



The Role of Gender in Agricultural Development

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ISSUES IN AGRICULTURE, NO. 3
Consultative Group on International Agricultural Research



About the CGIAR

The Consultative Group on International Agricultural Research (CGIAR) is an informal association of 40 public and private sector donors that supports a network of 16 (soon to be 17) international agricultural research centers. The Group was established in 1971.

The World Bank, the Food and Agriculture Organization of the United Nations (FAO), and the United Nations Development Programme (UNDP) are cosponsors of the CGIAR. The Chairman of the Group is a senior official of the World Bank which provides the CGIAR system with a Secretariat in Washington DC. The CGIAR is assisted by a Technical Advisory Committee, with a Secretariat at FAO, Rome.

The United States, Japan, and Canada are the leading donor countries, followed closely by several European countries. Developing country members of the CGIAR are China, Brazil, India, Mexico, Nigeria, the Philippines, and the Republic of Korea. The annual CGIAR budget is some \$US300 million.

International centers supported by the CGIAR are part of a global agricultural research system. The CGIAR functions as a guarantor to developing countries, ensuring that international scientific capacity is brought to bear on the problems of the world's disadvantaged peoples.

Food productivity in developing countries has increased through the combined efforts of CGIAR centers and their partners in developing countries. The same efforts have brought about a range of other benefits, such as reduced prices of food, better food distribution systems, better nutrition, more rational policies, and stronger institutions. CGIAR centers have trained over 45,000 agricultural scientists from developing countries over the past 20 years. Many of them form the nucleus of and provide leadership to national agricultural research systems in their own countries.

Programs carried out by international centers in the CGIAR system fall into six broad categories: Productivity Research, Management of Natural Resources, Improving the Policy Environment, Institution Building, Germplasm Conservation, and Building Linkages.

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Acronyms Used in This Paper

AIM	Asian Institute of Management
AWID	Association for Women In Development
CGIAR	Consultative Group on International Agricultural Research
CIAT	Centro Internacional de Agricultura Tropical
CIDA	Canadian International Development Agency
CIMMYT	Centro Internacional de Mejoramiento de Maiz y Trigo
CIP	Centro Internacional de la Papa
DANIDA	Danish International Development Agency
EMR	External Management Review
EPR	External Program Review
FAO	Food and Agriculture Organization (United Nations)
FSR	Farming Systems Research
FSRE	Farming Systems Research and Extension
IARC	International Agricultural Research Center
IBPGR	International Board for Plant Genetic Resources
ICARDA	International Center for Agricultural Research in the Dry Areas
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
ICW	International Centers Week
IDRC	International Development Research Centre
IFPRI	International Food Policy Research Institute
IITA	International Institute for Tropical Agriculture
ILCA	International Livestock Center for Africa
ILRAD	International Laboratory for Research on Animal Diseases
IPM	Integrated Pest Management
IRRI	International Rice Research Institute
ISNAR	International Service for National Agricultural Research
MUCIA	Midwestern Universities Consortium on International Agriculture
NARS	National Agricultural Research System
OFR/FSP	On-Farm Research With a Farming Systems Perspective
TAC	Technical Advisory Committee
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
WARDA	West Africa Rice Development Association
WID	Women in Development
WIRFS	Women in Rice Farming Systems Program

Preface

The origin of this paper lies in a discussion of gender issues at the annual meeting of the CGIAR held in Washington, D.C. in 1986. The group felt that gender issues needed a special focus as part of the agricultural development process because different user groups have different technology needs. The next year, gender issues were again discussed at a seminar held in conjunction with the mid-year CGIAR meeting in Ottawa, Canada.

At the annual CGIAR meeting — International Centers Week (ICW) — held at Washington, D.C. in 1990, members of the Group reviewed the progress made by international agricultural research centers in dealing with gender-related issues raised at the seminar. A request was made that the issue be placed on the agenda of the 1990 mid-term meeting of the CGIAR at The Hague.

Susan Poats prepared this paper for that meeting, at which she also made a verbal presentation. Stressing the need for both commitment and improved analysis, she argued the case for increased efficiency in technology development through gender analysis, and equality of opportunity for women in staffing the CGIAR system.

CGIAR members endorsed the themes explored in the paper and urged that measures be taken to close the gap between rhetoric and reality. Several follow-up measures have been taken by the CGIAR, including this publication.

Susan Poats' paper is set in a CGIAR context, but the issues she raises go beyond the CGIAR and the international centers it supports. Weaving gender issues into agricultural development requires location-specific, adaptive research, and relevant applied research, both firmly anchored in a user perspective.

Gender analysis is a refinement of a user perspective. Its acceptance as an imperative of agricultural development depends very much on capacities and approaches within the national agricultural research systems (NARS) of developing countries. Continued effort is needed to build these capacities, and to increase gender sensitivity in the area of agricultural development as a whole.

Publication of this paper is meant to draw attention to these issues and, thereby, to contribute to the process by which gender awareness and gender staffing become pervasive in the global agricultural research system.

The Role of Gender in Agricultural Development

Susan V. Poats¹

Introduction

Gender² issues are not new to the CGIAR system. Indeed, their importance in agricultural research and women's roles in agricultural production and food systems were discussed by CGIAR system members on several occasions during the 1980s. Several recommendations concerning gender issues have been made by the system itself to the member IARCs. These recommendations are:

1. to incorporate the gender variable in research methods and analysis;
2. to include more women farmers in the IARC technology generation process;
3. to increase the number of women from NARS in IARC training programs; and
4. to engage more women professionals in the ranks of IARC scientific staff, management, and boards.

While several centers have made exceptional progress in adopting and implementing these recommendations, their adoption across the CGIAR system is uneven. Some centers appear to have ignored them altogether.

¹At the time this paper was written the author was Co-Director of the Gender and Agriculture Project at the Population Council in New York. In April 1990 she joined the Centro Internacional de Agricultura Tropical (CIAT) as the Social Scientist for the Cassava Program in Quito, Ecuador.

²Gender describes the socially determined attributes of men and women, including male and female roles. In comparison, sex refers to the physical and biological differences between men and women. Gender is a useful socioeconomic variable to analyze roles, responsibilities, constraints, opportunities, and incentives of the people involved in agriculture.

What factors contributed to adoption of a gender perspective among those centers that have done so successfully? Why have the other IARCs found it difficult to deal with gender issues? What next steps should be taken by the CGIAR system to ensure system-wide attention to gender?

Guided by these questions this paper addresses five areas. It begins with an overview of the rationale for including gender issues in agricultural research and development, then summarizes the existing gender issues recommendations made to the CGIAR system. A synthesis of the discussion and recommendations made on differential user groups and gender issues at the 1987 ICW is included. The next section highlights innovative strategies and approaches taken by some centers to deal with certain gender issues. This is followed by an analysis of the reasons for the difficulties within the IARC community of incorporating gender-sensitive research and development. Based on this analysis, and drawing upon the successful experiences from within the CGIAR system, the final section outlines next steps and alternative strategies to assist the CGIAR system in achieving a better gender balance in the methods and operation of its research program.

Broad support for this paper's approach was expressed by donor representatives at the 1990 CGIAR Mid-Term Meeting. As a result, the TAC Chairman arranged for the author both to present the paper to TAC in October 1990 and to lead a two-day, awareness-raising workshop on gender analysis and gender staffing in July 1991.

Also as a result of the paper, TAC and the CGIAR Secretariat emphasized the status of gender analysis and staffing in the terms of reference for the independent external teams which review the programs and management of the centers every five years.

In addition, the CGIAR Secretariat, in consultation with the center directors, agreed to set up a program which would address both gender analysis and gender staffing issues at the IARCs. This agreement was reflected in a Proposal to Donors sent to all CGIAR donors in November 1990. By April 1991



pledges had been made by CIDA, IDRC, the Ford Foundation, Australia, Norway on behalf of the Scandinavian countries, the United Kingdom, and the United States totalling 60 percent of the proposed budget. At their June 1991 meeting center directors agreed to implement the program.

We are now into the last decade of the twentieth century. The 1990 CGIAR Mid-Term Meeting was a turning point in advancing understanding of gender-related issues and of fostering actions that could lead to gender equity in the international system of agricultural research. But much work needs to be done. As we near the twenty-first century it is useful and timely to take stock of where we are in reaching that goal.

I. A Rationale for a Gender Perspective in Agricultural Research

In a 1989 IDRC study Patricia Stamp observes that over the past 15 years there has been “an emerging moral and scientific commitment to the truth that women are half of humanity and that gender relations are as fundamental a shaping force in society as are economic relations or political structure. Indeed, there is no political economy that is gender neutral...In development discourse, women are no longer entirely invisible, even if they still get far from equal time” (Stamp, 1989:2).

Stamp asks whether Third World social reality has been adequately considered in technology generation and transfer studies and projects, and calls for testing the scientific accuracy of each development study by asking whether gender variables have been properly accounted for.

To a large extent CGIAR donors are calling for this gender test. Gender analysis³ is now recognized by many development institutions as an important aspect of the design, implementation, and evaluation of development projects. The fact that women are critical to agricultural production and that their access to necessary resources and effective technologies

is often constrained by gender barriers is confirmed in the explosion of literature on gender and development, and by the increasing number of conferences and workshops on the topic in the international research and development community.

However, there is a considerable difference between voicing concern for gender — that is, being sensitized to it — and incorporating gender as an analytical variable in the research and development equation. The gap between sensitization and incorporation varies across the different development sectors. In agricultural research, sensitization of institutions is, unfortunately, not widespread, and the gap between the few sensitized voices and actual incorporation is wide. What might be called the general ‘culture’ of agricultural research institutions often compounds the normal difficulties of introducing gender analysis. Important among these cultural features and their implications are:

1. a general belief that technology alone will solve problems;
2. a view of technology as neutral to socioeconomic differences among users;
3. increasing disciplinary and technical specialization, and reliance on research methods that encourage technical fixes rather than integrated approaches;
4. relatively recent and scanty inclusion of non-economic social sciences in technology development, and thus the absence of relevant gender-sensitive methodologies;

³Gender analysis is the analysis of the way male and female roles interact with research or project goals and outcomes. The focus of gender analysis is less on equity for women and more on the effectiveness and efficiency of development activities. Effective gender analysis leads to better definition of human resource needs and capabilities, and to rectifying the gender imbalance that exists among the professionals involved in research and development. It results in a more equitable allocation of resources and benefits.

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5. a generally conservative institutional political climate that makes the subject of gender seem like a radical intrusion rather than a call for greater efficiency of resource use;
 6. the language of agricultural research, which has tended until recently to make women invisible by referring to farmers and researchers only as 'he'; and
 7. the extremely low number or absence of women among professional or management ranks of research and extension institutions, which contributes to the male orientation of the research agenda.

These factors reflect deep-seated values that have made it difficult for agricultural research with relevant technology to reach low-resource or small farmers, much less to speak of a gender perspective in technology development.

During the past 15 years a growing client orientation and a gradual shift toward on-farm experimentation has occurred as a result of several new interdisciplinary approaches to agricultural technology development. Most important among these are farming systems research and extension (FSRE) and farmer-participatory or user-oriented research. By focusing more directly on lower resource farmers and their need for appropriate technology, these approaches have allowed for a recognition of the differences between men's and women's roles in production, and for the replacement of assumed homogeneity of farm households with the concept of 'intrahousehold dynamics'.

The reorientation and methodologies embodied in the on-farm, client-oriented approach have fundamentally altered the relationship between social science and agriculture in three key ways that have provided fertile ground for the incorporation of gender analysis. This was done by expanding the range of social science disciplines engaged in agricultural development work, placing social scientists on technology development teams, and developing institutional structures to provide a home base for the social sciences in agriculture.



These changes have expanded the perspective of existing agricultural staff and have brought new professionals, many with gender analysis expertise, into the agricultural field. Application of gender analysis tools to the iterative procedures of client-oriented technology development is beginning to change the way production problems are identified, the understanding of the division of labor, and the nature of farmer participation.

The tools of gender analysis are more than checklists or guidelines for data collection. They are analytical frameworks designed specifically to deal with gender issues (Overholt et al., 1985; Feldstein and Poats, 1990). Their use leads to the design of strategies and interventions which ensure that men and women are better integrated into development efforts.

An FAO study showed that the incorporation of gender frameworks into the work of research and development organizations is intimately linked to five conditions:

1. making changes in policy mandates;
2. having senior management and leadership support and involvement;
3. implementing gender-explicit evaluation and monitoring mechanisms;
4. having sufficient professional staff with gender expertise; and
5. enhancing overall human resource capacity through training (Poats and Russo, 1989).

Evidence indicates that while the first four conditions are necessary, the fifth appears to be critical.

A survey of projects using on-farm research approaches found that while there was a correlation between having women and/or social scientists on teams and whether gender analysis was conducted, not all women or social scientists were successful in conducting gender analysis (Poats, Gear-

ing, and Russo, 1989). Their presence did not guarantee attention to gender issues. However, in all cases where training in gender issues and analysis occurred, project members did subsequently conduct or improve gender analysis. Training of all project or organization professional staff can significantly alter cultural views that have caused gender blindness,⁴ and can be a critical step in learning how to do gender analysis and how to incorporate gender sensitivity as part of the normal research process.

II. Gender Issues in the Donor Community

The above-mentioned FAO study reported on a number of organizations that are using training as a key tool to promote the incorporation of gender analysis. Among the institutions included in the study were AIM, CIDA, UNDP, USAID, the World Bank, and a number of U.S., Canadian, European, and Indian universities. Institution-wide training courses designed to introduce gender issues in development and to train staff in the use of gender analysis tools, have been key elements in the process of incorporating a gender perspective into the development agendas of these organizations.

In another study Eva Rathgeber (1987), an IDRC Women in Development specialist, reviewed the official position taken by nine donors on gender issues and described the efforts they are making to ensure a greater benefit for women from development aid projects. Like those described in the FAO study, many of these donors are major CGIAR system supporters. It is clear that as a result of specific policy statements, training of project managers and designers, and qualified leadership, many donors are now considering their funding choices with explicit attention to gender issues. This fact alone provides a strong reason and incentive for CGIAR centers to increase their attention to gender issues in international agricultural research and development.

⁴**Gender blindness** is the inability to perceive different gender roles and responsibilities, the perception that all farmers are male (or neuter), and the failure to realize that research and project activities can have different effects on men and women.



III. Does Gender Make a Difference?

For those who have added gender analysis to their toolkits for diagnosing farm-level problems and for the design or adaptation of new technology, the response is an overwhelming yes: gender does make a difference. There are several efforts underway further to document methodologies where gender made a difference. Three examples are useful.

In Colombia an on-farm bean and fertilizer research project did not initially include women's perspectives on bean varieties because prevailing wisdom held that only men were engaged in bean production. Cued by anomalies in the preferences of some households for bean varieties designated as unmarketable by the project researchers, the team decided to use participant observation tools to further explore internal household decision making about bean variety preferences and selection. They learned of the multiple roles of beans in the household and of the women's key role in influencing the choice of bean varieties for production. As a result, the team retained bean varieties in the on-farm testing program that otherwise would have been discarded by breeders. Including both men and women as bean growers revealed new information about the bean selection process farmers use. This proved valuable to bean breeders and made a difference in the direction of subsequent bean research in the project (Ashby, 1990).

In Zambia the experiences were documented of an on-farm research team that conducted its early diagnosis of production problems only among male farmers. Growing concern over timeliness and competing needs for labor as the critical constraint to improving crop production led the team to conduct a detailed study of household labor resources and allocation. Recognition of the increasing population of female-headed households in the research area led to shifts in the approaches used to identify different groups with differing potentials for technology use. Reducing the labor requirement especially among women responsible for weeding became a research priority and led to an experiment mixing maize, the dominant men's crop, with beans, a key cash crop grown by women. Both crops were traditionally grown separately. By combining them the researchers hoped to take advantage of

well-known complementary nutritional benefits as well as decreasing the amount of weeding time, since both could be weeded simultaneously.

However, in farmer evaluations of the technology that included both female and male trial participants, women voiced negative reactions. When beans were planted on land normally allocated to maize, the women lost ownership of the beans and the men benefitted from the cash generated by their sales. Since men and women kept their incomes separate within households, and each had different responsibilities to fulfill with their cash, loss of the bean income to women could decrease the household's welfare. Researchers thus learned of gender differences in the criteria for a 'successful' technology. Their next research steps would have to consider whether women's ownership of beans could be retained while using mixed cropping technology, or if other labor-conserving technologies would fit more appropriately with the existing gender-segregated cropping system (Chabala and Gichira, 1990).

A final example comes from the Philippines and concerns an IPM project that initially worked with male farmers. IPM is considered to be difficult to comprehend and involves much decision making. Because of this IPM is thought to take longer to learn and to be more difficult to adopt. Although researchers felt farmers in this project were beginning to understand the concept, few were adopting it. In searching for an explanation, researchers found that though men did indeed do the physical labor associated with managing pests, women also played a crucial role. "It was the wife who dictated the specific brand or kind of pesticides to buy and the dosage to use, based on friend's recommendations or based on experiences of the husband as to which poison kills most. However, in a tight financial situation the decision is to settle for the least expensive kind..." (Adalla, 1988). Even if the male farmers did see a potential value in IPM, their wives continued to purchase pesticides. Once the researchers understood the role women played in determining the choices in pest management technology, women were invited to participate in the IPM discussions and training. This resulted in an increase in the use of IPM because women understood the alternatives to pesti-

cides. In addition, the women's involvement led to a project to develop IPM tools appropriate to their vegetable gardens.

These examples show clearly that gender makes a difference. In all three cases, when researchers pursued who is doing what in the production system, they discovered that initial suppositions were wrong and that both women and men were involved and needed to be considered in the technology development process.

The IARCs, as leaders in the international community of agricultural practitioners, need to take a serious look at the critical role they must play and the example they must set in furthering a gender perspective and in enhancing the use of gender analysis to solve Third World agricultural production problems.

IV. CGIAR Recommendations and Actions: 1981-1986

Attention to gender issues in the CGIAR system began with a call to consider the importance of women in agricultural production. The 1981 Quinquennial Review Committee Report on the CGIAR system states:

In many parts of the developing world, women play an important role in agricultural production, for example, as farm owners, managers, sales agents, and field workers. Too often, this role has been overlooked resulting in reduced impact or even total failure of programmes related to agricultural development. Consequently, it is important that the System should give explicit attention to the role of women wherever relevant to its work. In particular, Centers should review their programmes, particularly those on farming systems, to ensure that the role of women is specifically considered and that the possibility of differential benefits to men and women is analyzed. Furthermore, we consider that TAC should ensure that the impact on

women of the System's work is fully taken into account in designing and evaluating programmes of work (Report of Review Committee 1981, Para. 7.114, p.97, taken from MUCIA, 1983:5).⁵

While these recommendations call for explicit action, little was immediately taken. At the 1982 ICW, MUCIA's Barbara Knudson and Jean Weidemann presented a proposal for a collaborative program on women and agriculture between the MUCIA Women in Development Network and the IARCs (MUCIA, 1983). The program would have provided consultant services and have developed materials for education and training on women's roles in agriculture. Though the program was not funded, it was the first time the subject of directing IARC research activities toward the technological needs of women farmers was discussed among donor and IARC representatives in an ICW plenary session.

In hindsight, the proposal was probably ahead of its time. Few people were making the link between technology development and the varying technical needs and constraints of different potential users of new technology. However, the following year the situation began to change within the CGIAR system.

In September 1983, IRRI convened an international conference on women's concerns in rice farming. Biological scientists, social scientists, and policymakers from 27 countries discussed whether women have benefitted from the introduction of new rice technology, how women might benefit from emerging technologies, and how women's roles

⁵The Committee addressed a separate but related issue in its Report, where additional recommendations urge attention to the special needs for training women as scientists both as professional members of staff for the institutions and as future research leaders in the developing countries (Para. 5.56 cited in MUCIA 1983:5). The Review Committee advised the CGIAR to "make vigorous efforts to increase the participation of women as professional staff and to identify women qualified for membership on Boards of Trustees and of other CGIAR bodies," and to insure that "the Secretariat should report to the Group, at appropriate intervals, on progress made in these respects" (Para. 7.115, p.97, cited in MUCIA 1983:5).

in technology development and transfer might be enhanced (IRRI, 1988). The conference was the catalyst that launched activities at IRRI leading to the establishment of the WIRFS program in 1986. How and why this program has been successful will be discussed in Section 6. The conference monograph, *Women in Rice Farming* (IRRI, 1985), set an example for national and international agricultural research institutions to begin exploring the relationship between specific production systems and women farmers. Conference participants also made three recommendations to the CGIAR system:

1. The CGIAR should organize an inter-center seminar for Policymakers on Women in Farming Systems Improvement based on the work in all IARCs. All CGIAR members could be invited to participate so that donors can contribute to the action research projects of the kind recommended.
2. The TAC...should add the following to the Terms of Reference and Guidelines for external program reviews of the IARCs: "Examine the research and training programs of the institute in relation to their potential impact on women-specific occupations with a view to diversifying employment opportunities, generating additional income, and reducing drudgery."
3. Centers themselves could monitor progress during their annual program reviews.

These recommendations contributed to the system decision to explore the gender question. At its November 1983 ICW annual meeting, following the IRRI conference, the CGIAR commissioned a wide-ranging impact study of the results of the activities of the IARCs under its sponsorship. At that time the Impact Study leaders and Advisory Committee recognized the need for a separate study on gender issues. Conducted by Janice Jiggins in 1984 and 1985, the study produced a series of sector-specific papers (on livestock, breeding, post-harvest

issues, etc.) that were later compiled into a single volume, *Gender-Related Impacts and the Work of the International Agricultural Research Centers* (1986).

While the Impact Study was still underway, two conferences brought CGIAR centers and gender issues together. In 1984, the Rockefeller Foundation hosted a conference entitled "Understanding Africa's Rural Households and Farming Systems" (Moock, 1986). Though focused on one specific region and not targeted to the entire CGIAR system, participants included a number of IARC representatives and CGIAR donors. The conference attempted to reconcile the divergent methodological and conceptual issues between FSRE as it was being conducted at the time and the body of household research conducted largely by social scientists. Progress was made in the exchange of ideas, experiences, and methods. However, more than one participant characterized the conference as two bodies of researchers speaking past each other.

At the time FSRE practitioners were still reluctant to acknowledge the need for a gender disaggregated understanding of the African household, and social science researchers examining the African household were not generating the kinds of analyses that could lead easily to technical decision making. It was obvious that more communication between the two groups would be necessary to arrive at a cohesive analytical framework.

In March 1985, the ISNAR and the Rockefeller Foundation co-sponsored a week-long, inter-center seminar in Bellagio, Italy on "Women and Agricultural Technology: The Users' Perspective in International Agricultural Research" (Rockefeller/ISNAR 1985, Vols. I and II). The meeting objectives were to assess centers' activities related to a more effective integration of women in the modernization of agriculture, and to seek ways to improve CGIAR system performance on this issue.

The seminar is a benchmark for the CGIAR system on user perspectives and gender issues. The papers prepared for the seminar summarized the experiences, shortcomings, and success stories of women and agricultural technology, and

outlined what would be needed to conduct gender-aware research. On the positive side, six of the IARCs provided fairly clear evidence of analytical application of gender issues to problems of technology development. Several centers gave examples of specific technology changes to suit the needs of women users. Some of the reports were less positive.

Three IARC reports dealt with gender issues mostly in terms of including more women in training programs, and provided little more than token evidence of gender analysis in their research programs. Two of the center reports are notable for not mentioning women or gender issues at all. Finally, one report presented a negative view of women's roles in production and misinterpreted existing data on gender issues from the region of the center's responsibility.

The conference confirmed that several centers were already engaged in gender-sensitive research on some topics and were taking steps to ensure that gender analysis would be included in other areas of responsibility. The concluding participants' statements affirmed several key points⁶ on the relevance of women's and gender issues to research:

1. that gender is an important variable in distinguishing among potential beneficiary groups for agricultural technology research and policy analysis;
2. that female farmers do not form a homogeneous group for development purposes and gender and other variables need to be considered in defining categories of people for research and development activities;
3. that choice of technological approach is based on more than the production process itself; it is based on the food and economic context of the household and women play an active part in that choice;

⁶These issues are drawn directly from the Concluding Statement of the report prepared on the seminar (Rockefeller/ISNAR, 1985, Vol.I) and from an interview with Josette Murphy, then with ISNAR, conducted following the seminar and reported in CGIAR News Vol. 5, No. 2, June 1985.

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4. that the economic contribution of women to the household can be disrupted and disadvantaged by the introduction of well-intentioned technological change, particularly when biased toward male heads of households; and
 5. that women are crucial repositories of information on plant and animal species as well as on technical aspects of production, and useful insights are lost when women are ignored.

The seminar confirmed the need for complementarity between IARCs and national programs in addressing gender issues and women's participation in the technology development process. Characterizing the relationship as a team effort requiring more two-way flow of information, the seminar participants called for:

1. increased, systematic use of information and cooperation in raising awareness of gender issues at national and international program levels;
2. development of a long-term strategy to consider women in all phases of research and development;
3. greater collaboration and recognition of complementarity among the IARCs, especially between the commodity centers and IFPRI and ISNAR; and
4. inclusion of gender issues in the evaluation of the impact of IARC work at the national systems level.

Finally, the concluding seminar statement contained the following suggestions for the CGIAR system:

1. gender issues must be linked to the entire technology generation process;
2. IARCs should collaborate with national organizations in generating information and methodologies dealing with gender issues;

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3. interdisciplinary teams of scientists should identify specific areas in which gender makes a difference to the effectiveness and efficiency of IARC work;
 4. inter-center exchanges need to be organized among natural and social scientists to discuss specific issues in incorporating gender into research plans and procedures;
 5. high-quality studies on the experiences of, and methodologies for, incorporating gender issues should be commissioned and widely disseminated; and
 6. IARCs and national programs should offer more training opportunities for women, should find ways to increase the number of female extension workers to reach farm women, and should pay specific attention to gender factors in on-farm research.

Taken together, the seminar statements — affirming the need for understanding gender issues, calling for collaboration between international and national research entities, and laying out specific suggestions for the CGIAR system — represent a positive step toward gender sensitivity for the entire system. In effect, the conference “signaled the beginning of a system-wide dialogue on the subject of women and agricultural development” (CGIAR News, 1985).

However, two critical elements were left off the agenda.

First, no mechanism was developed to ensure that the system would follow the seminar suggestions. Instead, as Josette Murphy explains, “It was left to each center to decide exactly what it needs to do under its mandate and how it should go about doing it. Reporting and other administrative requirements were not included to avoid artificial isolation of the issue” (CGIAR News, 1985). While the argument for not isolating gender issues is valid, the lack of system-wide mechanisms to require, evaluate and monitor progress in this area has contributed to the great unevenness in center attention to gender issues. To a large extent, those centers that were already beginning to deal with gender issues, at least in

some program areas, have continued to do so, provided that the people who had the capacity to direct and conduct the work have remained at the centers. Only one center, IRRI, has developed an explicit gender issues program. Those centers where the issues were weak or misdirected in 1985 have, with few exceptions, continued in the same fashion.

Second, no consideration was given to how centers would train their scientific and management staff to be able to incorporate gender issues. Those present at the seminar represented only a tiny percentage of CGIAR system staff, and they could be characterized as being 'the already converted'. How would larger numbers of scientists, managers and policymakers be sensitized to gender issues? Where would they learn the skills and methods to be able to incorporate gender concerns into their work?

Overlooking these two questions has meant that while the system has called for attention to the issues, only the committed few have taken and continue to take action. Until these areas are addressed, gender issues will not become part of the most critical task of the CGIAR system — the technology generation process.

Following the Bellagio seminar, many IARC scientists communicated results of gender-related research in several international meetings. To some extent the Bellagio seminar may have at last validated the topic as legitimate for discussion outside the centers, if not within. Papers by center scientists were included at the 1986 Conference at the University of Florida on Gender Issues and Farming Systems Research and Extension (Poats et al., 1988), at several AWID meetings, and at the annual Farming Systems Research and Extension Symposium.

In 1986, Janice Jiggins' CGIAR report on gender-related impact was published. It added numerous examples in which taking gender into account made a difference in the development and adoption of technology. She reiterated many of the concerns and suggestions from the previous Bellagio conference with two important additions. First, she called for explicit attention to the links between varietal characteristics,

production, and domestic processing. In arguing for early attention to preservation and preparation technologies, she identified these areas as largely a female domain and one that is normally excluded from all but a few IARC programs. Second, she highlighted the lack of understanding of multi-purpose uses for much of the biomass produced by rural households. Defining research objectives in terms of single uses for crop or livestock products can keep users, who are frequently women, from benefitting from other traditional products made from these same commodities.

Jiggins' report has been widely circulated and cited among the international community of researchers and development workers addressing gender issues. The increasing call for further discussion and action on gender issues and analysis led the CGIAR Secretariat to organize a half-day special seminar on "Gender Issues: User Impact, Agricultural Technology and the Global Agricultural Research System" at the 1987 ICW. While the 1983 IRRI conference and the 1985 Bellagio seminar brought together a range of CGIAR system leaders and specialists on gender issues, the 1987 ICW seminar was the first time since 1982 that the entire system — donors, Centers, Secretariat and TAC — discussed the question of gender and agricultural technology.

V. The 1987 CGIAR ICW Seminar: Summary and Recommendations on Gender Issues

The focus of the 1987 ICW seminar was the need to understand the potential impact of agricultural technology on disadvantaged user groups, particularly women. The three themes addressed were how the research process can bring user implications to bear in technology choice, what the respective roles of national research systems and international centers are in incorporating user considerations into technology design, and how far the centers have progressed in achieving gender balance and incorporating it into research and training activities.

After the seminar the CGIAR Secretariat summarized the discussion recommendations as follows:

1. that the centers play a role in bringing processes and methods to national systems which allow decisions on research emphasis and technology choice to be made keeping in mind the needs of, and potential impact on, user groups;
2. that the CGIAR receive, on a routine basis, information on progress in this area, and in the balancing of genders at the centers themselves; and
3. that external reviews of centers include gender as an explicit issue in the questions asked of them, and in their reports.

Other issues were discussed at the seminar as well. For example, saying it was necessary to target "the actual actors in the process," CIDA's Margaret Catley-Carlson outlined three essential elements to effect institutional adoption of a gender perspective. They are a clear, agency-wide policy mandating attention to gender as a development variable, a plan created from the bottom up for implementing the policy, and training for all staff, starting at the top.

All the presenters highlighted the need to incorporate user considerations in technology development, and the essential inclusion of gender analysis in determining user groups. Including a gender user perspective raised other concerns, however. Given that user group patterns and needs are location-specific, how can the IARCs, with a mandate to develop technology for a broad range of users, orient research output and research program planning to a group with such differing needs?

Concerning this question, Bob Herdt of the Rockefeller Foundation emphasized that the IARCs' key role is to provide leadership and training to develop appropriate analytical methods to address user concerns. These methods must be oriented to identifying innovative technologies that will have

a positive impact on the groups that are the ultimate CGIAR system clients: women, the poor, and the disadvantaged.

Opponents of the user perspective and of the concern for gender issues often argue that the IARCs' role is to generate technologies that are useful to many nations. These are then adapted for local users by national programs. While the boundary between what is IARC work and what is NARS work is often fuzzy, the seminar discussion highlighted the importance of feedback to identify user-relevant priorities for research. Technology developed without considering user needs is not likely to be adopted.

On-farm, client-oriented, or farming systems research within the IARCs will continue to have the greatest responsibility for the user perspective in research. However, to carry this out effectively FSR must increasingly emphasize a feedback role in research priority-setting and strategy-building. Most importantly, FSR will have to incorporate methods to account for the gender and intrahousehold differences in technology impact.

The experiences discussed in the seminar confirmed that it is preferable that efforts to rectify the gender imbalance in agricultural research be incorporated into mainstream efforts rather than to have the status of special women's projects, which might further isolate the problem and solution.

Patel's presentation on adaptive research and gender issues in Zambia brought out the critical issue of the rapidly growing number of female-headed households due to male outmigration, a phenomenon occurring at a rapid rate in all developing countries. The growing feminization of agriculture, especially food crop production, will have profound implications on the definitions of user needs for research and on the ability and resources of poorer farmers and households to adopt improved technology. Gender-sensitive analysis will need to play an even stronger role in determining the differences among women farmers as well as among male and female farmers. Given the CGIAR system mandate to increase the amount, quality, and stability of food supplies for poor people in low-income countries, the centers must deal with

the fact that unless the trends are quickly and drastically altered, the majority of their clients in the near future will be women.

Though most of the seminar discussion focused on technology users, a parallel theme addressed gender imbalances among the designers and managers of the technology innovation process: the researchers, staff, management, and center boards. In the final seminar presentation CIP director general Richard Sawyer underscored the need to increase the number of women professionals in the CGIAR system. He pointed to the lack of women in the centers themselves, on the boards, and within and the CGIAR Secretariat. Using CIP as an example, he recommended that other centers actively recruit women professionals without sacrificing quality for equity. However, he warned against getting too involved with the internal politics of national programs in trying to balance gender inequities among IARCs training courses participants.

While the attention of the IARCs and the entire agricultural research establishment to the gender issue is long overdue, the seminar discussion revealed another problem. Gender refers to men and women, not just women. The use of gender analysis is not gender-specific. Male and female researchers can be equally proficient at gender analysis. Likewise, a woman researcher trained in a narrow technical discipline can be as gender-blind as a male trained in the same profession. Both need training in the skills of gender analysis to become proficient and effective in applying it to their work. Therefore, hiring more women scientists will not rectify a gender bias in the technology generation process unless they are trained in gender analysis techniques.

Gender has surfaced at least twice more among the centers since the 1987 ICW. Once was during the CIP International Agricultural Research Centers "Workshop on Human Resource Development Through Training," in Lima, Peru, in September 1988. A second time was at the 1989 ICW. Participants called for a report on the progress made since the 1987 ICW seminar on the incorporation of gender and user issues by the centers. This paper is a first response to that request.

VI. Strategies for Gender Issues: Examples from the System

Obviously there is no lack of recommendations to guide the CGIAR system in dealing with gender issues. However, as mentioned, implementation of the recommendations is uneven among the 13 centers. Based upon interviews with people working within the system and others who work with the centers, and upon system documents such as annual reports, project reports, planning documents, and external program and management reviews, the centers can be divided into three categories.

The first category comprises those centers with a clear mandate or policy on gender issues, an operating research program that has a focus on gender, training in gender analysis, and a commitment to a gender balance among staff and trainees. The only center in this category is IRRI.

The second category consists of centers where individual scientists have worked either directly on gender issues or have incorporated gender analysis into ongoing research. These centers do not have a clear policy on gender, and the work that has been done on gender, even when recognized internationally, appears to have a limited audience within the center. In some instances such work is mentioned briefly in annual reports, but in most cases the results remain at the projects and programs level and do not inform the center efforts as a whole. The centers falling into this category are CIAT, CIMMYT, CIP, ICARDA, IFPRI, IITA, and WARDA.

The final category includes centers where there was very little attention to, or mention of, gender or women in the documents reviewed. Some of the centers did not mention these subjects at all in any of the documents reviewed. Others mention them briefly in project-related reports but do not mention them at all in annual reports or strategic plans. This group includes IBPGR, ICRISAT, ILCA, ILRAD, and ISNAR.

A number of strategies from the first two groups can be identified that would be useful to the other centers. Three are discussed here. Of these, considerable attention is given to IRRI due to the length and depth of its experience.



IRRI

The most succinct statement on IRRI's position regarding women and gender issues is found in "IRRI Toward 2000 and Beyond" (1989). Of the five IRRI policies laid out in the document to guide the institution's future, the fourth is stated as "women and rice." The brief policy summary states: "Affirmative action will be taken in recruitment, in selection of candidates for training and in research design to address the roles of women in IRRI itself, in national rice programs, and as users and beneficiaries of rice technology" (p. 23).

An expanded version of the policy provides some additional information about the program and its results:

The role of women in rice research and rice farming has both efficiency and equity implications. IRRI has been sensitive to this issue for many years. Some progress has been made in regard to women in IRRI itself, in national rice programs, and as users and beneficiaries of rice technology, but much remains to be done.

We recognize and uphold the principle of affirmative action in the recruitment of all staff at IRRI. We will intensify our efforts to recruit qualified women scientists and administrators. We also aim to increase the proportion of women in IRRI graduate and postdoctoral fellow programs and short-term training programs.

We will continue to promote the integration of women's concerns into all research projects in IRRI and in national programs. Specifically, gender analysis will permit recognition of the contribution of women to rice production, marketing, and consumption; technologies that reduce the burden on women without displacing their income-earning capacity will be developed, and research on rice processing will aim at conserving the level of essential nutrients. These activities will help us to focus

more sharply on the whole family as the ultimate beneficiary of rice research.

The cornerstone of IRRI's focus on women and gender issues is the WIRFS program. WIRFS traces its history to IRRI's 1983 Women in Rice Farming conference. In addition to the recommendations made by the conference to the system (mentioned earlier), participants also called for IRRI to organize a network on women and rice farming systems for the Asian region. In 1984, Jennie Dey (currently with FAO), an expert on women and rice production, was funded by the Ford Foundation to lay the groundwork for such a network involving Bangladesh, India, Indonesia, Nepal, the Philippines, and Thailand.

Following the Bellagio Conference on Women and Agricultural Technology, IRRI took steps to implement the recommendation to develop a long-term strategy for involving women in all phases of research and technology development. In 1985, IRRI held a project design workshop to create WIRFS. Leadership for the first year was provided by noted University of the Philippines scholar Gelia Castillo, who was already serving on the boards of several centers. She coordinated WIRFS activities at IRRI in the Philippines and within country members of the Asian network for rice farming systems. In 1986, WIRFS began research within one of IRRI's crop-livestock projects (Paris, 1988). This work demonstrated to IRRI scientists and management that introducing a gender perspective made a difference in research priorities and directions, as well as in identifying new topics such as glutinous rice preparation, an area that previously had not been a subject of IRRI research.

On the basis of the early results of WIRFS initiatives, the 1987 IRRI External Program Review recommended strengthening WIRFS' work at the Institute. This recommendation was endorsed by TAC. As a result IRRI obtained funding from the Ford Foundation for expanding WIRFS activities at IRRI and within the network. As of June 1990, WIRFS had sponsored more than 26 research projects. During 1988 and 1989, it organized 11 workshops and training courses at national and international levels. Funding has been obtained for many

WIRFS activities from a number of other donors including CIDA, DANIDA, IDRC, USAID, the Rockefeller Foundation, and several universities in the region. Between 1986 and 1989, WIRFS members delivered over 87 papers or presentations on their work at national and international conferences and workshops.

WIRFS' impressive record is not duplicated at any other center. Nor did any other center have a policy statement on women and gender issues when this paper was written.

A number of critical factors have enabled IRRI to develop such a policy and, more importantly, to gain the necessary consensus for approval among center staff and management, as well as among the participating national programs and governments. These factors are:

1. International legitimization for a focus on women and the use of gender analysis. The international conferences and external/international advisors have provided legitimacy and respect for WIRFS' effort in the eyes of the other IRRI members. Donor funding has also assisted in legitimizing the effort.
2. Sustained experienced WIRFS leadership. The individuals leading the program have been qualified social science researchers with experience and training in gender analysis. They have been able to provide both scientific and managerial leadership.
3. Support and protection from IRRI top management. It is no coincidence that WIRFS developed during IRRI's leadership by Dr. M.S. Swaminathan. Long committed to both gender staffing and gender analysis in research, Dr. Swaminathan provided the young WIRFS with guidance, as well as insulation during the time it needed to become established. The critical role of such 'guardian angels' during efforts to institutionalize new approaches is recognized in

development literature and was key to the acceptance of WIRFS by IRRI scientists.

4. External funding provided flexibility and autonomy. WIRFS has been successful in attracting sufficient funds from outside IRRI. This has provided the flexibility to try new approaches and new methods and to be responsive to ideas and interests from network members.
5. Substantial external exposure. WIRFS researchers have participated in a number of international conferences and workshops, thus exposing the program to the critical eyes of peers and enhancing the intellectual and methodological innovation needed to keep the program fresh and on target.
6. Strong national involvement in the program through networking and training. WIRFS has focused not only on research but has been developed around the concept of a collaborative research network. Rather than creating a new network, WIRFS took advantage of the existing IRRI-supported network on Asian rice farming systems and drew participants from it.
7. Assessment of WIRFS as part of institute-level evaluations. WIRFS has been included in the regular program and management evaluations conducted by the CGIAR and TAC. Positive assessments of WIRFS have strengthened the program and have helped maintain funding.
8. WIRFS research results show that gender makes a difference. This is perhaps the most important factor favoring WIRFS' potential for making an impact on IRRI. Explicit, well-defined examples of changes within projects in priorities, testing, technology design, and new research directions have resulted from WIRFS.

These factors have enabled the program to get started and to begin to make a difference to some of IRRI's work. In March 1990, the WIRFS program was reviewed for IRRI and the Ford Foundation by outside consultants. Several critical issues were discussed in their report.

The report was extremely positive on the impact WIRFS has had in training national level scientists in gender analysis as it applies to agricultural research. The report raised the question of the future of WIRFS leadership because one of its leaders was departing, and because the program functioned largely as a special project focused on women.

Under Swaminathan, junior scientists at IRRI, many of whom are from the Philippines, were given significant responsibilities, including the ability to travel outside the institute to participate in regional and international activities. This is unusual among the centers. The prime 'mover' for the program during the past three years has been a Philippine woman with an M.S. degree. Though a junior staff member, in the eyes of WIRFS collaborators she has represented and spoken for IRRI. However, because she is a junior staff member, within IRRI she is less able to influence senior scientists from other programs.

WIRFS has used a substantial number of Philippine women scientists to conduct WIRFS activities. With the departure in June 1990 of the senior scientist who coordinated the program, the junior scientist has continued to provide leadership and has conducted training programs throughout the region. The Ford Foundation continues to support the methodology development and training activities. Recently, the farming systems trainer moved to a senior position in the Training Division. She has integrated gender issues throughout both the farming systems and training of trainers courses and has worked with the WIRFS program in designing and conducting gender analysis training in the national programs. IRRI has supported both these efforts.

Until mid-1990 the program functioned as a special project focused on women. That is, while gender analysis was used, the program operated through special projects and

teams that were composed largely of women scientists. In June 1990, a WIRFS conference held at Puncak, Indonesia shifted the focus of the program from being one for women scientists to being one which integrated the concepts into mainstream farming systems work in the national programs. Program leaders from Indonesia, Thailand, the Philippines, Nepal, Bangladesh, and India called upon IRRI to continue to provide assistance in training their scientists in the gender analysis methodology.

WIRFS has successfully captured the 'converted' within and around IRRI and has strengthened the basic foundations of experience and results. The task of bringing IRRI's 'unconverted' scientists working in the mainstream into 'a gender way of thinking' has just begun. IRRI is seeking a technical scientist with gender expertise to provide additional leadership for IRRI's internal research program. In 1990, IRRI acknowledged the junior scientist's achievements by presenting her its annual award for major contributions to science.

CIMMYT

Until 1989 it was difficult to find any mention of gender or of women in CIMMYT annual reports or strategy documents. However, CIMMYT's 1989 strategy statement, "Toward the 21st Century," includes a section entitled, "Perspectives on Women in Agriculture." In it CIMMYT recognizes the important role women play in agriculture and the necessity to identify the technical needs of women farmers. The section also underlines the need to emphasize women's roles in production within CIMMYT's training programs and the need to include more female participants in training courses. CIMMYT's growing attention to gender issues is due largely to the results of gender-sensitive work conducted at various field sites.

In an internal CIMMYT study on the impact of the center on women, Carney (1988) notes that "the principal manner in which CIMMYT has directed assistance to women in developing countries is through its work in on-farm research, known as on-farm research with a farming systems perspec-

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tive (OFR/FSP).” Within its OFR activities CIMMYT has reached women farmers by developing methods for sensitizing researchers to the needs and circumstances of a target group of farmers, and through workshops and training programs on the effective use of the methods. The key OFR concept directly relating to women farmers is the ‘recommendation domain’, which is a “homogeneous group of farmers who share the same problems and possess similar resources for solving these problems” (Low cited in Carney, 1988).

When applied correctly, the recommendation domain concept has the potential to identify production problems for women and men farmers and to engage women in on-farm research to solve these problems. The difficulty is that too often the method is not applied in a sufficiently unbiased manner, and recommendation domains are delineated according to the problems shared by male farmers, not all farmers. However, the concept has great potential to facilitate the involvement of women farmers in technology development.

A second example comes from CIMMYT activities in Africa. CIMMYT’s Eastern and Southern Africa Economics Program operates explicitly from an on-farm research perspective and has taken the lead in the region for providing training and national capacity building in adaptive research. Since 1987 the CIMMYT program has taken steps to apply gender analysis to agricultural research. In April 1987, it sponsored a “Networkshop on Household Issues and Farming Systems Research.” The workshop included the presentation of a case study incorporating gender analysis (Chabala and Gichira, 1990), papers by participants on the application of intrahousehold analysis to trial design, farmer selection, trial analysis, and a general discussion of methodologies and issues related to the application of intrahousehold or gender analysis to on-farm research (Sutherland, 1987).

In 1989 and 1990, resource people with expertise in the application of gender analysis to agricultural research were included in Part 1 of CIMMYT’s annual basic training course in on-farm research held at the University of Zimbabwe. Participants are generally agronomists or agricultural economists from national systems who have not had formal OFR

training. The course is divided into two parts. Part 1 covers diagnosis and informal and formal surveys. Part 2 covers trial design and evaluation.

This kind of effort is a good beginning, but still leaves gender analysis more or less an add-on rather than an integral part of training. Gender as a useful and important variable needs to be incorporated throughout lectures, field exercises, and field reports.

One area which needs to be addressed more closely in future courses is how to learn about women and from women. Participants talked about the awkwardness of interviewing women either because husbands were unwilling to have their wives interviewed alone or, when interviewed, women were deferent in their husbands' presence. It was clearly a barrier to gathering gender disaggregated information on the production system, and therefore to adequate gender analysis.

Another example of a growing gender concern is highlighted in CIMMYT's OFR work in Ghana. CIMMYT and Ghanaian researchers have become aware of the unique decision-making role women play in technology choice.

A 1987 study on changing maize production practices in Ghana showed that women adopt new technologies as fast or faster than men (Tripp et al., 1987). But as Carney points out (Carney, 1988:4), the fact that women only represented 15 percent of the study's sample, and of these only 5 percent grew maize as a monocrop, has uncovered additional areas that need to be researched. In fact, the team has begun several interesting new initiatives as a result of this information. For example, work is being conducted on mixed cropping systems for maize because women farmers nearly always plant maize with other crops, such as cassava, and have been uninterested in the monocrop technology developed by the project and adopted largely by male farmers.

The project staff in Ghana have recognized that the gender of the research teams — all male — makes it difficult for women farmers to interact or collaborate in OFR work. Therefore, they are collaborating with a new Ghanaian reor-

ganization that has taken existing home economics extension agents — all female — and restructured them as the Women Farmers Extension Service. The CIMMYT project is providing OFR training to a large group of these new agricultural agents and intends to place them on field teams, like male extension workers, with the objective of collaborating more with women farmers. It is probably significant that the donor for this project is CIDA and that CIDA's project officers are insisting that its mandate regarding the incorporation of gender issues be followed in the Ghana program. However, it was evident from discussions with CIMMYT scientists in Ghana that they are strongly supportive of gender issues and that their key concern is to learn appropriate methods for including gender issues in the research process as well as including women in the on-farm trials.

These experiences from CIMMYT's on-farm research program are good examples of how gender issues can be included and can make a difference in both training and field work. One can argue that at selected field and project sites CIMMYT's research is being influenced by the results of gender analysis. However, as indicated in CIMMYT's strategy statement, concern for gender issues is confined largely to on-farm research activities and the Economics Program. As the Economics Program moves away from adaptive OFR toward applied and strategic research, it will be important to continue to incorporate gender analysis within the new research initiatives. Consideration of gender issues should be included in both the wheat and maize programs as well.

CIAT

Jackie Ashby's important pioneering efforts to develop a user orientation for research and participatory research methods at CIAT have already been discussed in this paper and are well-documented (Ashby, 1990, 1987). It is significant that Ashby's work has been supported mostly by external funding. While this has provided a great deal of flexibility, it has also contributed to the special project status of her research and to the difficulty of influencing other CIAT scien-

tists with the results of gender-sensitive research. No mention is made of the research in the last two center annual reports.

The strategy document, "CIAT in the 1990s," contains a statement that bean production in Africa is done by small farmers, mostly women, and is predominantly subsistence in nature (CIAT, 1989b). Unfortunately, there is no mention of whether this fact requires any changes in agenda or in methods of reaching farmers. No other program mentions gender or women.

Despite the failure to mention gender or women at higher levels of management, in the bean program, and to a lesser extent in the cassava program, there is increasing attention to and use of gender analysis. Breeding work on beans at headquarters has been significantly affected by Ashby's work in Colombia that has identified gender-differentiated and user-defined criteria for bean selection.

Within the Bean Program's Great Lakes Program in Eastern Africa two anthropologists have focused on women's needs in bean development. Joachim Voss, the first anthropologist with the team based in Rwanda, illuminated the fact that the majority, if not all, of the bean producers in the program's region were women. If they did not focus on women they would miss the farmers entirely.

Louise Sperling (1989), the team anthropologist, has built upon Voss's work and CIAT experiences in farmer participatory research and has designed an innovative strategy to bring farmers' criteria for bean variety selection into the breeding process at an early stage. Working with bean breeders and farmer communities, 'expert seed selectors' were chosen by their neighbors and brought to the experiment station. There they were exposed to the 'logic' of bean selection on-station, while providing information on their own selection procedures on-farm.

Over time the selectors, all women, have become a regular part of the bean selection process. The result is that decades of farmers' experience is being incorporated into the selection of new bean varieties. Scientists, for their part, are

altering field trial arrangements to facilitate farmer understanding and involvement in selection procedures. As a result, there is a higher probability that the varieties to be released will prove acceptable to the farmers they are intended to help. As Sperling says, "Farmer knowledge, combined with breeder talents, has a chance to produce something better than each expert's isolated efforts." Additionally, Rwandan and CIAT scientists, long conditioned not to view rural women as thinkers or decision makers, are gaining a new perspective on women farmers who can match the breeders at their own game on their own turf.

These CIAT examples demonstrate the value of user perspectives and gender sensitivity in the research program. However, the impact of the understanding derived from attention to gender remains at the field activities level and does not filter either up the system or to other center programs. This problem is not limited to gender analysis results but is true for much of the socioeconomic research at CIAT and at the other IARCs.

VII. Why the Gender Question is so Difficult

It is clear that it has been difficult for the CGIAR system to address gender issues. While inroads have been made, many researchers who support gender analysis feel they have not succeeded in convincing other colleagues of its usefulness. Generally, the centers' research agendas have been little informed or influenced by gender issues research. While some difficulties are center-specific, others are common to the system and create a barrier to gender sensitivity and analysis. These latter issues are discussed in this section.

1. Confusion between gender analysis and gender staffing.

There is a general misunderstanding of the difference between gender analysis and gender staffing. Gender analysis is aimed at greater efficiency in production through the use of analytical tools designed to better define who does what in the production system, and to align research and development priorities, resources, and user participation accordingly. Gen-

der analysis is not gender-specific and can and should be done by both men and women. The use of gender analysis as part of agricultural research results in a gender-sensitive approach to development.

Gender staffing, on the other hand, refers to the staffing of agricultural research entities and to revising the overwhelmingly male structure to involve equitable numbers of men and women at all levels. Training programs use gender staffing to assure that men and women have equal access and participation.

Though gender-sensitive research and development and gender staffing are related, they are not equivalent. Women are not gender experts just because of their sex. Like any other skill, gender analysis is learned. Within many IARCs, however, managers have confused the two issues and have assumed that hiring a few more women scientists will solve the gender issue problem. While the presence of more women professionals at all system levels may influence some researchers to 'see' more women farmers and decision makers in the rural sector, it does not guarantee the use of gender analysis. Managers must clarify, separate, and manage them as two issues.

2. Good gender analysis requires experienced social scientists.

Gender is a social construct and gender analysis draws on social science tools, especially from anthropology, sociology, geography, and economics. There are relatively few social scientists in the CGIAR system. Those that are there are not uniformly trained or equipped to do this type of work. In addition, the disciplinary bias of the socioeconomic divisions within the system is toward agricultural economics. Agricultural economics training does not generally address gender issues, nor does it provide training in gender analysis methodologies. In fact, the predominance of agricultural economists in the centers, and especially in on-farm research teams, probably contributes to gender blindness. This occurs through reliance on traditional household models that assume that a farm household functions as a single unit for production and consumption, that a consensus exists among household

members on the allocation of resources and benefits, and that all household members' interests and problems are identical (Cloud, 1988).

To alleviate this problem managers can include gender-experienced scientists from the other social sciences. This would expand the analytical and methodological base of the social sciences in the centers and provide the capability to conduct gender analysis. Alternatively, training existing staff and backstopping them with experienced professionals would be another solution to enhancing gender analysis capacity. Pooling analytical resources among international and national research institutions is another route to enhancing capabilities.

A key tool for enhancing a gender perspective is incorporation of a gender analysis framework in research. One reason why gender analysis frameworks are useful to agricultural researchers is that they pose a set of questions that should be asked at every decision point in the research process. The questions — who does what with what resources, who has access to or control of the resources and benefits, and who should be included in research activities — are always the same; the answers vary. Analysis of the information generated by the questions becomes part of the overall analysis of the production or food system. Practice with a gender analysis framework will make it a normal part of the inquiry process.

3. Lack of contact between scientists and women farmers.

IARC scientists generally have little contact with women farmers. Even within FSR or on-farm research programs it is rare to find consistent or extensive contact with them. Therefore, little knowledge and understanding is gained about the differences that might occur between males and females practicing agriculture in the same zone. An ISNAR study (Biggs, 1989) pointed out that the selection of farmer cooperators is the weakest methodological aspect of farmer participation. More often than not farmers are selected for convenience, not for representativeness. They tend to be wealthier and commercially oriented. They often have little

in common with women farmers in the same area. Poor implementation of the methods of farmer selection prevents adequate inclusion of women farmers and exacerbates the lack of contact with scientists despite the growing use of on-farm research approaches.

Ensuring representativeness in the selection of farmers as collaborators in the research process will lead to a rational inclusion of women farmers.

4. Geographic location of IARC headquarters influences scientists' gender sensitivity.

When a center is headquartered in an area where women either historically have had a smaller role in the production of the commodities within the center's mandate, or where women are believed to play a small role in agriculture, the beliefs and understanding of the center staff concerning gender roles in production are greatly influenced by the immediate surroundings. For example, the location of IITA in a region of Nigeria where women traditionally have not been very involved in production activities has created or reinforced the belief that women are not involved in agriculture (Goldman, 1990).

Likewise, CIMMYT's location in an area of Mexico where men historically have taken major responsibility for field tasks in agriculture has contributed to a similar bias. Carney (1990) explains that in Mexico women are becoming major decision makers in maize and wheat production. In the past, they were not. Even though migration to the U.S. on a seasonal basis was always an economic strategy used by men to augment household income, they were able to be at home to perform the major agricultural tasks. Now that seasonal migration is illegal, men can no longer return to perform these tasks and women must bear the burden of the agricultural work. Usually they use the men's remittances to purchase labor in the form of mechanization. Bound by their beliefs in the system the way it was, the research community has not perceived these changes in the production system or questioned whether it makes a difference. In the definition of problems and technology design the male is still considered head of the household and key decision maker.

This kind of 'conventional wisdom' can blind people to gender differences, even when they are confronted with them directly. In the Mexican situation above, if researchers first asked who does what in the local production system, they would discover the changes in gender roles brought on by larger political and social changes. They could then adjust research directions and priorities accordingly. If they don't ask the question they remain blinded by their beliefs in the way the system used to be, instead of seeing how it is.

5. Lack of senior scientist involvement in gender issues.

Research relating to gender issues is often done by junior staff — the post doctorals, junior scientists, research associates, and research assistants. In addition, women have been the primary actors dealing with gender issues. Because women generally work in more junior positions in the centers, the lack of senior status and involvement has created a type of second-class standard for gender issues work. This has made it difficult for those conducting gender analysis to make their results heard within the center and within the CGIAR system. Further, most of the attention to gender is given by social scientists, who also generally have less status and seniority within agricultural research.

Not only does this blind the larger research effort to gender analysis, but there is also a lack of guidance and mentoring for the scientists and researchers who do utilize it. While there are gender-sensitive male scientists within the system, few seem willing to be publicly vocal on the subject. Some simply lack experience in articulating gender issues within the agricultural research framework. Others perceive a social and even professional risk in standing up for gender issues among their peers. As long as the culture of the centers makes it risky to support gender issues, effective incorporation of gender analysis in research is unlikely.

The risk perceived in voicing gender concerns is linked to the connection of gender issues to the social sciences and, in most cases, to on-farm research. The consideration of gender in agricultural research is still not well-accepted. Resistance to doing research with direct farmer involvement

is still so strong that proponents often fear further to complicate the issue by adding the gender perspective. Thus, many of the more gender-sensitive male scientists in the system are reluctant to push the issue since they are already fighting a difficult battle just to get any farmers involved in the process at all.

6. Gender viewed as the responsibility of the NARS, not the IARCs.

As mentioned earlier, gender issues and analysis, and indeed any research directly involving farmers, is viewed by many within the CGIAR system as the responsibility of NARS, not the IARCs. While it is true that the adaptive stage of the research process should be squarely in the domain of the national programs, the technical results from strategic, and particularly from applied, research cannot be generated in isolation from the realities of farmer production systems. There is a crucial need to maintain contact with farmers to assure relevancy. If this contact is lost or mediated only through several layers of researchers, the technology released by the system may be inappropriate, or worse, totally useless. The balance of farmer and user contact necessary to research depends on the problem being addressed and on the skills of the people involved. Gender issues must be articulated in formulating the research problem as well as in designing its solution. Gender or other socioeconomic variables are irrelevant to the solution of some problems. However, for the majority of problems facing disadvantaged farmers in developing countries, the socioeconomic variables are an integral part of the problem and cannot be overlooked.

A related factor is that the CGIAR centers are the source of research methodologies for many NARS researchers. Many look to the centers for training and for the latest agricultural research innovations. The absence of a gender perspective and sensitivity, and of gender-related methods of study in the training programs offered by the CGIAR system, perpetuate the invisibility of women as a client group for NARS/IARC technology.



7. Gender issues as a special project.

The few gender-related projects and programs that exist are underfunded and/or rely on special funding. They tend not to be core funded, which makes them vulnerable to funding cutoffs. It also tends to isolate the issue as a 'special topic' rather than integrating the content and methods throughout the program. Special 'women's projects', like those at IRRI and IITA, can sometimes backfire. They bring women into the system and often produce relevant research results as long as the special funds last. Often when the funding or the project ends, there are no mechanisms in place to assure continuity in funding or direction.

There needs to be far greater mainstreaming of efforts dealing with gender issues. Mainstreaming will also help legitimize the efforts of scientists already working on the subject.

8. Lack of mechanisms to implement gender staffing goals.

While correcting the current gender imbalance in staffing patterns and training courses of the CGIAR system will not automatically achieve gender sensitivity, having more women professionals in the system is a related concern and a stated goal of many IARC directors. However, managers complain that they do not get enough women applicants for staff positions. Most agree with Richard Sawyer's comment at the 1987 ICW seminar that it is important not to sacrifice quality in favor of balancing numbers. While this is true, it may be that the centers have not been diligent enough in their searches. The men who dominate centers staffs have contact in the professional world and in their disciplinary societies primarily with other men. Over time this may change. Increasing numbers of women specializing in agricultural research with an international focus will increase the pool of females available for future staffing. In addition, as more women move into the system they will create increased interest by their presence.

Managers face a different problem with respect to training at the centers. Much of the responsibility for selecting people for training courses is in the hands of national program

leaders. Centers are reluctant to demand participants be of a particular gender. However, criteria are set for other factors such as degree level, country representation, disciplinary background, and technical responsibilities. Training managers should explore whether criteria for balancing male and female participants would really cause problems at the NARS level. It might require more time in negotiation and more discussion about participants. To accomplish this training, managers could approach the issue with NARS leaders on an informal basis. In other cases it may be useful to substitute field experience for formal education in training courses admission requirements to allow greater access to technical training even for women who have not had basic formal training due to discriminatory practices in the educational system. In the short run, quotas or similar mechanisms may be necessary. However, if regional IARC staff and collaborating national program leaders can be sensitized to the issue, it is likely that targets for increasing women's participation in training will be achieved.

Monitoring the CGIAR system's progress in including women as staff and trainees was called for in recommendations from the conferences summarized earlier. It is difficult to assess the degree of compliance with this request since most of the centers' public documents still do not report any gender disaggregated staffing or training information. However, in response to this recommendation, the CGIAR Secretariat modified the terms of reference of the management reviews of the centers to highlight this issue.

Looking at four reviews concluded in early 1990, it is worthwhile analyzing the terms of reference for the review teams and the responses contained in their reports.

The 1989 CIP EMR posed a gender-specific question. It was contained in the list of questions in the management review terms of reference under human resources and asked:

#7. Does CIP actively promote recruitment, retention and career development of women? Are there barriers to women's advancement in the center?

Both the 1989 CIAT EPR and the 1989 CIAT EMR asked similar questions. The CIP response was:

CIP has around 138 women employees of whom five are international scientists and a further five are postdoctorals. CIP has no quota for women and does not consciously monitor their number. CIP has an admirable record in this area. CIP women have chaired the Board and its Program Committee, held regular staff posts and conducted special projects in remote areas. There are no discernible obstacles to the advancement of women and, in terms of selection and work opportunities, there is equality of opportunity (p. 48).

To test the validity of this assessment, the CIP professional staff were disaggregated by gender using the staff listings in the 1988 Annual Report, the same year as the management review (see below). As can be seen, among senior management women appear only on the Board. This means that women are absent in day-to-day management and scientific leadership. Among the research scientists with a Ph.D., only 8.5 percent were women (5 of 59). Among the other research scientists, 19 percent (4 of 21) were women. While these numbers have increased since 1983, they do not substantiate the EMR team assessment of "no discernible obstacles" or "equality of opportunity". Among the scientific assistants, 35 percent are women, and in several departments the number of women assistants is close to 50 percent. In two departments (social science and training/communications) the number of women was equal to men or greater. In terms of total numbers, however, there were 48 women (or 24%) and 149 men. These numbers differ from those quoted from the EMR. It seems likely that secretarial staff may have been included in the total number of women staff EMR counted.

In the 1989 review document produced by the CIAT program evaluation team, under the section "Target groups and gender issues," no further mention of the word 'gender'

GENDER DISAGGREGATION OF THE CIP STAFF¹

Leadership	No. Women	Total No.
Senior Management	0	8
Board of Trustees (Prog. Comm.)	2	7
Research Thrusts Leaders/Co-leaders	0	20
Department Heads	0	7
Regional Leaders	0	9
Total Leadership Positions (Included in Total Below)	2	51
	(3.9%)	
Scientific and Support Staff		
Headquarters Research Scientists (PhD)	4	40
Other Headquarters Research Scientists	2	9
Regional Research Scientists (PhD)	1	19
Other Regional Research Scientists	2	12
Training and Communications	4 (1 PhD)	8 (4 PhD)
Administration	2	10
Scientific Associates	0	5
Total Research Scientists	15	103
	(14.5%)	
Scientific and Other Assistants		
Breeding/Genetics	1	11
Genetic Resources	0	2
Nematology/Entomology	4	8
Pathology	5	11
Physiology	6	14
Taxonomy	1	3
Social Science	2	4
Research Support	1	4
Regional Programs	1	14
Training and Communications	8	13
Administration	4	10
Total Assistants	33	94
	(35%)	
TOTAL	48	197
	(24%)	

¹Based on Rough Analysis of the 1988 Staff Listings: 1988 Annual Report pp. 196-200

is made. While the 'equity orientation' of CIAT in terms of limited resource farmers and consumers is applauded, no concern is raised over lack of gender disaggregation to see if there are any differences among this group. In addition to noting that the bean farmers in East Africa are women, the only further note on gender is at the end of the section where it states: "At the other end of the spectrum, at the micro-level, the Farmer Participatory Research Project is seeking ways to draw men and women into the research process in their capacities as producers, processors and consumers."

The answer given to the gender-specific question posed in the 1989 CIAT EMR addresses only part of the wider issue. It reads:

More aggressive assistance with spousal employment may also be warranted, particularly if CIAT is serious about improving the gender balance; professional women almost invariably have professional spouses. There is already a new policy permitting CIAT employment of spouses in outreach programs under specified conditions. This issue is endemic to all CGIAR centers and a concerted collaborative effort to identify solutions would probably be useful (p. 39).

The report also notes that at CIAT, internationally recruited staff includes 97 men and 11 women (10.2%). The review contains no gender breakdown by program or by discipline.

The 1990 IITA EMR included the gender-specific question in the terms of reference under human resources. The response is: "The ratio of male to female international staff is about 8:1. The ratio has shown slight improvement in recent years. Efforts to hire more female staff should continue" (p. 39).

The report contains tables with information on all human resource indicators except gender. There is no information about gender disparity or about problems with recruitment, retention, career development, efforts to attract women,

or turnover. Nor is there information on nationally hired staff regarding gender, sector, or discipline. In sum, the answer to the question by the evaluation team is incomplete.

The same can be said for the other reviews. Though it is necessary to include the question in the terms of reference for the EMRs and EPRs, and the CGIAR and TAC are to be commended for taking this initiative, asking the question is not enough. TAC and the CGIAR will have to monitor whether the review teams address the question and whether the responses are adequate. In addition, it is not sufficient just to be sure women are on the review teams. Some of these teams did include women. One had two women. It is necessary for the centers themselves to take the issue seriously and to prepare for the review by disaggregating their staff and training participants by gender. This will enable the CGIAR to monitor progress in reaching gender balance and will provide reviewers with the information necessary to make an assessment.

Restrictions on the numbers of people on review teams and the variety of qualifications that must be represented will limit the extent to which gender specialists can be placed on both EMR and EPR teams. Given the move to more strategic EPRs, however, greater attention will be paid to linkages with the national systems and their capacity to collaborate as strong partners with the centers. For this assessment it is imperative to have a member on the panel who is sensitive to the issue of NARS linkages with their resource-poor clients, and to the potential impact of technologies on gender balance in the farm household.

9. The gender information gap.

While today there is a virtual explosion of literature on gender issues in all aspects of development, the majority of center staff does not see it. One reason is that the scientists themselves have fairly specialized disciplinary interests and are assigned specific tasks. Their fieldwork and travel schedules do not often allow exploration of related research fields, even if they are interested. Access to literature is also a problem since center libraries are also focused on their specific mandates. It is not economically feasible for the centers to expand

their collections to include the whole of gender literature, but selective inclusion of relevant materials would be an improvement. Information specialists could be another resource on this topic by learning about, and providing access to, literature on gender issues at local and international levels.

Presentation of information in CGIAR system publications could also be improved. Though centers documents contain many photographs showing women as farmers and consumers, few portray women as scientists and research collaborators, or in significant numbers in training courses. Again, recognizing the importance of the example that the centers set in international agriculture, improvements could and should be made in the visual presentation of the importance of women in the system's work.

VIII. Next Steps

This section outlines five next steps to be taken to overcome the difficulties the system has in dealing with gender, and to finally achieve implementation of the recommendations already mentioned.

Step 1. CGIAR system donors must exert pressure on the system to adopt an explicit gender perspective and to incorporate gender analysis in the research agenda. This pressure cannot be limited to an annual call for ad hoc reporting at the ICW. Many, perhaps most, of the major CGIAR system donors have already implemented gender or WID policies that are routinely applied to other development efforts. Donors must reconsider these policies and devise appropriate means to apply them to the CGIAR system.

Step 2. TAC and the CGIAR have taken a critical first step by adding questions on women and gender issues to the terms of reference for the regular centers' review process (the EMR and the EPR). However, this is not enough. Review teams must be trained in how to look for information to answer these questions. They must be encouraged to address all the questions, not just the part on "how many women are employed." This means looking at two aspects of gender.

The first is the use of gender as an analytical tool in the description of problems, in the design and testing of new technology, and in the examination of impact on clients and beneficiaries. In this sense, gender is a part of the research process and evaluators must look for its appropriate application.

The second aspect deals with staffing. Review teams must look at the gender of the centers staff to see how many women and men are employed at each level and within the various programs.

Centers themselves should assist the review teams in this process by annually providing a gender disaggregated accounting of staff at all levels, by covering pragmatic themes, and by summarizing gender-related research and results. Between the regular reviews, center progress on these issues can be monitored by reviewing annual reports, research reports, planning documents, and other accounts of center activities.

Step 3. If centers are to take gender issues seriously and incorporate gender analysis into relevant parts of their research and programming, center staff need to learn how to do this. It is clear from the review of the centers' experience to date that only a few scientists, mostly social scientists, use gender analysis as a tool in their work. Those who do came to the centers having learned these skills elsewhere. Despite the literature on gender issues, the centers have not adapted their methods to include gender analysis. Simply reading or hearing about gender issues is not sufficient to make a change in the way research is done. Training is needed to encourage this change.

Training needs to be carried out on two tracks — one for people currently being trained by the centers, and one for people already working at the centers. With respect to the first group, the training curriculum offered by the centers for national program researchers and practitioners needs to be reviewed and revised for gender content. This does not mean the creation of a special course on gender, but rather the careful incorporation of gender issues and methods into

existing, appropriate courses. Obviously, there is no need for gender content in the courses dealing with such specialized technology as virus testing procedures.

However, courses dealing with user- or client-oriented research methods, such as processing and storage systems, small-scale machinery, pest management, seed management, and on-farm research in general, can be enhanced by including gender issues and methods. The CIMMYT example from East Africa described earlier, or the work done at IRRI to revise the farming systems course curriculum (Frio, 1990), are useful models for other centers. In both cases the courses were not necessarily expanded, but alternate materials and exercises were included that draw participants' attention to male and female roles in farming and to gender analysis tools for technology design and testing. Relevant training materials and literature already exist for these purposes. The next step necessary is to incorporate them through the normal channels of training curriculum review and revision.

Training the center staff itself is also critical. While it is not necessary for every center staff scientist or research assistant to be an expert in gender analysis, it is important that the center as a whole adopt a positive attitude toward gender. Providing training of all staff, from top to bottom, would be a significant step toward revising the gender bias that exists in agricultural research institutions—centers included—and in creating a climate in which gender issues can be dealt with on a rational, analytical level, rather than through the haze of misperceptions and prejudice.

I would propose three types of gender issues training for the centers:

Type 1. Sensitization and awareness;

Type 2. Gender analysis methods; and

Type 3. Training of trainers.

Type 1. Sensitization and awareness. This is a 'starter' course and is targeted at the entire staff. The purpose is to

promote general awareness and understanding of the difference between sex and gender, the reasons why gender issues are important in agricultural research, and the framework and basic tools used in gender analysis. The training will give center staff a common set of terms and definitions — a vocabulary to use in discussing gender issues and analysis. This will help correct the misconceptions and confusion about the differences between gender analysis and gender staffing.

The content for a Type 1 course can be drawn from existing gender training materials (see for examples Overholt et al., 1985; Feldstein et al., 1989; Feldstein and Poats, 1990), but should be complemented with examples from the commodities and areas of each center's concern. The course should contain hands-on exercises to give each participant a chance to handle gender data and experiment with analysis and interpretation. Practical exercises in applying course lessons to each staff member's own job responsibilities should be the final part of the course.

Type 1 training should be conducted first among all centers senior management and leaders, without exception. Training must start at the top to show that the issues are important. Then training should proceed in groups of 25 to 30, mixing senior scientists and research staff in interdisciplinary fashion.

It is suggested that course trainers be drawn from outside the center so all center members can participate equally. However, the trainers should be familiar with the centers and their activities. It might be possible for existing gender-experienced researchers from other centers to participate as trainers or resource people.

Experience in conducting this same type of training in a wide range of institutions for similar purposes strongly suggests that a minimum of one-and-a-half days should be allocated for the training session. To keep down costs, it would be wise to schedule a series of courses at a time when staff are gathered at headquarters. Follow-up monitoring at 6 and 12

months should be designed to gauge impact on staff members' work.

Many centers are conducting a number of other staff training programs dealing with such topics as management, research planning, and resource allocation. Gender tends to get short shrift in the face of these other priorities. Donors, CGIAR, TAC, and center directors will have to determine just where their commitment lies on user issues as a whole, and gender specifically, and then allocate the necessary resources to get the job done.

Type 2. Gender analysis methods. Following Type 1 training, those people with research responsibilities that draw them into close contact with technology users should be selected for more thorough training in gender analysis methods. Gender-experienced center staff can be both valuable resources and facilitators for such training or, depending on individual capabilities, can be trainers themselves. This training course would be more explicitly focused on data gathering and analysis methodologies, interpretation skills, and field practice. Field practicum work is an essential part of such a course because it provides the necessary experience in doing research using a new gender perspective.

The course content would be similar to the gender content described above for the first group. However, since the participating researchers would already be experienced in the other content areas, the gender methods alone would be the focus. Between three and five days are usually needed for such training.

Including research collaborators from projects with NARS may be an effective way to promote a team approach to addressing gender issues in new or ongoing projects. Type 2 courses can be designed to initiate field or project work to include gender issues. In essence the practicum launches participants in applying gender tools and in using the gender analysis framework on an actual research problem. Tying training to such work can enhance both the relevance and speed with which the tools become part of the normal way of doing research.

Type 3. Training of trainers. Sustaining the gender perspective within the centers' training program will be the task of center trainers and training staff. Trainers should participate in Type 1 and 2 training courses and then move to a Type 3 course to gain additional experience and to focus on additional ideas, options, and approaches, and to get practice doing gender issues training. Centers may wish to combine forces in training their trainers to be able to incorporate gender issues within their own training programs by holding Type 3 courses for all trainers at once.

A Type 3 course should focus on practice with a variety of already existing training materials that have proved useful in teaching gender analysis tools to researchers and development workers in other settings. Trainers should also be exposed to new types of training materials and approaches that have been particularly effective in dealing with gender issues that might not already be in their own repertoire. Finally, trainers should be given practice and guidance in developing new materials specific to their technical mandates for teaching gender issues in their own centers.

The duration of this type of training depends on trainers' skills and on the number of people in the course. The important thing is to give the trainer-participants enough time to practice training on gender issues, and to design gender components for other training courses so they will be able to carry on this work within the centers. Experienced trainers who have done gender training themselves should be sought as course facilitators. The experienced trainers can serve as mentors to the trainer-participants as they begin training in their respective centers.

Taken together, these three types of training will develop the centers' capacity to undertake research with a gender perspective and to sustain that perspective with new members of their own staff and among the trainees from national programs.

Step 4. Centers should use existing networks such as those already established for collaborative activity on commodity research, to develop common themes and research method-



ologies for dealing with gender issues. There are several advantages of doing this. First, networks bring a vitality to research by engaging a number of researchers in different socioeconomic and agroecological settings to focus attention on similar issues and using similar methodological approaches. The networking approach would bring greater innovation to gender analysis methodologies, and would provide a range of examples that demonstrate why and how gender-sensitive research can make a difference to the development and adoption of technology.

The networking approach applied to gender issues will also help to reinforce the linkage between the IARCs and the NARS. Placing gender issues and analysis within a network helps to integrate the gender perspective into the larger research framework.

Step 5. The CGIAR should develop a strategy paper for implementing existing recommendations. Each center then needs to develop its own strategy statement, similar to IRRI's, and to translate it into a workplan and incorporate it into a plan for resource allocation.

These five steps will enhance the capacity of the centers, and the CGIAR system as a whole, to employ gender analysis as a normal, pragmatic way of conducting good agricultural research, and to develop useful technologies for resource-poor farmers.

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