



## MODULE I

# Gender and Food Security

### INTRODUCTION

Food Security, at the individual, household, national, regional, and global levels [is achieved] when all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for a healthy and active life.

FAO (2001)

**T**oday the world has enough food to feed everyone, yet an estimated 854 million people worldwide are still undernourished (FAO 2006) (fig. 1.1).<sup>1</sup> Poverty—not food availability—is the major driver of food insecurity. Improvements in agricultural productivity are necessary to increase rural household incomes and access to available food but are insufficient to ensure food security. Evidence indicates that poverty reduction and food security do not necessarily move in tandem. The main problem is lack of economic (social and physical) access to food at national and household levels and inadequate nutrition (or hidden hunger). Food security not only requires an adequate supply of food but also entails *availability, access, and utilization* by all—men and women of all ages, ethnicities, religions, and socioeconomic levels.

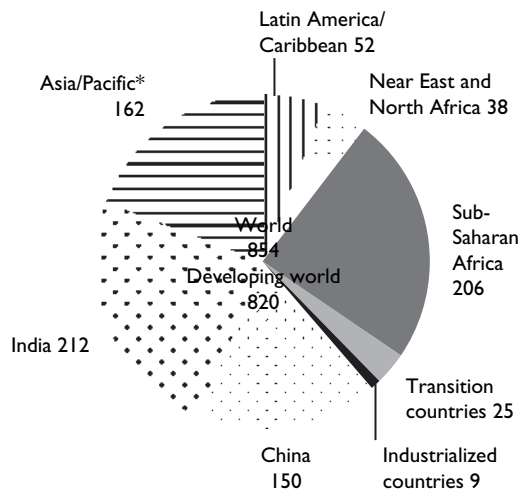
Gender-based inequalities all along the food production chain “from farm to plate” impede the attainment of food and nutritional security. Maximizing the impact of agricultural development on food security entails enhancing women’s roles as agricultural producers as well as the primary caretakers of their families. Food security is a primary goal of

sustainable agricultural development and a cornerstone for economic and social development, and so this Module serves as a road map that indicates how addressing gender in agriculture development in the other Modules can be optimized to maximize the impact on food security. Unlike the other Modules, it does not contain thematic notes but instead guides the reader to Modules that provide more in-depth discussions. It also demonstrates the vital and often unacknowledged role that women play in agriculture, as well as how their critical role in ensuring sustainable agricultural development translates into household-level improvements in food and nutritional security.

### FROM AGRICULTURE TO FOOD SECURITY

Agriculture and food security are inextricably linked (see fig. 1.2). The agricultural sector in each country is dependent on the available natural resources, as well as on national and international policy and the institutional environment that governs those resources. These factors influence women and men in their choice of crops and levels of potential productivity. Agriculture, whether domestic or international, is the only source of food both for direct consumption and as raw material for refined foods. Agricultural production determines food availability. The stability of access to food through production or purchase is governed by domestic policies, including social protection policies and agricultural investment choices that reduce risks (such as droughts) in the agriculture production cycle. Yet the production of food

Figure 1.1 Undernourished People Worldwide



\*Excluding China and India

Sources: FAO 2006; [www.ifad.org/hfs/thematic/rural/rural\\_2.htm](http://www.ifad.org/hfs/thematic/rural/rural_2.htm).

is not the only goal of agricultural systems that also produce feed for livestock and fuel (see Module 10 for a more in-depth discussion). Therefore, demand for and policies related to feed and fuel also influence food availability and access.

Staple grains are the main source of dietary energy in the human diet and are more likely to be available through national and international markets, even in developing countries, given their storage and transport characteristics. Fruits, vegetables, livestock, and aquaculture products are the key to micronutrient, that is, vitamins and minerals, sufficiency. However, most of these products are more perishable than grains, so that in the poorest countries where lack of infrastructure, such as cold storage and refrigerated transport, predicated short food chains, local agriculture determines the diversity of diets. Food security can become a reality only when the agricultural sector is vibrant.

Other elements are necessary to achieve food and nutritional security as shown in figure 1.2. These are largely assigned to women, who play a key role in ensuring food security and are the focus of this Module.

## WOMEN'S ROLE IN FOOD AND NUTRITIONAL SECURITY

Agricultural interventions are most likely to affect nutrition outcomes when they involve diverse and complementary processes and strategies that redirect the focus beyond agriculture for food production and toward broader consideration of livelihoods, women's empowerment, and optimal intrahousehold

**National food security** requires both the production and the ability to import food from global markets to meet a nation's consumption needs.

**Household food security** is year-round access to an adequate supply of nutritious and safe food to meet the nutritional needs of all household members (men and women, boys and girls).

**Nutritional security** requires that household members have access not only to food, but also to health care, a hygienic environment, and knowledge of personal hygiene. Food security is necessary but not sufficient for ensuring nutrition security. (International Fund for Agricultural Development [IFAD])

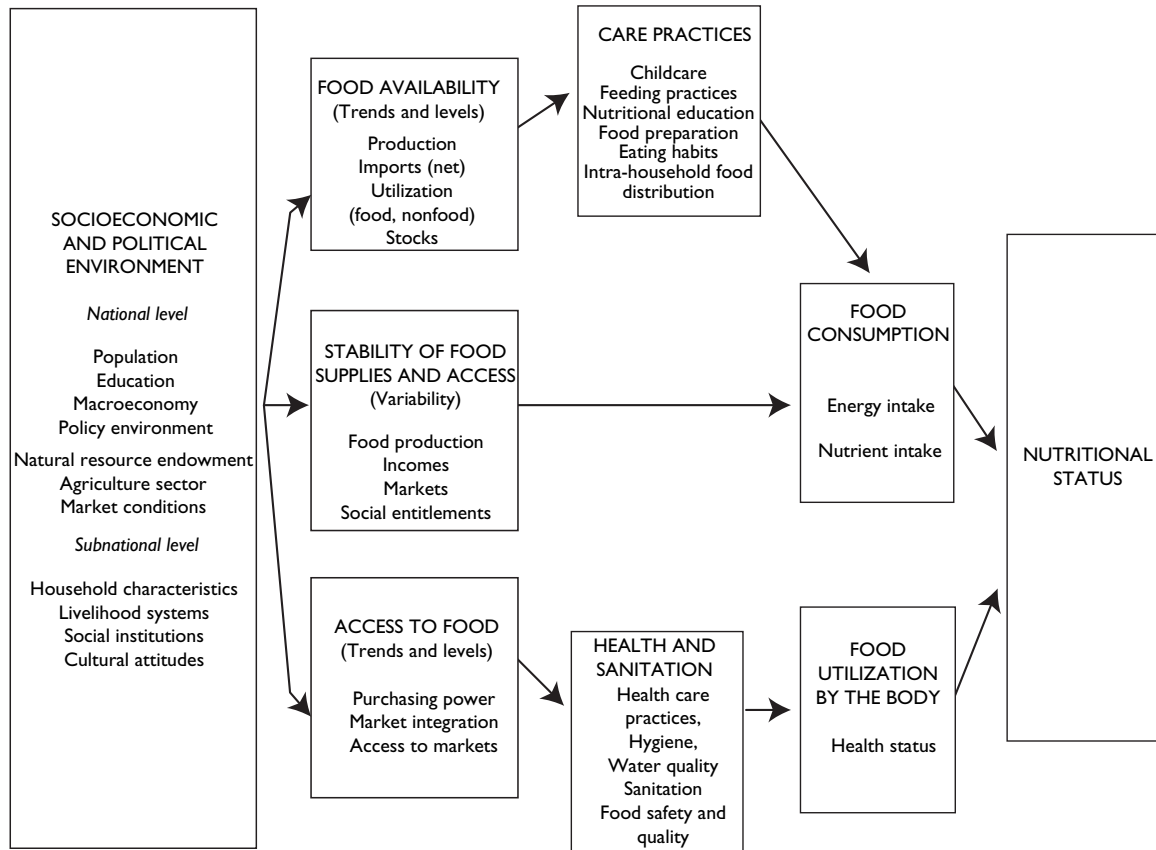
uses of resources. Successful projects are those that invest broadly in improving human capital, sustain and increase the livelihood assets of the poor, and focus on gender equality.

World Bank (2007b)

Women are crucial in the translation of the products of a vibrant agriculture sector into food and nutritional security for their households. They are often the farmers who cultivate food crops and produce commercial crops alongside the men in their households as a source of income. When women have an income, substantial evidence indicates that the income is more likely to be spent on food and children's needs. Women are generally responsible for food selection and preparation and for the care and feeding of children. *Women are the key to food security* for their households (Quisumbing and others 1995).

In rural areas the availability and use of time by women is also a key factor in the availability of water for good hygiene, firewood collection, and frequent feeding of small children. In sub-Saharan Africa transportation of supplies for domestic use—fetching fuelwood and water—is largely done by women and girls on foot. In Ghana, Tanzania, and Zambia women expend most of their energy on load-carrying activities involving transport of fuelwood, water, and grain for grinding. Fields dedicated to food crops are often farther from home than those related to cash crops. Because women must also perform domestic tasks, they must spend a considerable amount of time traveling between their home and the fields. This burden, together with other domestic and

Figure 1.2 Elements in Achieving Food and Nutrition Security



Source: IFAD, FAO, and WFP 2000.

reproductive activities, severely constrains the amount of time available to women (see Modules 9 and 7, particularly Technical Note 4 in the latter). As women’s time constraints increase because of engagement in wage labor and other factors, they will need to build “strategic alliances with men” to meet all the needs of the household. In the WIN project (Empowerment of Women in Irrigation and Water Resources Management for Improved Food Security, Nutrition and Health) in Nepal, one woman trained as a para-veterinarian convinced her husband to care for their children and perform other domestic tasks while she made her rounds.<sup>2</sup>

Changes in the availability of natural resources, due to the depletion of natural resources and/or impacts of climate change, can compromise food security by further constraining the time available to women. As discussed in Module 10, water degradation and pollution can force women to travel farther to collect water, reduce the amount they collect, and compromise hygiene practices in the household. Recognizing women’s needs for environmental resources, not only

for crop production but also for fuel and water, and building these into good environmental management can release more time for women to use on income generation, child care, and leisure.

Agriculture has an additional impact on food security through its impact on health. For example, poorly managed irrigation infrastructures may become a breeding ground for mosquitoes, and excessive use of groundwater for irrigation may compromise water sources needed by women to ensure good hygiene practices and clean food preparation, without which children suffer more frequently from diarrhea and compromised growth.

Poverty is a major driver of food insecurity, but the two are not always linked. Poorer households headed by women have demonstrated that they often succeed in providing more nutritional food for their children than those headed by men (Kennedy and Peters 1992). This demonstrates the importance of gender-based knowledge and roles with regard to food security. Men who lack knowledge about

food preparation may not be able to translate food availability into nutritional security for their households.

The following sections examine in detail the three key components of food security and show how women's contribution to agriculture and its translation into nutritional security can be promoted.

## FOOD SECURITY

Food security is essentially built on three pillars: food availability, food access, and food utilization. An individual must have access to sufficient food of the right dietary mix (quality) *at all times* to be food secure. Those who never have sufficient quality food are chronically food insecure. Those whose access to an adequate diet is conditioned by seasonality are food insecure and are generally called *seasonally* food insecure. Individuals who normally have enough to eat but become food insecure in the face of disasters triggered by economic, climatic, and civil shocks (war and conflict) are *transitorily* food insecure. The “at all times” element of the food security definition makes risk and associated vulnerability an important element of the food security concept.

The definition of food security is often applied at varying levels of aggregation, despite its articulation at the individual level. The importance of a pillar depends on the level of aggregation being addressed. At a global level, the important pillar is food availability. Does global agricultural activity produce sufficient food to feed all the world's inhabitants? The answer today is yes, but it may not be true in the future given the impact of a growing world population, emerging plant and animal pests and diseases, declining soil productivity and environmental quality, increasing use of land for fuel rather than food, and lack of attention to agricultural research and development, among other factors.

When food security is analyzed at the national level, an understanding not only of national production is important, but also of the country's access to food from the global market, its foreign exchange earnings, and its citizens' consumer choices. Food security analyzed at the household level is conditioned by a household's own food production and household members' ability to purchase food of the right quality and diversity in the market place. However, it is only at the individual level that the analysis can be truly accurate because only through understanding who consumes what can we appreciate the impact of sociocultural and gender inequalities on people's ability to meet their nutritional needs.

The third pillar, food utilization, essentially translates the food available to a household into nutritional security for its

members. One aspect of utilization is analyzed in terms of distribution according to need. Nutritional standards exist for the actual nutritional needs of men, women, boys, and girls of different ages and life phases (that is, pregnant women), but these “needs” are often socially constructed based on culture. For example, in South Asia evidence shows that women eat after everyone else has eaten at a meal and are less likely than men in the same household to consume preferred foods such as meats and fish.

*Hidden hunger* commonly results from poor food utilization: that is, a person's diet lacks the appropriate balance of macro- (calories) and micronutrients (vitamins and minerals). Individuals may look well nourished and consume sufficient calories but be deficient in key micronutrients such as vitamin A, iron, and iodine. People may live in unhealthy environments with inadequate hygiene and sanitation, which results in frequent illnesses and compromised nutritional outcomes despite sufficient food being available. Infants and very young children may have mothers who are so time constrained, particularly at peak times in the agricultural calendar, that they are unable to feed a child as often as necessary to provide good nutrition. Malnutrition is economically costly: it can cost individuals 10 percent of their lifetime earnings and nations 2 to 3 percent of gross domestic product (GDP) in the worst-affected countries (Alderman 2005).

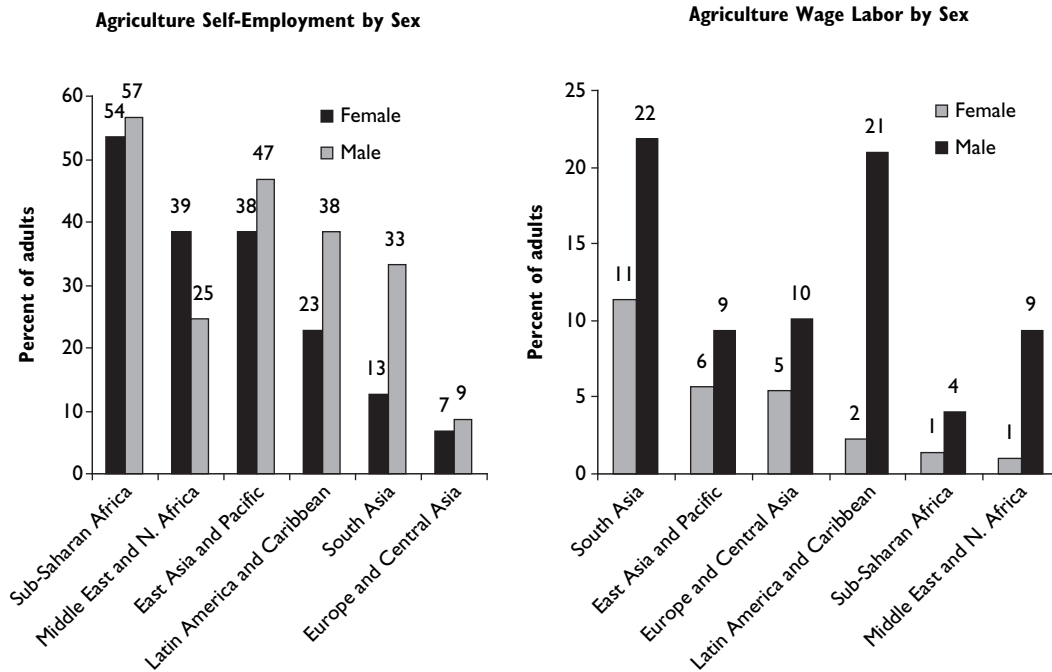
Achieving food security is even more challenging in the context of HIV and AIDS. HIV affects people's physical ability to produce and use food, reallocating household labor, increasing the work burden on women, and preventing widows and children from inheriting land and productive resources (Izumi 2006). A study of rural households in Mozambique has shown that an adult death due to illness, which is likely to be AIDS related, reduces the amount of staple foods produced by these households by 20–30 percent, contributing to household food insecurity (Donovan and Massingue 2007).

Policy responses differ according to the underlying determinants of the food insecurity. These responses range from legal reforms to economic incentives to infrastructure investment to the provision of insurance instruments. The following sections will address the specific gender issues in each pillar of food security, drawing out the links to the other Modules of the *Sourcebook*.

### Food availability

Women are key players in the farming sector as shown in figure 1.3. Their role in agriculture self-employment is

Figure 1.3 Rural Employment by Sector of Activity



Source: World Bank 2007c.

notable in sub-Saharan Africa and the Middle East and North Africa. Women’s role in food production within agriculture is even greater. In many societies women supply most of the labor needed to produce food crops and often control the use or sale of food produce grown on plots they manage.

However, the asymmetries in ownership of, access to, and control of livelihood assets (such as land, water, energy, credit, knowledge, and labor) negatively affect women’s food production. Women are less likely to own land and usually enjoy only use rights, mediated through a man relative. Studies cited in Deere and Doss (2006) indicate that women held land in only 10 percent of Ghanaian households while men held land in 16–23 percent in Ghana; women are 5 percent of registered landholders in Kenya, 22.4 percent in the Mexican *ejidos* (communal farming lands), and 15.5 percent in Nicaragua. On average, men’s land holdings were almost three times the women’s land holdings. This compromised land access leads women to make suboptimal decisions with regard to crop choices and to obtain lower yields than would otherwise be possible if household resources were allocated efficiently.

Insecurity of tenure for women results in lower investment and potential environmental degradation; it compromises future production potential and increases food insecurity. In Ghana the primary investment in land, given the lack of availability of fertilizer, is fallowing. However,

longer fallows are likely to lead to loss of land when tenure is insecure, but shorter fallows reduce yields as soil fertility is compromised. Goldstein and Udry (2005) demonstrate that those with less political capital in a village have less tenure security and as a result leave their land fallow for shorter periods. Within households, profits per hectare of a maize-cassava intercrop from similar plots vary according to individuals and length of fallow. Women have less tenure security and sacrifice profits per hectare with shorter fallows. The lower production reduces not only women’s potential income, but also the availability of food for household consumption.

Legal reforms need to take into account multiple-use rights to land, particularly women’s rights, as well as the different means by which women gain access to land, including divorce and inheritance systems (see Module 4, particularly Thematic Notes 2 and 4). The Lowlands Agricultural Development Projects in The Gambia (see Module 6, particularly Innovative Activity Profile 2) provide a good example of how understanding the way that women obtain land rights affects the design of a successful project. The project resulted in previously landless women obtaining secure rights to land through a land reclamation program.

Agricultural production depends on natural resources: land, soil, water, and plant genetic resources. Women often have unique perspectives on as well as understanding of

local biodiversity and can be key partners for plant breeders as they work to develop adapted and improved varieties. In Rwanda women farmers have shown they can be more effective at selecting improved varieties for local cultivation than the men plant breeders (Sperling and Berkowitz 1994). The LinKS project,<sup>3</sup> discussed in Module 10 (in particular Innovative Activity Profile 1), demonstrates how to work with a broad spectrum of stakeholders to promote food security by understanding local women and men farmers' unique understanding of agrobiodiversity.

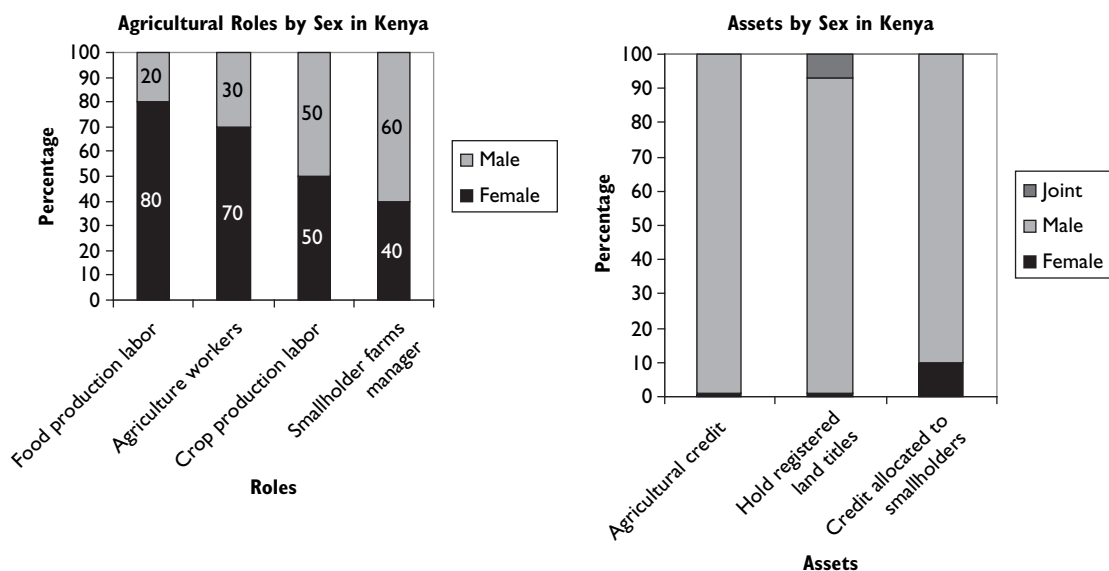
Agricultural technology transfer capacity development is one of the prime policy levers to increase agricultural productivity. But often women are not targeted because it is assumed that their husbands or fathers will share the knowledge with them, and often they are supplied with technologies that do not meet their needs. For example, early dissemination of hybrid maize in Zambia failed to recognize that women use the crop for home consumption, which requires milling. The hybrid that was introduced required hammer mills, but only traditional mills were available locally. Poorer storage characteristics of the hybrid also compromised women's ability to conserve their agricultural produce, so women returned to growing traditional maize varieties (see Module 12). Involving young women and men in training opportunities from the start has proved to be a successful strategy in ensuring food security and sustainable livelihoods for households, as can be seen in the example provided by the approach used in

the Junior Farmer Field Life School (see Module 7, in particular Innovative Activity Profile 3).

However, adoption of new technology depends on many things, including the availability of required assets to implement the technology, how local women and men view the perceived benefits, the way information is shared, and local gender roles and other sociocultural constraints. Even when women have access to land for food production and access to improved technologies, they face more constraints than men in accessing complementary resources for success. They have less access to credit (see Module 3) and less access to inputs such as fertilizer, and they are less likely to benefit from agricultural extension services (see Module 7), and therefore they have less access to improved technologies (see fig. 1.4). Women tend to process their crops more on the farm than men do theirs, but little is invested in technology research into on-farm crop processing.

These constraints are not only costly to food security but also to economic growth. If women farmers in Kenya had the same access to farm inputs, education, and experience as their men counterparts, their yields for maize, beans, and cowpeas could increase as much as 22 percent (Quisumbing 1996). This would have resulted in a one-time doubling of Kenya's GDP growth rate in 2004 from 4.3 percent to 8.3 percent (World Bank 2007a). More important, household productivity in agriculture and food supplies could often be increased at no extra cost by reallocating existing resources inside the household toward women.

Figure 1.4 Roles and Access to Assets by Women and Men in the Agriculture Sector



Source: World Bank 2007a.



Soil fertility is an important component of agricultural productivity. As shown in Module 12, particularly Thematic Note 2, legumes can be used to improve soil fertility to enhance crop productivity as well as human nutrition. Recognition and adaptation of this approach in Malawi demonstrated that women had a preference for a legume intercrop production system for their plots. This approach helped improve soil fertility and increased the productivity of their main crop as well as improved household food security by providing an additional source of nutritious food.

### Food access

Access to food can be constrained physically—washed-out roads in a rainy season may cut off access to the nearby market town—or, more usually, economically. Ironically, food insecurity has a largely rural face. Despite the fact that the majority of food is grown in rural areas, most of the rural poor are net food buyers, not sellers, in many countries. Hence, economic access to markets, or lack thereof, is a fundamental determinant of food insecurity. The role of agriculture in income generation for the poor, particularly women, is more important for food security than its role in food production (Sanchez and others 2005).

The Andhra Pradesh Rice Credit Line Project (Module 3, Innovative Activity Profile 1) and Niger's Food Bank Project (Module 11, Innovative Activity Profile 2) are examples of initiatives in which improved income generation and food-linked credit systems for women enhanced household food security and the overall well-being of the family.

During conflict and crises, food aid and agricultural assistance are both necessary components of effective interventions. The intertwining forces of food aid and agricultural support affect women's and men's food security, nutrition, health, and livelihoods. During times of crisis, women and girls are often forced to reduce their intake in favor of other household members, particularly men and boys, which results in increased incidence of malnutrition among women. However, men are at greater risk during famines, and in many recorded famines, mortality rates are higher among men than women. Insecure conditions can also limit women's mobility and access to humanitarian aid or markets (see Module 11).

When crises disrupt agricultural production and distribution, displace populations, and render land unusable, food aid is of critical importance, especially in the short term. The key to sustainability, however, is to ensure that the aid provided does not create dependency or harm the communities and stakeholders it hopes to assist. To plan

emergency interventions properly requires substantial knowledge of the ways in which the agricultural sector works, as well as knowing what the sociocultural reality is locally and how that dictates who does what, who has what, and who controls what. Because women (and children to some extent) are typically responsible for food production, preparation, storage, and marketing, it is crucial to include them in emergency-related food security planning and decision making as potential change agents and decision makers, rather than as the "victims" they are often portrayed to be. A key aspect of program design is to understand the differing roles, responsibilities, capacities, and constraints of women and men in the region in question. This includes understanding the traditional division of labor in the agricultural sphere, as well as any changes that may have resulted from a crisis. Lessons learned reveal that food security interventions and livelihoods-saving strategies within an emergency setting are more efficient, cost effective, and timely when gender-based differences and gender-differentiated impacts on the affected population have been properly understood and addressed (FAO 2005; see Module 11).

The Household Food Security and Nutrition Project in Ethiopia illustrates that it is vital that beneficiaries have a strong sense of ownership of the project and that the ability of men and women to assess their own situation and their ability to improve their livelihoods are important steps in the empowerment process.<sup>4</sup> Moreover, identifying gender-differentiated opportunities and constraints for improving nutrition and food security during the design phase of a project often leads to better food security interventions.

Addressing poverty issues in and of themselves, while vital, does not necessarily mean that we are addressing food insecurity. India has been remarkably successful in using agricultural development to foster economic growth and poverty reduction. It has moved from food deficits to food surpluses on the national level. India has a higher gross national income (GNI) per capita at \$730 than most of sub-Saharan Africa. However, its child stunting rates are high at 46 percent. Niger's GNI per capita is just \$240, but its stunting rate is 40 percent. The Gambia demonstrates what can be achieved despite poverty, with a stunting rate of just 19 percent against a GNI per capita income of \$290.<sup>5</sup> Afghanistan, Bangladesh, India, and Nepal occupy four of the top five positions in the global ranking of underweight children. Bangladesh and India rank among the highest incidences of low-birth-weight babies, an indicator of maternal malnutrition. Many would argue that the inferior status of women in South Asia is a key factor in the failure

to translate agriculture-led poverty reduction into nutritional improvements.

Welfare improvements at the household level are not just a function of increasing incomes for households; they are related to who accrues the income within the household. In Côte d'Ivoire, significantly more is spent on food and education and less on alcohol and cigarettes when a higher share of household cash income accrues to women. To achieve the same improvements in children's nutrition and health with a \$10 increase in women's income would require a \$110 increase in men's income (Hoddinott and Haddad 1995).

Although men often control labor input and the sale of "cash crops," women often manage production of subsistence crops, albeit some of the same crops that are sold in local markets. Therefore, improving women's productivity in agriculture not only increases food availability for the household but also raises women's incomes and enhances food security due to women's spending patterns. As discussed in Module 8, public works programs are often used as elements of social protection programs to benefit poor, landless households. Cash wages provide flexibility, but women often prefer that these programs pay food wages. In a World Food Programme project to improve watershed management in Rajasthan, India, women were glad that the program paid food wages as opposed to cash wages because if the program paid cash, then their husbands would participate, and they would not see any additional resources dedicated to household food security.<sup>6</sup>

However, women often face constraints to market engagement. Cash crops are often collected at the farm gate, whereas food crops need to be transported by the grower to local markets. In Africa this is commonly done by women headloading. Studies have found that women transport 26 metric ton kilometers per year compared to less than 7 for men. This leads some people to argue that women account for two-thirds of rural transport in sub-Saharan Africa (Blackden and Bhanu 1999). Hammer mills, which are needed to grind many maize hybrids, are often less common and are centralized at a greater distance from individual households. Given that women bear the transport burden, they may be less likely to adopt hybrid varieties and continue to favor their traditional but lower-yielding varieties.

Investment in transport and infrastructure is necessary to support women's market engagement (see Module 9). This is an important step toward integrating women into value chains (see Module 5). Changes in policy and regulatory frameworks are also needed to create an equal playing

field for women and men in market participation. Greater access to information, organizations, and resources is important for poor women, who disproportionately lack access compared to their men counterparts. Finally, capacity building is needed for poor women in particular, as cultural and other gender-specific constraints have hindered them from greater engagement in markets (see Module 5).

### Food utilization

Having access to food of sufficient quality does not automatically translate into good nutritional status for individuals. Women's role in food utilization for food security is perhaps the most critical and outweighs the importance of their role in food production and how they spend the income they earn.

Sixty percent of the calories and proteins consumed by humans today come from just three plant species: maize, rice, and wheat. Seventy-five percent of our food supply comes from just 12 plants and five animal species (Lambrou and Laub 2004), but yet dietary diversity is extremely important. Diets dominated by cereals lack an adequate array of micronutrients such as iron, vitamin A, B vitamins (niacin, thiamine), vitamin C, zinc, iodine, and folate. Deficiencies in micronutrients are costly in economic terms and in terms of people's well-being. Deficiencies in vitamin A, iron, and zinc all rank within the top 10 leading causes of death through disease in developing countries (WHO 2002). In Sierra Leone iron deficiency among women agricultural workers will cost the economy \$100 million in the next five years (Darnton-Hill and others 2005).

Women are typically responsible for food preparation and thus are crucial to the dietary diversity of their households. Women are generally responsible for selecting food purchased to complement staple foods and to balance the household's diet. Even in the Sahel where men control the granaries, women are responsible for supplying the "relishes" that go with the grains, and it is these that provide the bulk of the micronutrients.

The prime sources for micronutrients are fruits, vegetables, and animal source foods, including fish. Animal source foods are particularly good; they are high density in terms of micronutrients, and those micronutrients are also more bioavailable to the human body (see Modules 13 and 14). Agriculture is thus a key to dietary diversity, particularly in areas that have less access to markets given the perishable nature of fruits, vegetables, and animal source foods.

An extensive review of the nutritional impacts of agricultural interventions, disaggregated into staple crops, fruits and



vegetables, and animal source foods, found that the role of women was critical. Studies of the commercialization of staple food production determined that those people who increased the share of women's income were more likely to increase expenditures on food, although not necessarily improve nutritional outcomes. Interventions focused on fruits and vegetables were more likely to produce biochemical indicators of improved nutritional status when they included educational behavior change designed to empower women. Many of the reviewed livestock and aquaculture interventions resulted in gains in production, income, and food availability, and significantly greater nutritional improvements when the interventions were combined with capacity development training that promoted women's empowerment, education, and behavior change (see Modules 13 and 14). A good example of this type of intervention is that of the introduction of orange-fleshed sweet potatoes in Mozambique. These contain higher levels of provitamin A carotenoids and when introduced with nutrition education can lead to reductions in vitamin A deficiency.<sup>7</sup> Fisheries also offer powerful opportunities for women, as demonstrated in Module 13, particularly Thematic Note 2, which shows how CARE Bangladesh introduced a sustainable, high-income fisheries component that improved family nutrition. As discussed in Module 12, Thematic Note 2, vegetables can be cultivated on the homestead because they require very little land and do not displace other crops. Women do not need to leave the homestead, and so they do not need to violate local cultural restrictions, which would have lowered their participation rates in projects.

## MONITORING AND EVALUATION

Disaggregated monitoring of food security is critical. Many of the following Modules contain specific information and indicators regarding production and access to food under different production systems. Table 1.1 provides examples of indicators that might be used in monitoring the access of women and their families to food of adequate quality and quantity.

Depending on the country or region, it may be relevant also to consider ethnicity and caste alongside gender (both as comparative indicators and when collecting data), because women of lower castes or ethnic minorities are usually in the most disadvantaged situation.

## CONCLUDING REMARKS

Women play a triple role in agricultural households: productive, reproductive, and social. The productive role,

performed by both men and women, focuses on economic activities; the reproductive role, almost exclusively done by women, includes child bearing and rearing; household maintenance, including cooking, fetching water, and fuel-wood; and the social role or community building, often dominated by women, which includes arranging funerals, weddings, and social events.

If sustainable agricultural development is to be translated into food and nutrition security, then the active engagement of women is absolutely necessary. Their involvement will require that development agents go beyond traditional approaches to sustainable agricultural development. Food and nutritional security will mean that women are included in crop breeding and selection strategies so that crops are not selected on their behalf that they cannot market or process, such as hybrid maize when they do not have a hammer mill, and it will necessitate incorporating women in marketing chains (see Module 5).

Food security is not just a goal of sustainable agricultural development; it is a right enshrined in the Universal Declaration of Human Rights, and amplified by Article 11 of the International Covenant on Economic, Social and Cultural Rights. Women also have the right to be equal partners in the agriculture sector, and to that end the Convention for the Elimination of Discrimination against Women protects women's equal access to land, credit, and income. In South Africa (Integrated Food Security Strategy) and Uganda (Food and Nutrition Policy), governments call for a rights-based approach to food security that includes gender equity. Public policies, written from a human rights perspective, recognize the interrelatedness of all basic rights and assist in the identification of those whose rights are not fully realized. In this way they facilitate corrective action and appropriate strategies to enable equal protection for all. Equal representation and active engagement of both women and men in the policy-making processes are required so that their varying needs and priorities are appropriately targeted. More often than not, however, access to the legal system may be more problematic for women than men, but technical and financial support is also needed if institutions that advance and implement women's rights are to fulfill their mandate (see Module 2).

This Module has outlined the basic concepts regarding food security and how it may be achieved by addressing gender inequalities in agricultural development. For a more in-depth understanding of how food security can be achieved through a specific agricultural sector, refer to the relevant Modules or the further reading listed below.

**Table 1.1 Monitoring and Evaluation Indicators for Gender and Food Security**

Indicator	Sources of verification/tools
Relative contributions of fruits, vegetables, animal products, fish, and grains to diet, disaggregated by gender and age	<ul style="list-style-type: none"> <li>• Household survey</li> <li>• Nutritional survey</li> </ul>
Change in food consumption by women, men, boys, and girls per quarter	<ul style="list-style-type: none"> <li>• Household survey</li> <li>• Nutritional survey</li> </ul>
Change in amount of milk, eggs, fish, and animal protein consumed by household family members (disaggregated by women, men, boys, and girls)	<ul style="list-style-type: none"> <li>• Child health records</li> <li>• Household surveys</li> <li>• Rapid nutrition surveys</li> </ul>
Change in nutritional status of children under age five, before and after program activities (disaggregated by boys and girls)	<ul style="list-style-type: none"> <li>• Child health records</li> <li>• Household surveys</li> <li>• Rapid nutrition surveys</li> </ul>
Change in birth weight of babies, before and after program activities	<ul style="list-style-type: none"> <li>• Child health records</li> <li>• Household surveys</li> </ul>
Time spent or distance walked by household members to collect potable water or firewood, disaggregated by gender and age	<ul style="list-style-type: none"> <li>• Household surveys</li> <li>• Participatory Rapid Appraisal (PRA)</li> </ul>
Percentage of time spent daily in household on paid and nonpaid activities, disaggregated by gender and age	<ul style="list-style-type: none"> <li>• Gender analysis</li> <li>• Time-use studies</li> </ul>
Uptake of new or intermediate technologies, such as low fuel stoves, solar cookers, rope pumps, small grain mills, and new types of food, disaggregated by age and education level	<ul style="list-style-type: none"> <li>• Observation</li> <li>• Sample surveys</li> <li>• Stakeholder interviews</li> </ul>
Number of persons accessing credit for food production annually, disaggregated by gender	<ul style="list-style-type: none"> <li>• Bank records</li> <li>• Savings and loan group records</li> </ul>
Changes in soil, crop, and pasture condition in farmland, before and after program activities (such as nutrient levels and percentage ground cover)	<ul style="list-style-type: none"> <li>• Department of Agriculture surveys</li> <li>• Farm records</li> <li>• Participatory monitoring by villagers/herders</li> </ul>
In postdisaster situations, number of women with cooking utensils	<ul style="list-style-type: none"> <li>• Sample surveys</li> </ul>
Changes to livelihood sources (on-farm and nonfarm) among resettled or postdisaster men, women (especially women-headed households), and other disadvantaged groups	<ul style="list-style-type: none"> <li>• Case studies</li> <li>• Community monitoring committees</li> <li>• PRA</li> <li>• Sample surveys</li> </ul>
Changes in access to food markets, before and after infrastructure development	<ul style="list-style-type: none"> <li>• Household surveys, before and after</li> <li>• Project management information system</li> </ul>
Changes over x-year period of project activities in household nutrition, health, education, vulnerability to violence, and happiness, disaggregated by gender	<ul style="list-style-type: none"> <li>• Household surveys, before and after</li> <li>• Project management information system</li> <li>• School records</li> </ul>

Source: Authors, with inputs from Pamela White, author of Module 16.

## NOTES

This Module was written by Lynn Brown (World Bank), Chitra Deshpande (Consultant), Catherine L. M. Hill (Consultant), Yianna Lambrou (FAO), and Marina Laudazi and Catherine Ragasa (Consultants), with inputs from Anne Nicolaysen (FAO), and reviewed by Deborah Rubin (Cultural Practice); Karel Callens, Bill Clay, Patricia Colbert, Brian Thompson and Marcela Villarreal (FAO); Maria Hartl, Sean Kennedy, and Annina Lubbock (IFAD); and Harold Alderman and Mio Takada (World Bank).

1. Based on FAO's 2001–03 estimates; see FAO (2006).

2. The project is funded by the United Nations Foundation and implemented by FAO. See *e-GAL Sourcebook* for more details on the WIN project at [www.worldbank.org](http://www.worldbank.org).

3. See [www.fao.org/sd/LINKS/GEBIO.HTM](http://www.fao.org/sd/LINKS/GEBIO.HTM).

4. Available in the *e-GAL Sourcebook*, Module 11, Innovative Activity Profile 3, at [www.worldbank.org](http://www.worldbank.org).

5. Nutrition statistics from *State of the World's Children 2007* (UNICEF 2006), GNI per capita statistics from *World Development Indicators 2007* (World Bank 2007d).

6. Personal communication with Lynn Brown, April 1, 2008.

7. Available in the *e-GAL Sourcebook*, Module 12, Innovative Activity Profile 1, at [www.worldbank.org](http://www.worldbank.org).

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#### **Further information on developing and using food security indicators at different levels**

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#### **Further case studies**

- Available via the Innovative Activity Profiles prepared for the *Gender in Agricultural Livelihoods (GAL) eSourcebook* available at [www.worldbank.org](http://www.worldbank.org): Module 12 (Gender in Crop Agriculture), Innovative Activity Profile 1 (Promoting Orange-Fleshed Sweet Potatoes).