# Women are still the key
## in agriculture and food security in Africa

SAJCN September 2005, Vol. 18, No. 2
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## Introduction

Food insecurity, hunger and malnutrition are widespread and increasing in sub-Saharan Africa. Almost one-half of the sub-Saharan African population is food-insecure, and about one-third of the preschool children are malnourished. More than 4 million preschool children die every year, mostly from nutrition-related illness. Food security and child nutrition will continue to deteriorate dramatically in future unless special action is taken to avoid it.[1]

In 1995 the International Food Policy Research Institute estimated that sub-Saharan Africa's population was projected to double between 1995 and the year 2020 to 1.2 billion, and food demand was projected to increase by at least 150%. Meeting the widening gap between food production and food needs is one of the most critical challenges facing sub-Saharan Africa over the next few years. Although the population may fall short of the projection due to AIDS, it is nonetheless increasing at a rate that needs to be taken into account, as the region experiences inadequate food availability. The irony is that while food supplies have increased worldwide, they have drastically decreased in sub-Saharan Africa.[2]

## Women and agricultural production

Sustainable production of food is the first pillar of food security. In every region of the developing world, but perhaps most in Africa, 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. They make these contributions despite unequal access to land, to inputs such as improved seeds and fertiliser, and to information. A growing body of evidence indicates that if male-female access to inputs were less unequal, substantial gains in agricultural output would occur, benefiting women, men and families.[2]

## Women as key food and cash-crop producers

In sub-Saharan Africa, where women and men farm separate plots, women farmers have traditionally been responsible for food production. Estimates from the Food and Agriculture Organization (FAO) show that women account for more than half or more of the labour required to produce the food consumed in the developing world.[3] Aggregate data suggest that African women perform about 90% of the work of processing food crops and providing household water and fuel wood, 80% of the work of food storage and transport from farm to village, 90% of the work of hoeing and weeding, and 60% of the work of harvesting and marketing.[3,4] Despite their traditional specialisation in food production, women are becoming increasingly involved in cash-crop cultivation.[5]

## Constraints faced by women in agriculture and food security

Despite women's importance in agricultural production, they usually have lower levels of physical and human capital than men. These disparities persist because of legal, socio-cultural and institutional factors that create barriers for women.

### Weak land rights

The laws governing women's rights to land differ widely in various parts of the world. Some religious laws forbid female land ownership. 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. Some resettlement and irrigation projects have actually worsened 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 resources in usufruct land or adopt environmentally sustainable farming practices such as tree planting (see Dey[6] and von Braun and Webb[7]).

Such unequal land rights are reflected in the smaller farm sizes of women farmers. Women farmers in sub-Saharan Africa, for example, often farm smaller plots of land both in absolute terms and in relation to household size (Table I). Women also tend to be allocated poorer land, the quality of which deteriorates even further as it is intensively cultivated.

## Limited access to common property resources

In many rural areas, the livelihood of families often depends on women's access to communal land, nearby forests, and waterways for supplies of food, fuel wood, water for domestic consumption and agricultural production, medicines, and materials for craft production and house building. As wives, females are almost always granted only limited rights to these resources, and their access is shrinking in the face of state takeovers and the shift from common property to private entitlement. Women's declining access and lack of rights to these resources may reduce their incentives to conserve forest resources. Likewise, public irrigation systems are often considered an area of male control, and decisions about the use of irrigation water are made without reference to women's needs for their own production and domestic purposes.[2]

## Lack of equipment and appropriate technology

Female farmers generally own fewer tools than men. Since farm capital contributes positively to yields, female farmers are likely to have lower yields than male farmers. Moreover, new technology has often been inappropriate to women's needs. Recently, however, international research efforts have developed a number of machines that reduce the drudgery of tasks largely performed by women and fit women's agronomic requirements. These new machines include micro rice mills, direct seeding equipment, transplanters, and threshing machines developed by the International Rice Research Institute (IRRI) and cassava-processing equipment developed by the International Institute for Tropical Agriculture (IITA).[2]

The effect of the adoption of labour-saving equipment for agricultural production, however, depends on whether those affected are a mix of smallholders looking for labour-saving devices or hired labourers depending on employment from larger farm households. For women who farm their own plots, new agricultural technologies may reduce drudgery and increase productivity. But for female hired labourers, adoption of labour-saving devices may mean loss of employment and income. Also, where decisions about investment in equipment are made principally by husbands, investment in labour-saving technologies for women is frequently a low priority.[2]

## Limited contact with agricultural extension

Despite women's prominent role in agriculture, they do not get an appropriate share of agricultural extension advice and other services (such as seeds, fertiliser, and credit delivered through the agricultural extension system). In Africa, since women farm separate plots and since husbands do not necessarily share extension information with their wives, women's access to extension services is important. Evidence from a number of sub-Saharan African countries, however, suggests that male farmers have greater contact with extension services than female farmers do (Table II).

Four primary constraints limit women's access to extension services. First, in many places cultural restrictions prevent male extension officers from meeting with women farmers. Second, domestic responsibilities sometimes limit women's mobility, making it harder for them to attend meetings and courses away from home. Third, women are less likely than men to speak the national language, and extension services are often not offered in the local language. Fourth, there are not enough female extension agents (Table III).

One potential remedy is to increase the number of women receiving appropriate training to be agricultural extension agents. A second is to give agricultural training to women trained as community development

**Table I. Size of holdings by gender of farm manager or household head, selected countries**

| | Area cultivated (hectares) | | Household size (No. of people) | | Area per person in household (hectares) | |
|---|---|---|---|---|---|---|
| **Country and year** | **Male** | **Female** | **Male** | **Female** | **Male** | **Female** |
| Kenya (1989) | 2.6 | 1.7 | 8.6 | 8.0 | 0.30 | 0.21 |
| Nigeria (1989) | 2.6 | 0.8 | 7.6 | 4.9 | 0.34 | 0.16 |
| Zambia (1986) | 2.7 | 1.2 | 3.5 | 1.7 | 0.77 | 0.71 |
| El Salvador (1988) | (*manzanas**) | | | | (*manzanas*) | |
| Co-operative members | 0.78 | 0.49 | 5.3 | 4.8 | 0.15 | 0.10 |
| Tenant beneficiaries of land reform programme | 1.91 | 1.81 | 6.1 | 5.6 | 0.31 | 0.32 |

Sources: Kenya 1989 and Nigeria 1989: Saito *et al.*;[5] Zambia 1986: Sikapande;[8] El Salvador: Lastarria-Cornhiel.[9]
*A *manzana* is a measure of land area.

**Table II. Technical assistance received, according to gender of household head**

| Indicator of technical assistance | Male-headed household | Female-headed household |
|---|---|---|
| Percent of families ever visited by extension worker | | |
| Kenya (1989) | 12 | 9 |
| Nigeria (1989) | 37 | 22 |
| Tanzania (1984) | 40 | 28 |
| Zambia (1986) | 60 | 19 |
| Technical assistance score* | | |
| El Salvador (1988) | | |
| Co-operative members | 0.74 | 0.59 |
| Tenant beneficiaries of land reform program | 0.96 | 0.74 |

Sources: Kenya 1989 and Nigeria 1989: Saito *et al.*;[5] Tanzania 1984: Mollel;[10] Zambia 1986: Sikapande;[9] El Salvador 1988: Lastarria-Cornhiel.[9]
*Based on a score of 0 for no technical assistance, 1 for access to technical information (from mass media, for example), and 2 for visits from agricultural extension agents.

**Table III. Number of farmers per extension agent and share of female extension agents**

| Region | Farmers per agent | Women as percentage of: All extension staff | Women as percentage of: Field extension staff |
|---|---|---|---|
| Africa | 1 809 | 11.1 | 7.0 |
| Asia and Pacific | 2 661 | 14.8 | 14.1 |
| Near East | 2 499 | 19.5 | 9.5 |
| Latin America | 2 940 | 14.5 | 13.9 |
| Europe | 431 | 15.7 | 6.6 |
| North America | 325 | 39.2 | 15.0 |

Source: Saito and Spurling.[11]

or home economics officers so that they can work directly with women farmers.

A third strategy is for extension agents, whether men or women, to meet with farmers in groups. This practice would reduce or remove the cultural constraints against interaction between individual male extension agents and female farmers and would have the added benefit of enabling the sharing of information by the women in the groups. The group approach has been used successfully in Botswana, Kenya and Nigeria. In Zambia, farmers' field days at which farmers look at experimental materials are held separately for men and women.[2]

In the Philippines, agricultural extension services have successfully used radio to transmit information. Radio was used, for example, for a course on integrated pest management (IPM), with farmers periodically sending in homework and tests for evaluation. The use of radio was less successful in Mali, however, mainly because the language on the radio was different from that spoken locally.[12]

## Lack of access to credit

Women face a number of barriers to obtaining credit. Men usually hold property that is acceptable as collateral, especially land, and formal financial institutions often deem the types of valuables held by women (such as jewellery) unacceptable. The transaction costs involved in obtaining credit – transportation costs, paperwork, time spent waiting – may be higher for women than for men owing to higher opportunity costs from forgone activities. Indeed, in rural Kenya, distance to a bank is a significant determinant of the probability of obtaining credit for women but not for men.[5]

Social and cultural barriers, women's lower educational levels relative to men, and their lack of familiarity with loan procedures may also limit their mobility and interaction with predominantly male credit officers or moneylenders. Exclusion from local groups, such as farmers' groups, may prevent women from receiving not only extension advice but also credit, particularly if the extension worker plays an important role in credit delivery. Women also tend to be involved in the production of relatively low-return crops that are not included in formal sector lending programs.

Since the early 1980s, a number of alternatives to the formal sector have given women access to credit and financial services.[13] Most programmes do not heavily subsidise interest rates, and they link repayment to future lending. Successful programmes typically reduce transaction costs, charge commercial interest rates, establish deposit facilities, target poor clients, develop income-generating skills, strengthen existing local institutions like farmers' groups, and emphasise the provision of financial services rather than business training.

## Lower levels of education

In the early 1980s, average literacy rates for men in developing countries were over 50%, while over two-thirds of women were still illiterate.[14] This disparity continues to be larger in rural areas, where educational attainment is lower, and persists despite high private rates of return to women's schooling[15] and high social returns from women's education.[16] This gap has serious implications for agricultural productivity and incomes. Better-educated farmers are more likely to adopt new technologies and to have access to extension services (K Berger and J Gunning – personal communication, 1992). Under-investment in women's education therefore has high opportunity costs.

## Benefits of removing constraints on women farmers

Barriers to women's increased productivity and the use of their experience and knowledge may impose a large opportunity cost to society in terms of forgone output and incomes, the magnitude of which is only now being realised. For example, many studies show that plots of land controlled by women have lower yields than those controlled by men. These lower yields are usually the result of lower use of labour and fertiliser per acre rather than managerial and technical inefficiency.[17] Unequal rights and obligations within the household, as well as women's limited time and financial resources, prevent women from applying optimal levels of inputs.

Given equal access to resources and human capital, women farmers can achieve yields equal to those of men or even, as some studies show, significantly higher yields (these simulations were also reported by the World Bank[18]). One study estimates that yields among Kenyan women farmers could increase by 7% if they were given the same average levels of age (or experience), education and inputs as those possessed by the entire sample of male and female farmers (simulations based on coefficients estimated for maize farmers in Kenya – see Moock[19]). Yields could increase by as much as 24% if all women farmers had primary schooling (simulations based on coefficients from Saito *et al*.[5]). If women had the same experience, education, and inputs as men, yields could increase by 9 - 24% (for a more technical discussion see Quisumbing[15]).

### Hidden expertise

Women suffer not only from lower levels of education and lack of access to information, but also from a lack of recognition of the expertise they have acquired. Women have detailed, complex knowledge of seeds and the growing systems of which they are in charge. In Zambia's intricate *chitimene* system, for example, in which forest and fallow areas are brought into crop production with the felling, harvesting, and burning of woody vegetation, both men and women have detailed knowledge of local woodland and fallow land species, their growing patterns, their agronomic attributes, and their uses. Each sex, however, specialises in knowledge of certain species.[20] Recent research is demonstrating the value of women's indigenous knowledge base as a source of productivity growth.

### Few women agricultural scientists

The number of women who work as agricultural research scientists or extension agents has been, until recently, minuscule. All continents are now experiencing a rising enrolment of women in agricultural science, but the numbers are still low. Once trained as scientists, they are often given responsibility for anything to do with women, whether it is within their discipline or not. Their skills are underused, and they face workplace difficulties related to their minority status.[2]

### Women's absence in agricultural and environmental decision-making bodies

For too long, much agricultural research has ignored the on-the-ground reality of farming systems and farmer preferences, resulting in lost opportunities and miscalculated priorities. Several international agricultural research centres have demonstrated that incorporating the views of farmers early in the research process results in more productive research, and these centres have helped many national systems do the same. These centres, however, have focused on male farmers; the explicit inclusion of women's knowledge and perspectives in this process has been much slower, and this delay remains an obstacle to meeting the needs of women producers.[2]

The process of listening to – and learning from – female farmers can be facilitated by increasing the representation of women in agricultural policymaking bodies. Relatively few women have yet reached senior management positions in public and independent research and training institutions, ministries with responsibilities for agriculture and environment, and environmental non-governmental organisations.

One interesting attempt to ensure that women's views are incorporated into local decisions is taking place in Burkina Faso, where the World Bank has undertaken a project on community land management. The implementation manual has specific instructions on how to ensure the participation of women, including the stipulation that in voting on community land management plans, 30% of those voting in favor must be women for a plan to pass (D Spurling – personal communication, 1995).

## Conclusion

Women in developing countries currently play a crucial role in meeting the food and nutrition needs of their families through all three pillars of food security – food production, economic access to food, and nutrition security – but they do so with inadequate resources. If the constraints confronting women farmers were removed and women were granted access to the resources available to male farmers, they could make significant contributions to eradicating the food insecurity faced by millions of people. To allow women to fulfil their potential in generating food security, national governments and international organisations must take policy steps to involve women in all aspects of the food chain – research, production, marketing, value adding and preparation. Further, it is important to build on the nutrition knowledge women already have and increase their understanding of the requirements of

the human body of various age groups in the wake of a disease such as HIV/AIDS. If there is no food in the house in the first place, one cannot talk of nutrition. Women are always the ones who see to nurturing at the family level and make it their responsibility to provide their families with food of the right quantity and quality.


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