

Role of Women in Agricultural Sector

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Abstract—*Women play a crucial role in all farm-related activities from land preparation to marketing. They contribute a higher proportion of labor in agricultural sector than men. However, they are not active in decision-making. This research note discusses the impact of Green Revolution and mechanization on farmwomen in India. It stresses the need for a new agricultural research and extension agenda, which integrates gender analysis into the process of technology generation and dissemination. It also comes up with future strategies to make women a more active part of important farm decisions both at the household and legislature level. This research note emphasizes the importance of balancing agricultural research systems, extension education, and policy-making bodies to attain women empowerment in agriculture.*

Keywords: *Farmwomen, agriculture, globalization, gender, extension.*

1. INTRODUCTION

The Indian Green Revolution of the 1960s and 1970s, with its package of improved seeds, farm technology, better irrigation, and chemical fertilizers, was highly successful in meeting its primary objective of increasing crop yields and augmenting food supply. However, the Green Revolution as a development approach has not necessarily translated into benefits for the lower socioeconomic strata, particularly the rural poor and farm women, in terms of greater food security or greater economic opportunity and well-being (Bharadwaj, Satyavathi, Brahmanand, & Verma, 1999). It has increased the need for cash incomes in rural households to cover the costs of technological inputs which has forced women to work as agricultural laborers, increased the need for unpaid female labor for farming tasks, thereby augmenting women's already high labor burden, and has displaced women's wage-earning opportunities through mechanization.

In Asia, for example, mechanization packages introduced as part of irrigation schemes provoked changes in the organization of farm work, often replacing female labor with male labor. As a result, women's key role in achieving food security through food crop production and selection has often been bypassed. Neglecting women as agricultural producers and resource managers hinders the attainment of food security goals. Thus, to improve and support sustainable agricultural

production in developing countries, it is important to place food crops and animals that are usually grown or raised by women high on the research agenda.

While it is often argued that agricultural technologies are gender-neutral, it is important to note that they are not resource-neutral, implying socioeconomic considerations in technology generation and transfer. To be viable, technology has to be ecologically sound and socially just; in other words, it should be responsive to different interests, needs, resources, involvement, outlook, and socio-cultural circumstances. Hence, it is necessary that scientists, planners, administrators, extension workers, and development workers be sensitive to these issues. It is not only that farm women engage themselves in a variety of activities; they also contribute to the family income through their wage earnings, which form a major part of the incomes of poor households. Despite their contributions to agriculture, they have long been taken for granted, been ignored, and remain "invisible farmers."

Women have played and continue to play a vital role in every sphere of agricultural activity. Operations that involve less physical labor and more drudgery, such as weeding, are left to women, and women under-take these tasks in addition to their primary function as housekeepers and home makers. Women work harder and for longer hours than men. Most importantly, they also work on more tasks than men. Therefore, for an economically viable and ecologically sustainable agriculture, the involvement of women in the process of modernization of farming practices is a must.

In developed countries, agriculture is managed by a small number of men because it is mechanized; except Japan, where mechanized operations are handled by women. Although opportunities and work may change, women continue to earn a substantial portion of the family income. They continue to dominate food processing industries, backyard livestock, and vegetable production. Agricultural modernization in India appears to have had mixed effects on women in small-cultivator house-holds. For many, the financial intensiveness of adopting the High Yield Variety (HYV) package has increased the need for cash income, which either forces women to work as agricultural laborers to supplement the

family income or increases their work in farming activities to avoid paying laborers. In households that have benefited from the technology package, women have been able to withdraw from agricultural labor, though this withdrawal has often translated into heavier work in the household (for example, cooking for hired laborers) rather than leisure or education.

In India, about 74 percent of the entire female workforce is engaged in agricultural operations, but the nature and extent of women's involvement in agricultural operations varies greatly from region to region. Further, male farm workers are relatively free during off-season; however, farm women work during these periods too.

The challenge to the sustainability of a production system lies in integrating technology, work, and resources (financial and social) effectively with gender so that both women and men can play an active role in improving the productivity, profitability, stability, and sustainability of major farming systems (Brahmanand, Srinivasa, Singandhupe, Reddy, & Bharadwaj, 2000). This calls for various issues involved and approaches needed to remove gender inequity and increase the participation of farm women. At the same time, as they care for their children, manage family nutrition, and seek alternate sources of income, rural women in most parts of the developing world carry a majority of the responsibility for the production of food for their families. For household subsistence as well as for the market, they produce, gather, and process a wide variety of food.

The loss of biodiversity in agriculture is the key threat to food security and sustainability. The diversity in food, feed, fish, and animal stocks has narrowed down alarmingly. In rural India, it is women who conserve biodiversity on farm as well as *ex situ* through various rituals. The role of women as custodians of agriculture and livestock still cannot be ruled out. For farm women, biodiversity manifests in both farm plants and their wild relatives. Their extensive knowledge of wild plants, leaves, berries, nuts, seeds, spices, and condiments required for food preparation and preservation is exhaustive (Ramprasad, 1999). Rituals and ceremonies in various parts of the country show this close relationship. Be it the *lohri* (harvest festival) of Punjab or *navadhanya puja* (worship of nine cereals) in southern India, both emphasize the role of women in bio-diversity preservation. A study in Thailand recorded 230 different species in 60 home gardens, many of which were saved from the cleared forests nearby. These were collected and preserved by Thai women for homestead gardening (FAO, 2003a, 2003b).

2. APPROACHES

Rural women are rarely considered the primary clients of agricultural research and development programs, or users of improved technology. Technical training and extension programs are almost exclusively targeted at men, thereby denying women an opportunity to improve their skills and access new channels of communication and state-sponsored

support services. Moreover, when fed through traditional systems that limit women's access to resources and impose a gendered division of labor that allocates to women the most tedious, labor-intensive, and poorly rewarded work, the introduction of technology has the tendency to increase the labor burden of some of the poorest rural women without necessarily increasing their gains. It is clear from an examination of gender-related impacts of technological change in agriculture that one needs to bear in mind the intra-household allocations of labor, income, and access to land as factors constraining women or affecting their ability to benefit from change.

To design technologies that match the realities experienced by the majority of poor producers in non-irrigated, environmentally fragile areas, closing the gap between scientists' priorities and those of women farmers will need to be an essential strategy for a more equitable and sustainable Green Revolution. This can be brought about by creating channels of communication through participatory research and extension through which farmers can signal their technical requirements to breeders, and through which breeders can learn from experienced farmers about the optimal management of local varieties under restrictive environmental conditions.

Janice Jiggins (1986), in her report "Gender-related Impacts and the Work of the International Agricultural Research Centres" for the World Bank, recommends that women farmers be recognized as a constituency for agricultural research and their knowledge about indigenous varieties, multiple uses, and processing techniques be recorded and used in research. Sensitization is required toward the physical working capacity of farm women, use of anthropometric information, religious and social beliefs, socioeconomic status, participation rate, drudgery involved, overlapping jobs, and occupational health hazards. Bharadwaj et al. (1999) suggest alternative employment during the lean season, labor-saving during the peak season, and technology specifically designed for women-managed farms.

In spite of the sensitivity of researchers and extension personnel to gender issues in agriculture, they often focus their attention on male members of the household. The main objectives of generating or improving technology are not only to increase women's employment opportunities and efficiency, or to decrease drudgery, but also to provide both social- and gender-based equity, and enable farm women to participate equally in decision-making processes. Research into women's indigenous technical knowledge and improvisation of their technology and skills, remodeling existing technology to suit women's specific needs, reorients current research to address women's unmet needs.

3. HOUSEHOLD TECHNOLOGIES FOR FARM WOMEN

Women's increased workloads in agricultural tasks, combined with dwindling natural resources, mean that they often have

less time to meet other household needs. Although the amount of labor and resources required for maintenance of the household is tremendous, very little research has gone into developing techniques for gathering fuel and water or for postharvest activities such as food processing and preparation. The lack of women-specific technologies constrains their ability to produce enough food, earn an adequate income, ensure household maintenance, and care for family members. This situation has led to changes in cooking habits and the preparation of fewer, less nutritious meals. In some instances, child malnutrition has increased, as nutritional security often depends upon the availability of nonfood resources such as child and health care, clean water, and fuel supplies.

As women's needs and priorities are excluded from the research agenda, they are often affected by the unintended side-effects of modern technologies introduced for the benefit of others. Experience has shown that technology development and dissemination is not gender-neutral, and can have a devastating impact on women's access to resources and income-generating activities as well as on their control over their own labor.

If farm women have to adopt new technologies at the farm, they should be assisted in liberating themselves from the drudgery of house-hold work. Technological innovations to reduce time and labor on household work are needed. The most hazardous and time-consuming tasks of rural women are collecting fuel wood and its use in a smoke-filled kitchen. Introduction and popularization of technological innovations like thermal-efficient cook stoves, biogas, and solar stoves could help. Further development of low-cost housing technology to provide comfortable housing is also essential. Use of alternate income-generation technologies like household-level food processing, rural and cottage industries have the potential to supplement family income. Water is scarce in most Indian villages. Popularization of water harvesting structures and water conservation, community afforestation/reforestation will not only help conserve natural resources but also generate employment.

4. TRAINING NEEDS OF FARM WOMEN

For quick adoption of technology by farm women, properly oriented training programs, provision of credit, inputs and facilities, and effective dissemination of information are essential. Exact training needs of different categories of women should be identified. There is a need for training women in entrepreneurial and operational skills. One of the things generally overlooked is that change agents are mostly men, which restricts free participation and discussion by women. Encouraging women scientists and trainers, and identifying more women farmers as contact farmers and resource persons in villages would not only make the training more acceptable but also more effective. A two-way dialogue between extension personnel and women farmers needs to be encouraged. To be empowered, women have to be made self-

reliant and free from discrimination, exploitation, and oppression. This could be achieved through gender-sensitive planning, which takes into consideration the impact of policies and programs on women, and is sympathetic to their needs.

5. PRODUCTION RESOURCES FOR FARM WOMEN

Farm women's access to production resources is restricted. Access to credit is difficult, since most women are not asset holders and do not own property, which is a prerequisite for lending agencies. Thus, access to one of the most important factors of production, such as capital, is denied. Agencies like National Bank for Agriculture and Rural Development (NABARD), banks, cooperative societies, and market yards could easily remedy this situation. Women's cooperatives should be revitalized with an increased focus on entrepreneurship. Women's active role in the decision-making process is not only warranted but essential. Farm information and communication support should highlight farm women. Unless socially sound technological packages are coupled with appropriate services and policies, the fruits of scientific work will not automatically accrue either to women or men.

6. INNOVATIVE STRATEGIES FOR THE FUTURE

Agricultural research and technology should pay more attention to meeting farm women's needs. This calls for reorientation of technology development not only toward the agro-climatic region but also toward the end user. New approaches to increase women's involvement in agricultural research are emerging in national and international institutions such as International Rice Research Institute (IRRI), Food and Agriculture Organization (FAO), United Nations Development Program (UNDP), International Institute of Tropical Agriculture (IITA), Indian Council of Agricultural Research (ICAR), and Integrated Tribal Development Agency (ITDA). These seek not only to benefit women but also to benefit from them, especially in the areas of crop production and biodiversity. In Peru, for example, the International Potato Centre (CIP) is testing and screening staple food crops grown by women in sub-Saharan Africa, such as sweet potato, to breed early maturing, high-yielding varieties with some degree of drought tolerance. These crops are often used by women during famine and are eaten before the main harvest or when the staple harvest is poor (FAO, 2003a, 2003b).

In Côte d'Ivoire, the West Africa Rice Development Association (WARDA) has been conducting surveys to identify the preferences of women and men farmers in adopting improved rice varieties. While men prefer short-stature high-yielding varieties, women are reluctant to grow these varieties because of the difficulties in harvesting them while carrying infants on their back. As this constraint may lead women farmers to reject such varieties, WARDA has increasingly shifted its emphasis toward the development of medium- to tall-stature varieties (FAO, 2003a, 2003b).

Technology cannot remain in isolation nor create cultural shock. Science as a magic wand alone cannot remove these gender inequities. Farm women are confronted with the triple burden of farm work, house-hold duties, and child rearing. There is an urgent need for a new agri-cultural research and extension agenda that integrates gender analysis into the technology generation and dissemination process. Gender equity should form an important variable in the holistic analysis of farming systems in future.

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7. CONCLUSION

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Through their daily activities, experience, and knowledge, women have a major role in agriculture and rural livelihoods. However, at all levels of policy planning, rural women are ignored and hampered by restricted rights to the resources they rely on to meet their needs. The autonomy provided by the law is merely statutory or symbolic, and rarely seen in real life. Though some improvements by way of reserving seats for women in panchayats and local governance have been achieved, there is still some distance to go before women in the rural sector can truly be considered "empowered."

It is the concern, commitment, and collective action of agricultural research systems and policy makers that can empower rural women. These when combined with scientific and technological empowerment may yet usher in a true agrarian revolution.

REFERENCES

- [1] Bharadwaj, Ch., Satyavathi, C. Tara, Brahmanand, P.S., & Verma, Mahender K. (1999, November 13–19). Agricultural sustainability in the 21st century. *Employment News*, 24(33), 1–2.
- [2] Brahmanand, S.P., Singandhupe, R.B., Reddy, G.P., & Bharadwaj, Ch. (2000). Agronomic strategies for an evergreen revolution. *Yojana*, 44(3), 21–25.
- [3] FAO. (2003a). *FAO Focus: Women and the Green Revolution*. Rome, Italy: Food and Agriculture Organization.
- [4] FAO. (2003b). *FAO Focus: Employment consequences of technological change in agriculture*. Rome, Italy: Food and Agriculture Organization.
- [5] Jiggins, Janice. (1986). *Gender-related impacts and the work of the international agricultural research centres*. Washington, DC: World Bank Report.
- [6] Ramprasad, Vanaja. (1999, October). Women and biodiversity conservation. *COMPAS Newsletter*, 1(October 2), 24–25.