Report of a Seminar

Women and Agricultural Technology: Relevance for Research

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Women and Potatoes in Developing Country Food Systems: The CIP Experience

by

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I. INTRODUCTION

A quick visit to any village in the Third World should be sufficient to convince even the most skeptical that women play important roles in agricultural production and food utilization. From selection and preservation of seeds to feeding the family from the harvest, women --complemented by the work of men and children-- are key actors in the food system. The challenge now is to go beyond this realization and take positive steps to involve women in agricultural research and development, not only at the farm level but also in national programs and international organizations. We have perhaps spent too much time pontificating about "technology", on the one hand, and about "women", on the other, and too little time actively linking up the two in laboratories, on experiment stations, in fields and stores, and in kitchens.

In this paper, I would like to present a summary of how CIP has dealt with the challenge of linking women and technology. I will discuss how far we have come and how far we would like to go. CIP has addressed the women's question at three levels of impact:

1) farm household;
2) technical training of national program personnel; and
3) management and scientific staff of CIP itself.

II. FARM HOUSEHOLD: WOMEN AS USERS OF TECHNOLOGY

In 1982 CIP decided to adopt a "Food Systems" Perspective, instead of only a production focused Farming Systems Research (FSR) methodology. This came about in part as a result of a series of farm and market-level studies directed by women investigators at CIP, mainly women from developing countries (see attached list). Our research empirically demonstrated that women were not only important elements in field production of potatoes but specialists in seed selection and procurement, harvesting, local marketing, storage, processing and - obviously - preparation and consumption. This FSR perspective has tended to ignore most of the important activities after harvest when women play important roles.*

Two additional aspects also brought to the forefront the involvement of women in potato research at CIP.

First, CIP's technology generation approach called "Farmer-Back-to-Farmer" posits that applied research must begin with an understanding of the farmer's circumstance and be brought full circle back to the farmers evaluation of the technology. According to this adaptive research model, CIP scientists and our interdisciplinary teams should be in close touch with farm-level reality. If this reality involves women as technology

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* The Food Systems Research thrust of CIP crosscuts the nine technical thrusts in order to guarantee interdisciplinary exchange.

users, as it does in some cases more than others, then research must account for the female factor in design, transfer, and monitoring of impact. I will return in a moment with examples.

Second, CIP has had a strong, positive input from anthropologists and sociologists. This has had two consequences:

1) helps us understand how CIP technologies fit the real lives and conditions of rural people, including women; and
2) brought women scientists to our staff, given that women are represented in greater numbers in anthropology and sociology than in technical disciplines or economics.

Table 1 gives a sampling of these research projects which range from studying women's participation in production to the final storage or disposition of the crop. How have these studies been translated into concrete action affecting the design, generation, and transfer of technology? A few examples are in order.

1. Potato Consumption Research

Beginning in 1979, a woman anthropologist began a 4-year, 7-country comparative study of potato consumption and utilization. By the nature of the research, women farmers and consumers supplied the bulk of the information. These consumption studies helped CIP better understand consumer preferences and to pinpoint areas where the potato could play a crucial role in solving malnutrition. After the data were presented in papers, conference, and CIP's Internal Review, biological scientists --especially breeders-- were stimulated to rethink their ideas about the importance of consumer preferences for color, taste, shape, and cooking quality. The consumption study also emphasized the nutritional importance of dry matter content, a preference now being considered in selection of germplasm. As a result of this study, we feel this approach of working from women's kitchen pots to our laboratories helps streamline our research process.

2. Storage and Processing Technology

CIP's source research is organized around ten thrusts, one of which is devoted to post-harvest technology. By establishing a post-harvest program, CIP has recognized the importance not only of production but of post-harvest constraints. Post-harvest also happens to be one of the areas where women pay important roles, especially in household-level storage and processing as well as local marketing. Therefore, several research projects in the post-harvest area have focused on women. One project focused on women marketers in the Mantaro Valley, another on Andean village-level processing and one presently underway involves inquiring into women's roles in traditional potato storage in rural areas near Cuzco. Another post-harvest study showed that labor costs mainly affecting women and children in desprouting seed potatoes had to be taken into consideration in the design of a new technology called diffused light storage.

The above projects have been conducted within the framework of our post-harvest interdisciplinary team and the practical pay-off of this and

Table 1. Selected research projects including the Role of Women in Potato Food Systems*

Investigator	Profession	Title of Project	Dates	Funding
Elsa Bruno	Sociologist	Women Marketers in the Mantaro Valley, Peru	1978-79	CIP/IDRC
Susan Poats	Anthropologist	Potato Consumption and Utilization in Developing Countries	1979-83	CIP
Marisela Benavides	Sociologist	Socioeconomic Conditions, Food Habits, and Formulated Food Programs in Lima's slums	1983	CIP
Ann Swindale	Economist	The Role of Women and Potatoes in the Production system of Cruz Pampa, Peru	1983	CIP
Vera Niñez	Anthropologist/ nutrition education	Small-scale Household Food Production	1983-84	United Nations University/CIP
Ella Schmidt	Anthropologist	Household Strategies in Consumer Potato Storage: Cuzco, Peru	1984	CIP
Angelique Haugerud	Anthropologist	Rwandan Farming Systems, emphasizing the potato utilization of potato germplasm: Rwanda	1984	Rockefeller Foundation/CIP

*These projects represent those which involve women as a crucial analytical unit. Many other projects, such as the IDRC-funded Mantaro Valley Project, were sensitive to the role of women but did not stress this aspect.

other research has been the transfer of a new storage system to over 3,500 developing country farmers. Many of the managers of those 3,500 stores are women. In Peru, a women's cooperative built a large store, while in Kenya, the national program has worked specifically with a women's group.

A similar post-harvest project involved potato processing. Studies on the requirements of women laborers, etc. has redirected and reversed research directions in processing. Recently, results from a study of food habits and formulated food programs in Lima's slums was incorporated into a processing project involving a potato-based food mix aimed at the urban poor.

3. Seed Production and Potato Production by Non-Traditional Means

The needs as well as the special skills of women have been considered in CIP's research on true seed, rapid multiplication for seed production, and new methods of potato production. On Mindanao, Philippines, CIP scientists have given training to daughters of farm families in the techniques of rapid potato multiplication. Mindanao has a problem with virus-infected potato seed and our low-cost rapid multiplication technique can help overcome this production constraint. The farm girls returned to their families with a package of materials required to multiply virus free seed. This is an excellent example of how CIP links women and improved agricultural technology.

On the coast of Peru, we purposely conduct true seed on-farm experiments with women, since seed bed preparation, planting, harvesting and transplanting in this vegetable producing zone are normally under female management. We are attempting as well as to calculate future labor costs and impacts of this new technology to make sure it will not be detrimental to future users.

CIP is also concerned in exploring means to produce potatoes in household or home gardens which are production units normally under female management. Under a special grant from the United Nations University, a visiting researcher is conducting a study on home gardens in 4 Peruvian zones as well as experimenting with model gardens involving women's cooperation.

The above examples of linking research involving women and CIP technology are only selected examples. My point is that CIP has sought to broaden the relevant themes in agricultural research by establishing its "Food Systems" thrust. By including areas beyond field production such as storage, processing, gardening, and marketing, the role of women and their technological needs become more relevant.

III. NATIONAL PROGRAMS: TRAINING AND BACKSTOPPING WOMEN AS TECHNICAL RESEARCHERS.

Although many of the research projects mentioned above were carried out within national programs, it is in the area of specialized training that CIP has a particular comparative advantage. Farm-level research must be accompanied by training at the national level.

Individuals trained by CIP are selected by national programs, not CIP, and we cannot demand that national programs establish a quota system. However, in our specialized training, data analyzed to date shows that 25% of trainees have been women. Much of this training has involved laboratory research in such highly specialized areas as tissue culture, rapid multiplication, entomology, virus detection, etc. Three women in India and two in the Philippines are now working on advanced degrees with CIP support. In PRECODEPA, a Central American and Caribbean potato network, set up to share research and technology, a woman is leader of the tuber moth research and control project. Tuber moth is the major insect pest affecting potato production in the Third World.

IV. INTERNATIONAL POTATO CENTER: WOMEN IN CIP's MANAGEMENT AND SCIENTIFIC STAFF

Involving women as fully participating actors in the decision-making process at the level of management has also taken place at CIP. This insures incorporation of women's perspective during the planning stages of our program, not as a politically convenient afterthought. CIP has been the only CGIAR center to date to have a woman as chairperson of the Board of Trustees. The present chairperson of CIP's Program Committee, which determines the directions of our scientific effort, is also a women.

In 1982 a professional women's group was formed at CIP. The founding members were made up of 4 international female staff members and 7 Peruvian technicians who shared a mutual interest in the understanding of women's roles in potato food systems. As Director-General, I formally recognized and encouraged this group which now meets monthly. The Women's Professional Group sponsors a monthly seminar which is open to all CIP staff. The group also is collecting publications pertaining to women in agriculture and especially on women and potatoes for inclusion in the CIP library. Additionally, the group meets whenever possible with CIP management, including members of the Board of Trustees or the Program Committee, to present their views.

V. CONCLUSIONS

In our enthusiasm for "Women in Agriculture" it would be a mistake in my opinion to isolate women from the primary production units such as families or communities of which they are a part. On the other hand, to consciously or subconsciously ignore women as agriculturists is an oversight which can only return to haunt us in the future.

In this paper, I have pointed to three levels of consideration for international centers as they seek to include women: farm household level, national programs, and international agricultural organizations. At each level, however, it is no longer sufficient to simply talk about the "need" but rather to get on with the task of doing something about linking women and technology generation and use. While at CIP we have much more to do, we feel we are reaching an action state, not simply a talking stage. And the former is what development is all about.