

## **Generating Food Security in the Year 2020: Women as Producers, Gatekeepers, and Shock Absorbers**

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Meeting world food needs in the year 2020 will depend even more than it does now on the capabilities and resources of women. Women are responsible for generating food security for their families in many developing countries, particularly in Sub-Saharan Africa. Women not only process, purchase, and prepare food, but they also play a significant role in national agricultural production, producing both food and cash crops. Population growth, urbanization, and the limited potential for increasing production through the expansion of cultivated area imply that, for food needs to be met in the future, yields will have to increase. Agricultural research continues to develop new varieties with higher yields and increased tolerance to unfavorable environmental conditions, but an untapped source of productivity gains could lie in addressing gender disparities in agriculture. This brief examines the key roles that women play in maintaining the three pillars of food security--food production, food access, and food utilization--and it looks at how strengthening these pillars through policies that enhance women's abilities and resources provides a solution to meeting world food needs in the year 2020.

### **Women as Food Producers**

The sustainable production of food is the first pillar of food security. Millions of women work as farmers, farm workers, and natural resource managers. In doing so they contribute to national agricultural output, maintenance of the environment, and family food security. Women account for 70 to 80 percent of household food production in Sub-Saharan Africa, 65 percent in Asia, and 45 percent in Latin America and the Caribbean. They achieve this despite unequal access to land, to inputs such as improved seeds and fertilizer, and to information.

Women farmers have shown that they can be experts in their own domain. For example, scientists at the Rwandan Agricultural Research Institute (ISAR) and the International Center for Tropical Agriculture (CIAT) in Colombia collaborated with local women farmers in an attempt to breed improved bean varieties. Formerly, the breeders' success at predicting the 2 or 3 bean varieties that displayed most potential under actual growing conditions resulted in mildly successful increases in bean productivity. In this collaboration, the women farmers were invited to examine more than 20 bean varieties at the research station and take home and grow the 2 or 3 they thought most promising. The selections of the women farmers substantially outperformed the selections of the bean breeders. Similar results have come from India and the Philippines, demonstrating that a vast reservoir of expert human capital remains largely untapped: few women are agricultural extension agents, and agricultural research and extension institutions rarely seek the expertise of local women farmers.

Studies that demonstrate lower yields from plots of land controlled by women than from those controlled by men may contribute to the idea that women lack farming expertise. Other studies, however, show that these lower yields are usually the result of lower use of labor and fertilizer per acre rather than managerial and technical inefficiency. Unequal rights and obligations within the household, as well as limited time and financial resources, pose a greater constraint to women. Given equal access to resources and human capital, women farmers can achieve equal or even, as some studies show, significantly higher yields than men. Including women in the evaluation of new technologies is an excellent way of efficiently diffusing technology since women are likely to share their knowledge with other women farmers, whereas male farmers are reluctant to impart such information to women.

Laws governing women's rights to land vary widely. Some religious laws forbid female landownership. Even when civil law gives women the right to inherit land, local custom may rule otherwise. In Sub-Saharan Africa, where women have prime responsibility for food production, they are generally limited to user (or usufruct) rights to land, and then only with the consent of a male relative. Women tend to be allocated poorer land, whose quality deteriorates even further as it is intensively cultivated. Some resettlement and irrigation projects have actually eroded women's rights to land by providing formal titles only to men. This insecurity of tenure reduces the likelihood that women will invest much time and many resources in usufruct land or adopt environmentally sustainable farming practices.

The weakness of women's land rights also results in an inability to use land as collateral to obtain access to credit, which is often critical to the timely purchase of productivity-enhancing inputs such as improved seed varieties and fertilizer. The absence of credit limits women's ability to adopt new technology, to hire labor when it is needed, to grow crops that require large outlays of cash up front, to purchase their own land where women do have legal rights to land, or to purchase capital goods. Yet, the evidence indicates that when women are able to overcome these constraints they are equally if not more likely than men to be innovators. In Zambia, a recent study found that wealthier farm households headed by females were more likely than households headed by males to adopt improved maize varieties.

Agricultural extension agents are a critically important source of information for women farmers, given that women generally have lower levels of education than men. Yet in 1988 the United Nations Environment Programme reported that less than 1 percent of government-employed agricultural advisers in Asia and the Middle East are women. The corresponding figures for Africa and Latin America are 3.0 percent and 8.5 percent respectively. Even in Sub-Saharan Africa, despite the long tradition of female farming, male farmers have far greater contact with extension services. Employing female agricultural extension workers is particularly important in societies that forbid the interaction of female farmers with male agricultural extension agents. But employing female agents is not sufficient. They must be trained in agricultural subjects rather than home economics, so that they can deliver agricultural extension messages effectively.

## Women as Gatekeepers

The second pillar of food security is making sure that household members, particularly the children, receive an adequate share of the food that is potentially available. Women act as the "gatekeepers" of their households' food security through the allocation of their own time and income.

Real income is one of the key determinants of household food consumption. However, a growing number of studies now suggest that it is not simply the level of household income but who earns that income that influences food security. Evidence suggests that men spend a higher proportion of their incremental income on goods for their personal consumption. By contrast, women are more likely to purchase goods for their children and for general household consumption.

An increasing body of evidence from Asia, Africa, and Latin America confirms the positive impact of female control of income on household food expenditure, calorie intake, and anthropometric indicators. At similar levels of overall income, households where women control a larger share of income are more likely to meet calorie requirements. One of the most careful studies of this issue finds that the positive effect on the probability that a child will survive in urban Brazil is almost 20 times greater when certain income sources accrue to women rather than men.

Given the positive nutritional outcomes associated with increasing women's incomes, the growing percentage of female-headed households is a cause for concern, for recent evidence suggests that women are overrepresented among the poor. Poverty is a major threat to the food security both of the family and of particular individuals within the family, and the combination of poverty and gender inequality is an even greater one. Lower levels of education and other resources can severely limit earning potential for the growing number of women who are the sole income earners for their families.

The third pillar of food security--food utilization--means ensuring that the food consumed contributes to good physical and cognitive development. This entails the provision of "care," namely, paying adequate time and attention to meeting the physical, mental, and social needs of growing children and other household members. Care affects food security in two broad ways: first, through feeding practices such as breast-feeding and the preparation of nutritious foods for weaned infants and others in the family, and second, through health and hygiene practices such as the bathing of children and the washing of hands before food preparation. These caring behaviors are time-intensive. Given women's roles in agricultural production, domestic production, and reproduction, women in developing countries are relatively short of time, compared with men. The time constraint is especially acute for female heads of households.

In addition, in many regions of the world, women spend up to five hours a day collecting fuelwood and water and up to four hours a day preparing food. This does not leave much time for child care. Indeed, the rapid pace of urbanization and increased female participation in the labor force imply even greater demands on women's time. Women turn to processed foods and "street foods" to save time. Development of technology that relieves women's time burdens in agricultural production and household maintenance without sacrificing their ability to earn independent incomes is therefore critical.

## Women as Shock Absorbers

During times of economic hardship, it is assumed (often by women themselves) that women will act to absorb shocks to household welfare by expanding their already tightly stretched working day. This behavior stems from an undervaluation of women's time (by both men and women), due in large part to the invisibility of women's economic contribution inside and outside the home. Even when women participate in the labor force, it is often assumed that they are secondary income earners. Yet this additional income is important, and is the only income source for female heads of households. A less well documented observation is that women may act as shock absorbers through the liquidation of their own nutritional status. Studies of the seasonality of maternal and preschooler nutrition status have shown that in times of food surplus women's nutrition status returns to normal more quickly than that of preschoolers, but in the lean season female nutrition status is depleted more rapidly than that of preschoolers. Policymakers need to establish safety nets to protect vulnerable groups--the poor, women, and children--from income shocks.

## Conclusions

Women are major contributors to agriculture and play a prime role in ensuring the food security and nutrition status of their household members. Yet women could achieve much more in food production, provision, and utilization if agricultural researchers, plant scientists, extension agents, and policymakers would level the agricultural playing field. Women face an uphill struggle as a result of weak land tenure rights; exclusion from an active role in seed development and selection; neglect by agricultural extension services; and barriers to access to complementary inputs such as fertilizer, improved seeds, and credit. These impediments are likely to result in forgone economic growth through lower crop yields, delayed adoption of new technology and plant varieties, and environmental degradation.

Reductions in asymmetries between men and women in access to agricultural and other resources, the use of women's expertise in the early evaluation of new technologies, and the development of technologies that relieve women's time constraints are essential if the three pillars of household and national food security are to be strengthened by the year 2020.

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