recognize collaborative work practice and the products of collaboration, as well as to more effectively tap local expertise.

After a more thorough assessment of training needs, CIMMYT has undertaken a major team-strengthening project. Training began with the newly appointed project leaders. The focus was on concepts and skills of leading and managing teams, and explored non-hierarchical models of leadership. Training has also been given to two pilot-project teams (one based at headquarters, one overseas). These courses focused on skill development, but have also helped the teams to establish norms and agreements for working together as the foundation for effective teamwork.

The training provided to project coordinators and pilot project teams has been very well received, and CIMMYT is exploring ways to extend it to the remaining project teams. Staff trained in pilot teams have carried their skills into interactions with other teams on which they serve, and have sparked interest in training among their colleagues. As a consequence, CIMMYT has committed to providing team training to all members of project teams during the next year. An assessment of this experiment will be carried out in 1999.

Experiment 5: Redefining the division of labor between professional and support staff

This experiment was intended to challenge the mental model of the ideal worker and core assumptions of work, loyalty, and commitment by redefining the roles and responsibilities of scientists and field workers to allow for more delegation. Initially, the experiment was designed to challenge norms of excessive travel: willingness to travel was seen as an informal indicator of good scientific inquiry but it made the integration of work and personal life particularly difficult for scientists. Many, especially women with families, found the burden of travel untenable. Organizational performance would be improved by using the talents of the team more effectively, decreasing time pressure on scientists, and allowing more time for scientific reflection and writing.

However, as the experiment moved through the design phase it became loaded with many other goals, particularly that of increasing equity between international and national staff. The final objectives for the experiment were defined as improving the productivity and efficiency of CIMMYT's work teams (at one stage the experiment was referred to as the "working smarter" experiment); alleviating the overcrowded agendas of international staff; and opening opportunities for career growth for national staff.

The experiment addressed the unintended consequences of three mental models: values regarding the ideal CIMMYT worker, the belief in individual achievement, and default to hierarchy (see Table 1). For the researchers, the experiment would attempt to revalue efficiency—time use and priorities (being able to give things up)—and the devaluing of long work hours and the overriding dedication to work over personal life. The change in practice could give more value to the technicians' professional contributions, recognize explicitly the value of their support role, and involve them more as partners in the work process.

The CCC was responsible for designing this experiment and identifying work groups who wanted to be involved in the pilots. Both the action research team and the CCC invested considerable time and energy in developing the experiment and in cultivating interest among the programs. The proposal for the pilot was approved by the senior management team and had the strong support of the Director General. Yet, after two years, the experiment has still not been implemented.

Several factors have contributed to the delay. It took several months for members of the CCC to meet with each member of the senior management team, to explain the experiment, identify issues and concerns, and seek support for the activity. As well, two sticking points emerged related to national staff's participation in the experiment: whether they would receive a cash bonus for their extra effort, and whether participation would lead to an increase in job-category status following the experiment. (These concerns related to the mental models of not valuing support work and the gap between international and national staff.) It was finally decided that no incentive to national staff would be offered during the experiment beyond the provision of training as required, and that participants would automatically be considered for a salary-grade advance once the experiment was concluded.

A third complication arose because the team identified for the experiment was initially too busy in seasonal research activities to undertake it. When the intense period of work subsided, there was a change of Program Director, and the experiment was postponed. A further delay was due to the difficulty in finding a local consultant with not only the cross-cultural facilitation skills

and ability to work within the dual-agenda framework, but also the ability to liaise with the US-based action research team. Recently, at the initiative of the senior management team, CIMMYT renewed its commitment to exploring means to reduce time pressures.

It is not surprising that this experiment has been slow to implement. It has been difficult to develop a constituency for it, as it challenges some of the most deeply held assumptions about workers who are valued and work styles that lead to success. It involves changes in work practices and behaviors, rather than in management systems, depending as it does on a work group taking the initiative, rather than on the senior management team or the CCC. It addresses issues of equity in class and cultural backgrounds of international and national staff as well as gender equity. Finally, the value of the experiment in providing an opportunity to better integrate work and personal life was continually questioned. While the action research team and the CCC have argued that addressing work-personal life balance can lead to more efficient and productive work (Bailyn, et al., 1997), only a handful of staff have been willing to entertain this notion. The mental model of the ideal worker remains so powerful that it precludes the discussion of other options.

Experiment 6: Narrowing the gap between international and national staff

This proposal was to set up a task force of both national and international staff, to discuss gaps between the two groups, particularly differences in benefits packages. The goal was to foster greater understanding, fairness and equity. The experiment had two components: first, to develop new ways of working on potentially contentious issues by bringing together various interest groups to negotiate and develop solutions; second, to narrow the gap between the two groups.

This experiment, in its original form, also never came to fruition. A sub-committee of the CCC worked hard to design the experiment, but it became very difficult for the group to keep focused on the process of addressing contentious issues. The strong feelings about these issues led the group to make substantive recommendations for policy changes and press for action. In addition, differences among members of the CCC regarding the role of the committee in this area generated considerable discomfort and eventually led to a breakdown in moving the experiment forward. Once it became clear that the results were viewed as more important than experimenting with new processes, the CCC recommended that the issues be passed to the National and International Staff Committees. The work of the National Staff Committee has resulted in the implementation of several important recommendations to reduce the gap in benefits between the two groups.

C. ACTION STEPS

Suggestions for 23 action steps were generated during the feedback session. These included creating photo boards by department, with people's names and titles labeled to make more visible those in invisible support roles; agreeing not to hold official meetings on weekends; organizing more social events for the community; and developing mechanisms to strengthen recognition of staff achievements. While no comprehensive review has taken place, many of the ideas generated have been instituted. The accomplishments of support units, such as finance and human resources, are now recognized in the weekly newsletter, as are outstanding accomplishments of individuals from all parts of the organization. Some units have instituted

new mechanisms, such as electronic white boards, to coordinate their work and improve collaboration and communications.

D. ROLE OF THE CHANGE CATALYST COMMITTEE

As noted previously, the Change Catalyst Committee was formed by the Director General during the feedback process. The intention was to have a group of staff to work on the change initiatives. This task was assigned to the new committee, rather than the standing Gender Task Force, in order to involve staff interested in promoting change (being "seed carriers") and to give greater visibility to the organizational performance aspect of the dual agenda. The Committee was composed of people who volunteered during the feedback week. It originally had 17 members, representing a diverse group of men and women and national and international staff.

The Director General appointed a senior manager to chair the Committee, providing a valuable link between the Committee and the senior management team. Unfortunately, the senior manager, while interested in the issue, had not been at Headquarters during the feedback week. He had not, therefore, experienced the excitement and energy generated as staff took on the dual agenda and began to develop proposals.

An ambitious terms of reference was developed for the CCC:

> *to support the design, implementation, evaluation, and mainstreaming of the action steps and experiments emerging from the Gender in the Workplace [analysis] and related organizational change processes. The CCC will have full autonomy to take decisions regarding experimentation around organizational change, and the authority to implement those decisions, except in cases where the expenditure of financial resources is required, in which case the consent of the [senior management team] will be sought.* (CIMMYT, 1996)

It was agreed that the CCC would screen and prioritize the experiments and develop a work plan for their implementation; work with CIMMYT staff to design and implement the experiments; support the groups doing the experiments; act as a "learning forum" in which to reflect on the process of organizational change and to assess whether the experiments were bringing about positive changes in organizational performance and creating a work environment that fostered gender equity; monitor the experiments and recommend those experiments that should be mainstreamed; and communicate with the senior management team and the larger CIMMYT community regarding the organizational-change process.

The CCC began their work with a facilitated retreat to clarify their goals, objectives, terms of reference, and modes of working together. Initially, there was a lot of excitement and energy, as this group really felt empowered to enact change. They met regularly in the beginning, set priorities among the experiments, and formed subcommittees to develop plans for each proposed experiment. The action research team provided a set of guidelines for screening proposals to help ensure that the experiments responded to the dual agenda and reduced the unintended negative consequences of the mental models.

The CCC had clear success in influencing the consultation process around the mega-projects and in getting the management-staff communications experiment up and running. The other experiments, which involved more substantive changes, proved more difficult. The scope and

complexity of the proposed change raised questions, both among the members of the CCC and among other staff and managers, about the authority of the CCC and its appropriateness to lead change in areas many considered to be the domain of the management team.

As the workload became heavier and the change agenda more daunting and cumbersome, the members began to question their status as volunteers. After one year, they requested that the time invested in the CCC be formally recognized in their work plans and performance appraisals. Their proposal was not accepted by several senior managers, who argued that staff time should not be siphoned off for work that managers were paid to do. This discussion led to a re-evaluation of the role of the CCC.

Eventually, the senior management team decided to recast the CCC as a catalytic and monitoring group, and to take on more responsibility for implementation themselves. In consultation with the action research team, the senior management team decided to focus on three key leverage points for advancing the dual agenda: team-strengthening, multi-source performance appraisal, and division of labor. Members of the management team were assigned the responsibility of implementing the first two experiments; the CCC was asked to continue to work on the third. When the division of labor experiment stalled, the CCC's role began to diminish. Eventually the CCC was disbanded and the locus for change now resides with the senior management team. The Co-Chair of the CCC, who was not on the senior management team, was given explicit responsibility for keeping attention on the goal of gender equity within CIMMYT and for monitoring progress.

V. MONITORING CHANGE

Monitoring the impact of the interventions has been an integral part of the action research project. To date, it has been largely qualitative, focusing on staff and managers' perceptions of impact.

A. TAKING STOCK--ONE YEAR LATER

One year after the project had begun, the action research team returned to CIMMYT to take stock of progress. The team, which included one new member, interviewed approximately 30 staff and managers, most of whom had been interviewed in the initial inquiry process. Again, interviewees were selected to reflect diversity of gender, cultural background, occupational position, and program affiliation; 80% of the interviewees were internationally-recruited staff; 20% were nationally-recruited staff.

In addition to their general perceptions of change, interviewees were asked whether they thought that the situation of women within CIMMYT had improved. The team synthesized the key findings and fed these back to the senior management team and then to the Change Catalyst Committee. Subsequently, a report was circulated to all staff and a summary published in the weekly newsletter.

The action research team concluded that solid, but modest, progress was being made towards advancing the dual agenda. A significant majority of the women felt that the work environment was more hospitable, making it easier for women as well as men to succeed and contribute. Equally important, men were not experiencing negative repercussions from the efforts aimed at strengthening gender equity. The team was also encouraged to learn that the broad, inclusive feedback process had catalyzed many changes in work practices and behaviors not directly related to specific organizational change experiments.

With respect to the priorities established the previous year, progress was perceived as variable. Staff felt that significant progress had been made in communication and consultation. Information was flowing more regularly up and down the hierarchy, and staff were being consulted on most major decisions. They also indicated that significant progress was being made in increasing equity and fairness, particularly with respect to the perceived gap between national and international staff: people cited several achievements of the national staff committee and the Human Resources Department. More generally, many people—particularly women and national staff—commented that the atmosphere was much more open, and that they could now raise issues without fear of retribution.

It appeared that modest progress was being made with respect to collaboration. (The team-strengthening project had not yet started.) The process of staff participation in the new mega-projects was viewed very positively, as were the mega-projects themselves. People felt that staff was taking more initiative to develop collaborative activities, but that enhanced skills and more formal arrangements were still needed. Some staff observed that the focus on collaborative and non-hierarchical ways of working had stimulated CIMMYT managers and staff to work in a

more equitable manner in their partnerships with national agricultural research systems. As noted above, this was substantiated by the 1998 External Review team.

It was felt that modest progress had been made in recognizing diverse products/outputs. Although awareness had increased and the concept of invisible work was now recognized, it was felt that intermediate products, such as new methods and techniques, were still not valued as highly as final products, such as germplasm. (At this time, the experiment with 360^0 feedback had not begun.)

The least amount of progress was perceived to have been made on issues of time. People remained concerned about issues of strategic focus and the overcrowded agenda, noting that it was still very difficult to prioritize their responsibilities. With respect to work/personal life integration, they did not feel any progress had been made. On the contrary, there was a sense that stress and time pressures had actually increased during the past year because of CIMMYT's slower than expected financial recovery. The concept of the ideal CIMMYT worker as someone who is hands on and ready to sacrifice everything for the job was still driving expectations and behaviors.

On the whole, however, the results of the stock-taking exercise were promising. Considerable change had occurred after one year, and continuing change was expected with the launching of the projects on 360^0 performance assessment and team-strengthening. The central concerns were the aggravated time shortage and that the need to improve work/personal life integration seemed to have fallen by the wayside. The team's assessment was that the factors creating the time famine at CIMMYT run deep in its organizational culture and were being aggravated by the financial pressures. Staff and managers seemed to have accepted the acute time pressures as a way of life and were resistant to thinking that addressing these issues might result in creative solutions for reducing time pressures.

B. TAKING STOCK--TWO YEARS LATER

Two years after the project launch, a second stock-taking was carried out as part of a CGIAR-wide comparative analysis of progress on gender staffing. A detailed questionnaire on indicators of gender equity in the workplace was distributed to the senior management team, the national staff committee, all internationally-recruited female staff, and selected internationally-recruited male staff. Forty replies were received, representing all members of the first three focus groups. (Due to short lead time, only one response was received from an internationally recruited male staff member.) Focus groups were held with the first three groups to feed back the survey data and elicit further information and interpretation of the data.

The general finding was that while steady progress had continued to be made, more work remained. It was clear to many respondents that as successes are achieved, expectations are raised; therefore, the organization must strive for even greater improvement. As one female scientist put it:

> *There has been tremendous improvement in formal systems and in leadership and management [commitment]. The corpus of CIMMYT, however, and the informal practices and knowledge base will take longer to change. This is exacerbated by the pressures we now face to do research and get money, plus try to cope with*

organizational change. The number of women across teams and levels is still very small.

In general, management and the international female staff felt that good progress had been made in improving the transparency and gender neutrality of formal systems of recruitment, position classification, and advancement. This feedback underscored the value to staff of a major human-resources effort to restructure and clarify formal practices. As they work under a separate position-classification structure, however, national staff were less satisfied with the fairness of the system, and were still concerned about the different treatment of international and national staff.

As suggested by the data on the staff-management communications experiment, all respondents felt that there was improved communication throughout the organization and that management was working hard to improve the overall workplace environment. Again, however, national staff felt they had benefited less from this initiative than had international staff. It was also interesting to note that the senior management team consistently rated higher the extent to which CIMMYT met the key indicators of gender equity than did either the internationally-recruited women or the national staff committee.

The most positive feedback from the international women dealt with the good quality of interaction in the recent planning meetings of the new mega-project teams. Several of the women, especially the more junior women, noted that these meetings had offered an opportunity for open dialogue on scientific issues with colleagues from other disciplines, programs and postings. They observed that the new team structure, at its best, seemed to be breaking down hierarchy and favoring genuine collaboration and "tapping of local expertise." This was seen as a very important cultural change fostering gender equity.

However, several areas were identified as needing continued attention. Foremost among them were increasing the number of women in middle- and upper-management positions and distributing them better across functions; and strengthening management skills in such areas as conducting unbiased recruitment interviews and performance assessments and managing diverse staff.

As in the previous year, the issue of time pressures and the ability to balance responsibilities in work and personal life remained an overriding concern. Discussion with the senior management team on this point during the focus group was interesting. On several previous occasions, the overcrowded agenda had been dismissed as simply being "the way of life at CIMMYT" and as a problem of individuals, not of the system. When the survey data was mirrored back to the senior management team, indicating the widely held view that this was a systemic problem, the tone of the discussion changed. When it was suggested that it would be useful for staff to brainstorm ideas to counter the time pressure, management seemed almost relieved—as if the default-to-hierarchy reflex had been overcome and a shared approach to problem-solving became possible. There is now new momentum and commitment in CIMMYT to tackle this tenacious problem.

VI. REFLECTIONS AND LESSONS LEARNED

The CIMMYT initiative on gender and organizational change is still very much a work-in-progress. After only two and one-half years, much of the change is nascent and gains are fragile. Nevertheless, it has generated a wealth of lessons and insights both in terms of how organizations are gendered and how gendered norms, structures, and process are sustained and reproduced, and in terms of approaches and methods for organizational change aimed at gender equity. Key lessons for practitioners that we, as action researchers and as internal change agents, have drawn from this case are summarized below.

A. GENDER IN ORGANIZATIONS

The Dual Agenda and Holding on to Gender

Considerable emphasis was given in the CIMMYT change process to the dual agenda. A major improvement in the methodology was the explicit connections drawn between the mental models and their unintended consequences for both gender equity and organizational performance. Yet, our experience, as in similar efforts, suggests that it is very difficult for staff and managers to hold on to the connection (Ely and Meyerson, forthcoming). Given their experience of these things as adversarial or zero sum, it is counter-intuitive. Thus, it is reasonable to assume that organizational effectiveness concerns will tend to eclipse gender equity concerns. Using the dual-agenda approach appears to be a double-edged sword. It creates a broad constituency for working on organizational change by removing gender from an equity frame, which many interpret as women gaining at the expense of men. Placing it in an effectiveness and efficiency frame legitimates it in the organization. Indeed, it is unlikely that the action research team would have been invited to work with CIMMYT if we had not used the dual-agenda approach.

However, it also makes gender vulnerable to being overshadowed by organizational performance objectives. We saw this happen, for example, in the division-of-labor experiment. Managers were quite willing to entertain the organizational performance hypothesis that productivity could be increased by delegating more to national staff and enriching their jobs. They were much less inclined to accept the gender equity hypothesis that staff could find creative solutions to the time famine if work- and personal-life integration was at the center of the search for solutions. Consistently, the gender equity dimension of this experiment was perceived as an issue for individuals, and was overshadowed by the organizational-efficiency dimension, which was seen as systemic.

We observed some of the gender dimensions getting lost during implementation of other experiments as well. For example, while multi-source performance assessment is clearly a challenge to norms of hierarchy and authority, it can be implemented in ways that could either maximize or minimize the impact on gender equity. A standard 360^0 assessment would likely result in at least the same reduction in gender bias as has been noted in the literature (Edwards, et al., 1995; Edwards and Ewen, 1996; Gormley and Spink, 1997). However, if the criteria for evaluation included the specific areas of concern expressed by women at CIMMYT—invisible work, problem prevention, acting in ways that are best for the organization rather than for one's career—it would likely have a considerably greater effect.

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The action research team, therefore, helped to ensure that the connection between these criteria and gender equity was being held by at least some members of the work group. One of the team members interviewed a number of women involved in defining the criteria. During the interviews, staff were reminded of their comments at the analysis stage and of why the 360^0 experiment had come out of the gender project. This proved quite successful, and the final instrument includes those criteria most related to gender equity.

This experience convinced us that, even with a strong internal liaison group, we must continually put time and effort into developing an internal constituency who can hold onto gender during implementation. Being able to tell the gender story is key to the long-term success and continuation of the change process.

In conclusion, we have learned that making the connection between gender equity and effectiveness is not a one-step process. Any intervention with a dual agenda can be implemented in ways that have greater or lesser effects on gender equity. Thus, an important step in the analysis is to identify those factors with the greatest potential impact and to plan how to keep them front and center. It is a mistake to think that simply designing the intervention and getting agreement on its implementation will ensure that it is implemented in a way that best achieves equity goals. Thus, in future endeavors, we will allot more resources to the implementation phase, with the specific goal of building an internal constituency to hold on to this connection.

Linking Gender and Broader Equity Issues

The focus on gender equity opened the door and gave legitimacy to talking about other dimensions of equity—race, class, and nationality. At CIMMYT these issues come together in the division between national and international staff, and run deep in the culture. In many respects, the interests of the national staff commanded more attention than the call for gender equity. It might appear that this would create an alliance of interests, but it did not. In fact, although we were aware of the issue and had tried to address it during the set-up phase, we were unprepared for its effect on the project.

For example, during the feedback session, when a national-staff member declared that the gap between international and national staff was an additional mental model, it was simply added to the analysis and a group was created to discuss it. However, it was not subjected to the same level of analysis as were the other mental models, and its consequences for the organization were not delineated. Thus, it did not fit the dual-agenda model of the other experiments. In fact, the constituency concerned about class equity experienced it, quite passionately, as a single-agenda, moral issue of fairness.

This created problems for the project. The moral injustice of gender discrimination was much less salient in CIMMYT's culture than that of class discrimination as manifest in the perceived gap and distinctions drawn between national and international staff. It also had not been an explicit part of the analysis or of any of the stated motivations for undertaking the change project.

What we learned in this project is that raising one aspect of equity naturally raises others. This does not create a natural alliance, but creates an opportunity for a planned alliance. Had we, for example, thought about the dual agenda of class and/or ethnicity and organizational effectiveness and included this in our analysis, such an alliance might have developed. Alternatively, had we

been more forthright about the differences in the two approaches we might have called for a comparable analysis. Instead, the issues were conflated in ways that undermined the goals of both initiatives.

For example, issues of class discrimination came to overshadow dual-agenda concerns in both the division-of-labor and closing-the-gap experiments. In some respects, this stalled the experiments, as they became associated with one interest group. Allies willing to work on both gender- and class-equity issues distanced themselves from the experiments that came to be seen as calling for a level of change that many staff did not feel they had the authority to take on.

While we have few answers to the dilemmas this issue raised for the work at CIMMYT, we believe it is deserving of more attention. We are now undertaking work to develop frameworks and methods for better understanding and working with the intersection of race, class, and gender in organizational-change efforts.

B. METHODOLOGY FOR ORGANIZATIONAL CHANGE

Internal Change-Agent Groups

In designing this collaborative project, the goal was to work with an intermediary group who would support the change initiatives coming out of the gender-in-the-workplace project. Given the long-term nature of any effort to challenge underlying assumptions, internal capacity was needed to carry on the process after the action research team left the system. Hence, the team concentrated our attention on supporting the work of the CCC.

This approach had some success, most notably with system-wide change efforts. As noted above, the approach worked less well with changes in work practice, which had to be implemented at the work-group level. Moreover, as outside collaborators, the action researchers needed to work directly with the work group and the responsible managers, rather than through an intermediary group.

While we all continue to think that it is important to have an internal-change group composed of staff rather than managers, we believe that it should be composed of "seed carriers"—staff involved actively in change experiments. Such a group could then become a locus for learning and sharing experiences. We also learned that it is important for such a committee to be given a clear mandate; have the strong and visible support of management; have mechanisms of accountability to staff and management; and have its membership formally recognized. We believe that the volunteer status of the CCC undermined its legitimacy and led both managers and members to see committee work as something to be done on members' own time, even though the issues being addressed were a high priority for CIMMYT.

Collaboration with Managers

A central lesson that we are taking away from this experience concerns the action researchers' connection with senior managers. By working with an intermediary staff group and seeking to model non-hierarchical ways of working, the research team lost contact with the senior managers critical to initiating and supporting dual-agenda change efforts. This arrangement also likely aggravated tensions with regard to power and authority between the CCC and the senior management team. While the Director General gave the CCC authority to act to catalyze change,

the CCC felt uncomfortable taking up that new authority and the other members of the senior management team felt uncomfortable relinquishing authority. As the work of the CCC progressed, the tensions between the CCC and the senior management team increased, largely because of the ambiguities regarding the locus of power and authority. Eventually, in our view, these tensions reduced opportunities for launching experiments because the Directors felt outside the change process.

These tensions culminated in two critical instances of the senior managers curtailing the work of the CCC. They withdrew support for the CCC as a learning forum for organizational change, saying that this was management's role; and they denied the CCC's request that committee time be formally recognized in members' work plans and performance appraisals. Their action was based, in part, on what the managers saw as a lack of CCC results.

These decisions precipitated the discussions between the research team and the Director General that led to the "take-stock" exercise. An important outcome of this exercise was the agreement reached among the research team, the senior management team, and the CCC that senior managers should have more responsibility for implementing the change experiments and that a closer working relationship between the research team and the senior management team was needed. This has had positive results, in that two managers are now clearly responsible for the 360^0 and team-strengthening experiments, and they are pushing these forward. However, the research team has not been able to build a strong connection and collaboration with the senior management team and we fear that the learning function and explicit connections to gender equity may get lost.

The change also disempowered the CCC, which struggled to find a useful role in the ongoing change process and was eventually disbanded. This raises concerns as to whether the shift in structure of the collaborative relationship has unintentionally reinforced the mental model of default to hierarchy with negative consequences for gender equity. Clearly, more attention needs to be given to defining appropriate roles for change-agent groups, managers, and action researchers in this type of collaborative action research project.

Developing and Sustaining an Internal Constituency

An important lesson emerging from the CIMMYT experience is the importance of having an internal constituency committed to fostering gender equity. The nascent group of professional women concerned with inequity was a critical facilitator of the change process. Many were strong supporters of the initial work and contributed actively to designing change experiments. Many understood and could articulate the mental models and their implications for gender equity.

They also appreciated the dual agenda approach in that it provided a legitimate frame in which to raise issues connected to gender equity. It also took the spotlight off them as a source of criticism and discontent by identifying the issues as systemic, rather than individual. However, their active role in promoting change diminished once the CCC was given the formal mandate to move change forward, and the research teams' contact with them lessened.

We have learned that it is critical for an action research team to keep direct contact with this internal constituency throughout the change process. When the team reconnected with this group during the take-stock exercise and subsequently in the launching of the multi-source assessment

experiment, it became clear how important this group was to carrying the change forward. They do not want to see gender disappear; they can articulate the connections between the mental models and gender equity, and they can keep these issues alive in the everyday discourse of the organization.

Recognizing and Communicating "Small Wins"

The CIMMYT experience has underscored for us the importance of recognizing, valuing, and building on "small wins" in the long-term and complex change process (Weick, 1984). It is important to set milestones, to recognize when they have been reached, and to communicate this progress widely.

At CIMMYT such communications took several forms: articles reporting progress and achievements were placed periodically in the Center's weekly newsletter and in the newsletter for CGIAR-supported centers. The CGIAR Gender Staffing Program provided several opportunities for the Director General and staff to report on the gender and organizational change initiative and its achievements to donors and to senior managers from the other centers. A special presentation was also prepared for the external review panel that reviews the Center's performance and management every five years. Such activities have helped to demonstrate momentum, to keep people energized, and to sustain commitment.

Scaling Up and Diffusing Learnings and Innovations

One of the main challenges that has emerged in previous gender and organizational change efforts focused on changing work practices relates to diffusing the learning and innovations in such a way as to have broad impact in the organization (Kelleher and Moore, 1998). The CIMMYT action research project was designed to lay the foundation for diffusion from the beginning, but at a price. The extensive interviewing and the broad participatory approach used in the feedback session—in which staff experienced the process together—laid a strong foundation for shared understanding and broad impact. A large number of people in the organization were exposed to the analysis, worked with and developed it, and participated in generating ideas for action steps and change experiments. The mental models provided handles with which staff could keep assumptions explicit and sustain awareness and discourse on how the mental models are affecting decisions, behaviors, and values. This clearly had an impact on individuals' daily work practices, behaviors, and interactions.

However, we have learned that this approach is most supportive of introducing and sustaining changes in systems and practices at the organization level, such as strengthening communications between senior management and staff or developing more consultative processes for strategic decision-making. It has been less successful in stimulating experiments at the level of the work unit and work practices.

At CIMMYT, this is most evident in the division-of-labor experiment, which challenges deeply held assumptions about "good" work and workers. These assumptions and values run deep, and factors within CIMMYT and its environment continue to aggravate the time pressures. (If significant change is to occur, staff need to experience the benefits and energy that can come from using time more efficiently and freeing time for personal life responsibilities and interests.) This implies that the team should have spent more time on the implementation phase, both in

talking with work groups in order to identify a group interested in experimenting with alternative work practices and in supporting that experiment.

C. CONCLUSIONS

Our belief is that there are two fundamental ways to challenge mental models that shape gender equity and organizational effectiveness:

The first is by interrupting the discourse and developing new ways of understanding and talking about gender equity, norms, and work practices in the organization. This is what some colleagues have called "generating narratives" (Ely and Meyerson, forthcoming). At CIMMYT this was done very successfully through the use of mental models and the broad participation of staff in the feedback session. Many of the ideas and concepts generated through the inquiry and analysis are now an active part of the language of CIMMYT.

The second is by interrupting work practices that derive from and reinforce the mental models. This was the intent of the organizational experiments and action steps and is only partially completed at CIMMYT. The interruption of practice can be done only through experiencing new ways of working. Just as staff and managers at CIMMYT have experienced new ways of communicating—and this has challenged assumptions about the benefits of hierarchy—it is important that CIMMYT continue to experiment with new ways of doing work, if the mental models of the ideal worker and individual achievement are to be challenged successfully.

To catalyze energy and help the organization refocus on such remaining opportunities for change, a second, more bounded round of inquiry, analysis, feedback, and experimentation may be required. This underscores the iterative nature of the change process and the recognition that organizations have varied states of readiness to take on various issues. After successfully instituting changes at the systems level and seeing the impact, CIMMYT may now be ready to experiment with potentially more fundamental changes at the level of work practice and work groups.

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Table A.1: Comparison of baseline and follow up survey results by staff group

Staff group	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Com-posite[1]
All staff												
Baseline (n=114)	2.8	2.9	2.6	3.0	2.6	2.1	2.3	2.8	2.0	2.6	3.1	2.6
Follow up (n=111)	3.6**	3.4**	3.2**	3.4**	2.9	2.6**	2.7**	2.9	2.4**	2.9*	3.4*	3.0
Int'l staff												
Baseline (n=61)	3.0	3.2	2.9	3.1	3.1	2.4	2.7	3.1	2.1	2.8	3.6	2.9
Follow up (n=54)	3.8**	3.6**	3.5**	3.6**	3.6*	3.0**	3.1	3.5	2.6**	3.1	3.9	3.4
Nat'l staff												
Base line (n=53)	2.6	2.6	2.2	3.0	2.1	1.6	1.7	2.1	1.9	2.2	2.4	2.2
Follow up (n=56)	3.4**	3.1*	2.9**	3.2	2.4	2.2**	2.3**	2.4	2.3	2.6	2.9	2.7

Table A.2: Gender analysis: Comparison of responses of internationally-recruited men and women

Staff group	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Com-posite[1]
Int'l female staff												
Baseline (n=15)	2.9	3.3	3.0	3.3	2.7	2.0	2.6	2.7	1.7	2.7	3.6	2.8
Follow up (n=13)	4.0**	3.5	3.8**	3.7	3.5	3.0**	3.4*	3.7**	3.1**	3.3	4.4*	3.5
Int'l male staff												
Baseline (n = 46)	3.0	3.2	2.9	3.0	3.2	2.5	2.8	3.3	2.2	2.8	3.6	3.0
Follow up (n = 41)	3.7**	3.7	3.4**	3.6**	3.6**	3.0	3.0	3.4	2.5	3.0	3.8	3.2

1. test for significance of difference in means not run for composite scores
* = difference in means between baseline and follow up statistically significant at the .10 level
** = difference in means between baseline and follow up statistically significant at the .05 level

Scale: 1= strongly disagree; 5 = Strongly agree

Questions on next page

Questions:

In the last six months ....

1. I was aware of the major topics on the agenda of the MAC+ before most of its meetings.
2. I was aware of the outcome of the deliberations of the MAC+ and the decisions taken after most meetings.
3. There were effective channels currently in place for staff to bring issues, concerns, ideas, and/or suggestions to the MAC+ for their consideration.
4. I sought to follow and keep myself informed about the deliberations and decisions of the MAC+.
5. My Program Director/Unit Head communicated with staff on a regular basis (e.g. once per month) to inform us about the issues being addressed by the MAC+ and the outcome of its deliberations.
6. My Program Director/Unit Head requested on a regular basis input and ideas from staff prior to MAC+ meeting on issues to be considered by the MAC+ .
7. My Program Director/Unit Head asked for staff feedback on MAC+ decisions on a regular basis.
8. My Program Director/Unit Head was effective at bringing his/her staff's concerns and/or ideas to the attention of the MAC+
9. The MAC+ drew on expertise and experience of staff as required to analyze issues or problems and make decisions.
10. I had a good understanding of the rationale or reasoning behind most of the MAC+'s decisions.
11. I felt comfortable about raising questions in staff meetings or with my Program Director/Unit Head about the decisions taken by the MAC+.

ANNEX TABLE B: EXPERIMENT WITH MULTI-SOURCE PERFORMANCE ASSESSMENT: SUMMARY OF RESPONSES TO ASSESSMENT SURVEY BY SEX

Respondents were asked to indicate their level of agreement with each of the following statements by circling the appropriate number using the scale given below. If they did not feel they had sufficient information to answer the question, they were asked to mark N/A.

Don't know	Strongly disagree		Disagree		Moderately Agree		Agree		Strongly agree	
N/A	1	2	3	4	5	6	7	8	9	10

OBJECTIVES AND QUALITY OF INFORMATION	MALES (N=22)	FEMALES (N=54)
The 360⁰ degree feedback process provided me with information that (Subjects only, n=27)		
1. Is fair and credible	7	8
2. Is useful for assessing skills and behaviors important for successful work performance at CIMMYT	7	8
3. Gives an accurate assessment of behaviors and skills important for work performance in *my* work group/unit	6	8*
4. Is useful for assessing my competencies in collaboration and teamwork	7	8*
5. Is useful for assessing my competencies in enabling others to work more effectively and efficiently	7	7
6. Provides information that motivates me to improve my work performance	7	9*
7. Supplements in useful ways the feedback received from my supervisor under the current appraisal system	6	9*

* = difference in means is statistically significant at .05

OBJECTIVES AND QUALITY OF INFORMATION	MALES (N=22)	FEMALES (N=54)
8. Has motivated me to practice specific skills and behaviors that I believe will strengthen my work contribution to CIMMYT	7	8*
9. Has motivated me to develop an action plan for improving my performance	6	8*
10. Is useful for identifying elements in the work environment that hinder my performance	7	7
11. Is sufficiently useful to warrant the time I invested in the process	6	8*
The 360⁰ feedback approach (Subjects & respondents, n=78):		
12. Offers the potential for staff to receive feedback from coworkers who are most knowledgeable about work and skills	7	78
13. Offers a more useful assessment of performance than that provided by focusing on work outputs alone	7	9*
14. Has greater potential for fairness than the single rater approach. (e.g. supervisor only)	7	8*
15. Gives staff a more honest and frank appraisal of their work skills and behaviors than the single rater approach	7	8
16. Offers potential of helping staff to better align their work skills and behaviors with the core values necessary for CIMMYT to achieve its mission	7	8
INSTRUMENT AND PROCESS		
The specific 360⁰ process/instrument used (Subjects & respondents, n=78):		
17. Ensured anonymity of respondents	7	6
18. Ensured confidentiality for the recipient	8	8

* = difference in means is statistically significant at .05

INSTRUMENT AND PROCESS	MALES (N=22)	FEMALES (N=54)
19. Used relevant criteria	7	7
20. Used questions for which the meaning was clear	6	7*
21. Used forms with clear instructions for respondents	8	8
22. Provided sufficient explanation and training so that staff *receiving feedback* could participate effectively in the process	7	8
23. Provided sufficient explanation and training so that staff *giving feedback* (e.g. respondents) could participate effectively in the process	7	8
24. Collated and reported the quantitative data in a way that was easy to understand and use	7	8
25. Generated comments that provided useful supplementary information to the quantitative ratings	8	9*
RECOMMENDATIONS FOR FUTURE USE		
Based on my experience in the pilot, I recommend that CIMMYT (Subjects & respondents):		
26. Not use 360^0 feedback in its current or modified form	4	3*
27. Adopt the current approach to 360^0	6	5
28. Adopt the current approach, but continue to refine the instrument and process	7	8*
29. Adopt the 360° concept, but explore different approaches	7	6
30. Continue to develop the 360° feedback process for use throughout the Center	7	8

* = difference in means is statistically significant at .05

RECOMMENDATIONS FOR FUTURE USE	MALES (N=22)	FEMALES (N=54)
31. Develop the 360° feedback as a *complement* to the MBO performance assessment process	7	6
32. Develop the 360° feedback as a *substitute* for the MBO performance assessment process	5	5
33. Continue to use an external party to administer the analysis and generate reports	6	6
34. Develop the internal capacity to administer 360°	7	6
35. Continue to involve the person being reviewed in the selection of respondent teams	7	8
36. Continue to involve the supervisor in the selection of respondent teams	7	7
37. Develop a common set of performance criteria that reflect core values important for achieving CIMMYT's mission rather than using criteria tailored to specific work groups	7	7
38. Develop a range of instruments with criteria tailored specific job categories	8	7
39. CIMMYT should seek to implement 360° feedback for *staff development* center wide within two years	7	8*
40. CIMMYT should seek to implement 360° feedback for *as part of the formal performance appraisal* system within two years	7	7

* = difference in means is statistically significant at .0