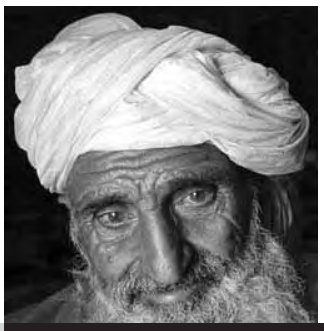


MODULE 7

Gender in Agricultural Innovation and Education

Overview

TRENDS IN GENDER ACCESS TO AGRICULTURAL INFORMATION AND TECHNOLOGY

Agricultural extension programs grew through the nineteenth and twentieth centuries as a means of making the results of agricultural research available to farmers. The demand for extension services in the United States and Europe grew as farmers adapted their practices to new geographical areas, new crops, and urban markets. During the second half of the twentieth century, research concentrated on increasing food production to feed the mushrooming world population while extension services in developing countries concentrated on encouraging farmers to shift to higher-yielding crops and breeds.

To support this effort, the World Bank supported the Training and Visit (ToT) extension in more than 70 countries between 1975 and 1995. A centralized national public extension system, it provided information to extensionists who disseminated it through (overwhelmingly men) "contact farmers" on the basis of their willingness to incorporate promoted innovations. By the mid-1990s, however, it became evident that centralized extension systems tended to promote innovations that benefited farmers with more assets and higher levels of education. As a result, the World Bank, the Food and Agriculture Organization of the United Nations (FAO), and the International Fund for Agricultural Development (IFAD) began investing in a broader range of extension approaches, including those that encouraged a larger role for nongovernmental organizations (NGOs), producer organizations, and the private sector.

By 2001 an increase in rural poverty and the number of farmers left behind became more evident, and the FAO and World Bank developed a shared vision for an integrated approach to agricultural education, research, and extension: *Agricultural Knowledge and Information Systems for Rural Development (AKIS/RD): Strategic Vision and Guiding Principles* (FAO and World Bank 2000). Knowledge and information systems, made up of farmers, agricultural educators, researchers, and extensionists, would be enhanced to better link people and organizations to promote mutual learning and to generate, share, and use agriculture-related technology, knowledge, and information for better farming and improved livelihoods (box 7.1). The concern remained for increasing the benefits of agricultural development for women and indigenous peoples in the face of an increasingly globalized food system.

Since that time the demand for high-value crops, livestock, and fisheries products has been spreading beyond the urban centers in Europe and North America to cities in countries such as China and India; this has provided new opportunities for small-scale farmers who can organize to incorporate production, packing, handling, and marketing technologies and practices so as to have a comparative

Box 7.1 Gender and Knowledge Systems

- Both women and men manage sectors of complex smallholder production systems.
- When gender is ignored, there is a cost to people"s well-being and sustainable growth.
- Knowledge is not transferred; it is generated and exchanged in a continuous learning process.
- Farmers, agricultural educators, researchers, extensionists, and traders form parts of knowledge and information networks.
- Rules and mechanisms governing the way different actors, organizations, enterprises, and groups interact to supply and demand knowledge and technology are critical for equitable development.

Source: Compiled by the author from various sources.

Box 7.2 The Agricultural Innovation System

An *agricultural innovation system* is "a network of organizations, enterprises, and individuals focused on bringing new products, new processes, and new forms of organization into economic use, together with the institutions and policies that affect their behavior and performance. The innovation systems concept embraces not only the science suppliers but the totality and interaction of actors involved in innovation as well. It extends beyond the creation of knowledge to encompass the factors affecting demand for and use of knowledge in novel and useful ways."

Source: World Bank 2007b: vi.

advantage in these markets. However, if women, indigenous people, and resource-limited farmers are to take advantage of this rapidly changing demand for diverse types of staple and high-value food products, then extension systems will need to focus on the organizational, technical, and management skills these groups need to be competitive. Moreover, it will be impossible for these less-advantaged groups to pay for these services, which makes it imperative to rethink the trends toward privatizing or outsourcing extension, or both, which until recently has been considered a public good.

GENDER AND THE AGRICULTURAL INNOVATION SYSTEMS FRAMEWORK

Since the Fourth World Congress on Women, held in Beijing in 1985, efforts have been made by national governments and international agencies to provide agricultural extension to women and to increase rural women's access to education. The Farming Systems perspective of the 1980s encouraged countries and organizations to look beyond the idea of a household whose members had common interests, for an understanding of the intrahousehold gender relations regarding production responsibilities in agriculture. However, the prevailing stereotype assumed that men "heads of households" made most decisions or were in charge of most aspects of the production processes in which small-scale farm units were engaged. This view impeded progress in taking women farmers into account as both key actors and stakeholders.

Since 1995 information regarding the multiple roles that women play in agricultural production and trade has been mainstreamed. It is now generally known that women and men have different roles within the household and that these roles differ in different societies and in different kinds of production units: small-scale/subsistence, medium-scale, and larger/commercial farm households. We have also learned that it is more difficult for limited-resource farmers, both men and women, to innovate because of the risks and investment required. So, although new opportunities will open up for smaller-scale women farmers to meet the demand for high-value, labor-intensive products, proposals to privatize extension services will need to be reviewed if these farmers are to benefit from them.

An attempt to rethink the way we look at agricultural systems, from farm to table globally, is the Agricultural Innovation Systems (AIS) framework that the World Bank is developing (box 7.2). This framework argues that diversity, inclusion, and participatory approaches are critical to building the quality of social capital needed for resilient and sustainable innovation systems. It focuses on strengthening the system from both the supply and demand sides of the broad spectrum of science and technology generation through the exchange activities of organizations, enterprises, and groups. The AIS framework takes into account the many actors along the value chain, as well as diverse organizational forms that can facilitate education, research, and extension systems as well as the practices, attitudes, and policies that frame agricultural production and trade. It moves the discussion from seeds and breeds to one that centers on actors and stakeholders

Table 7.1 Comparison of Approaches to Agricultural Innovation and Gender

Themes	Training and visit system	Agricultural knowledge/ information groups	AIS/Farmer organizations
General features			
Purpose	Planning capacity for agricultural research, technology development, and technology transfer	Strengthened communication and knowledge delivery services to people in the rural sector	Strengthened capacity for innovation throughout the agricultural production and marketing system
Actors	National agricultural research organizations, agricultural universities, extension services, and farmers	National agricultural research organizations, agricultural universities, extension services, farmers, NGOs, and entrepreneurs in rural areas	Potentially all actors in the public and private sectors involved in the creation, diffusion, adaptation, and use of all types of knowledge relevant to agricultural production and marketing
Organizing principle	Using science to create inventions	Access agricultural knowledge	Using knowledge in new ways for social and economic change
Nature of capacity strengthening	Infrastructure and human resource development	Strengthened communication between actors in rural areas	Strengthened interactions between actors; institutional development and change to support interaction, learning, and innovation; creation of an enabling environment
Markets	No market integration	Low market integration	High market integration
Gender dimension			
Gender inclusion	Inclusion is a problem	Improved inclusion	Full engagement of actors
Research agenda	Not gender sensitive	Becoming more gender sensitive because of greater participation of farmers	Becoming more gender sensitive because of greater engagement of farmers but must have explicit gender dimension
Role of women	Women are seen are beneficiaries of the process	Women are seen as active participants in the process	Women are seen are critical actors
Gender focus	Focus is on gender difference of access to technology and services	Focus is on gender difference of access to technology and services and on participation and representation in the research process	Focus is on gender difference in leadership and capacity to influence policy-making processes; social dimension and market linkages are made stronger but must ensure gender inclusion
Institutionalizing gender	Personnel policies and gender balance in relevant institutions are started but gender imbalance remains a major concern	Personnel policies and gender balance in relevant institutions are improved; building capacity for women scientists and farmers' organizations is the focus	Institutional development is created to support interaction and to ensure full engagement in policy-making processes but must have explicit gender dimension

Sources: General Features: World Bank 2007b; Gender Dimension: personal communication with Eija Pehu and Catherine Ragasa.

together with the rules and mechanisms that govern the way the different actors interact (World Bank 2007b: 135). Table 7.1 compares the gender dimension among different approaches to investment for agricultural innovation.

The AIS framework considers women to be critical actors in an innovation system. From this perspective, innovation is viewed as a social and economic process that draws on discovery and invention but recognizes that the most

important role that these innovations have is to improve the livelihoods of all people, especially those of women and other vulnerable groups. From the perspective of the AIS framework, the active engagement of women is no longer only a right but is an imperative to future farming, processing, and marketing systems that can improve livelihoods and agribusiness development. This framework proposes that innovation involves not only new actors but also new roles and many relationships that can sustain knowledge generation and learning if technical and economic successes, together with social and environmental sustainability, are to be achieved (Spielman and Birner 2008).

From this perspective, the improvement of rural livelihoods will require nonformal education (such as Farmer Field Schools) to remain within the category of public goods. Public research and extension will have to concentrate on natural resource management, human nutrition, and support to producer organizations. Extension systems will be charged with supporting the construction of human and social capacity in rural communities so that those people who are more vulnerable can successfully pursue new crops, livestock, fisheries, or other enterprises suitable for local resources, conditions, and market opportunities. In most cases this will require the transformation of the traditional top-down, technology-driven extension model into a new approach that is more decentralized, farmer-centered, and market driven (Swanson 2008b).

Although the agricultural innovation system framework focuses on equality in access to technology, inputs, services, and markets, as well as on opportunities for participation, leadership, and equal representation as a means influencing policy-making processes, it does not make visible farmer types based on diverse asset portfolios, levels of education, and networks. So although there is a visible space for all types of actors in the system, small-scale, women, and indigenous farmers will continue to be left behind unless they receive effective support to build the organizational, technological, management, and investment capacity they will need to engage.

The AIS approach can reach its stated potential to benefit small-scale women and men farmers if it develops mechanisms to foster their organization into groups based on common interests and resources so that they can consider the economic feasibility of producing and marketing. These groups will need to sort through agroecological, market, and transport conditions to determine which products can be feasibly produced and marketed. They will need to have access to support from research so that they can fine-tune technologies to specific conditions, and they will need to develop the skills and practices needed to be able to meet export, sanitation, and certification requirements.

The challenge is to identify and develop organizations and institutions that are best suited to support these groups so that they can (1) determine their comparative advantage in producing and supplying different products for available markets, (2) gain the necessary technical and marketing skills to implement their decisions, and (3) continue diversifying into other high-value crops, products, or enterprises to both mitigate their risk and enable them to further enhance their incomes and livelihoods (Swanson 2008a).

Figure 7.1 shows how actors and organizations interact and where a sustainable agricultural innovation system incorporates equality of participation and representation of actors.

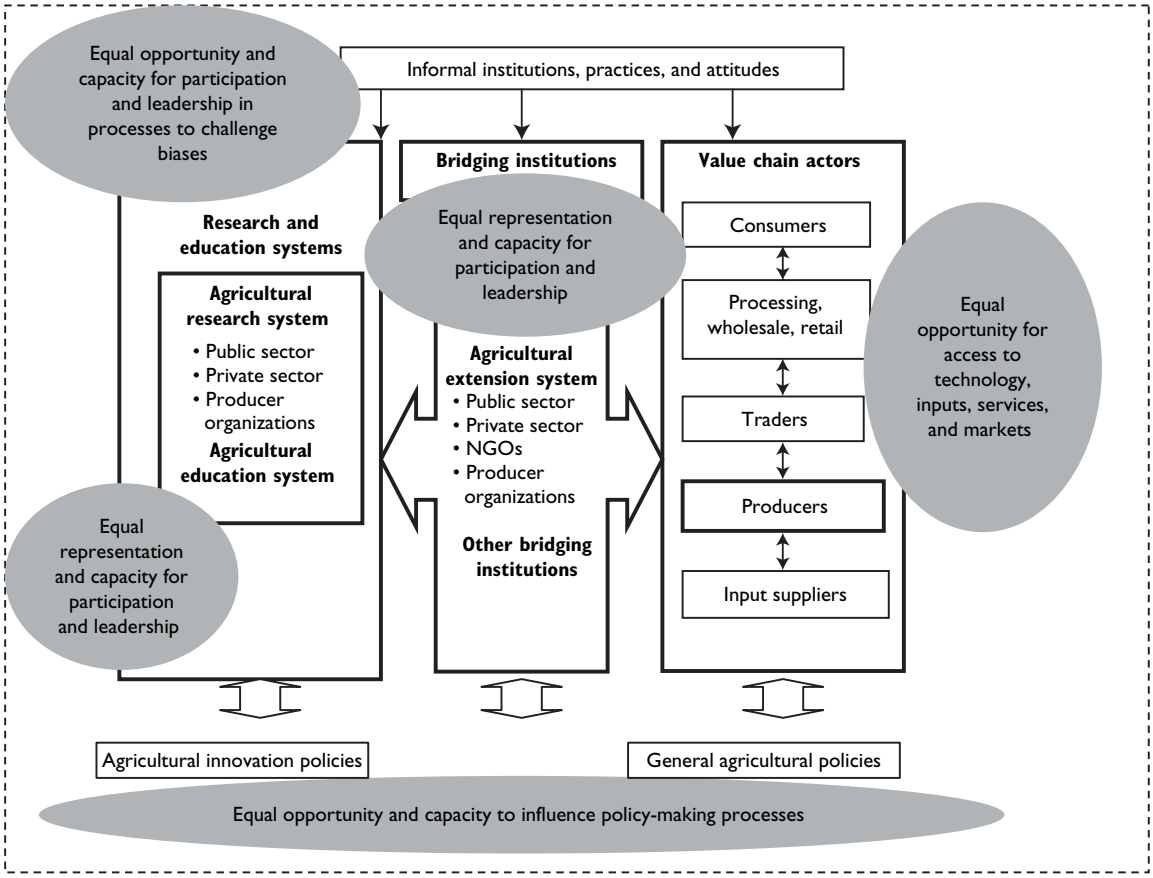
KEY GENDER ISSUES

Organizational arrangements that support women's involvement (Thematic Note 1)

Research and extension organizations have been undergoing changes since the mid-1990s in search of greater cost effectiveness and accountability. In a number of countries, such as China and India, decentralization and devolution policies have encouraged departments of central governments (including agriculture) to scale down, devolving greater responsibility for agricultural training and information services to local governments. At the same time, agricultural research has been encouraged to focus on technologies and management practices that can ensure food security and respond to the demands of resource-limited farmers rather than to those of commercial and multinational interests. The intersection of these two changes has challenged agricultural researchers, on the one hand, to dialogue with resource-limited farmers and agriculture ministries, on the other hand, to coordinate a variety of activities carried out by diverse rural agents, including private advice givers, NGOs, local governments, and commercial input suppliers. Latin America was the first region where attempts at privatizing extension took place (box 7.3 for an example in Peru) as structural adjustment and decentralization policies were put into place. In Mexico, for example, officials decided that farmers who could not pay for extension services would be assisted through the Ministry of Welfare. The void created by the closing of national extension services was filled by local NGOs financed by international organizations such as OXFAM, HIVOS, and CARITAS, who did not charge for their services.

International NGOs and funding agencies together with bilateral donors were instrumental in putting the inclusion

Figure 7.1 Interrelations among the Elements of Agricultural Innovation Systems



Source: Spielman and Birner 2008, modified by the author, with input from Eija Pehu and Catherine Ragasa.

Box 7.3 Peru: Agro-Innovation and Competitiveness Project

Through the Peruvian Agro-Innovation and Competitiveness Project (INCAGRO), for example, the government of Peru has sought to create or strengthen an agricultural advisory services market by paying up to 75 percent of project costs through competitive funds while requiring the direct beneficiaries to pay or mobilize the remainder, thereby creating a culture of payment for demanded services. Payment, at least in part, by farmers to receive advisory services will likely make services more client oriented, better identify demand, and manage quality control of services.

Source: Roseboom and others 2006.

of women as policy makers, researchers, extensionists, and direct recipients of agricultural services on the rural development agenda. Although some strides have been made, women remain underrepresented in higher education and as scientists (see Thematic Note 3). Thematic Note 1 discusses how alternative extension models have dealt with the barriers and opportunities for involving women extensionists and farmer entrepreneurs.

Participation in research and extension (Thematic Note 2)

Participatory research efforts have been actively engaging women. Women scientists were at the forefront in 1988 when the Center for Tropical Agriculture in Colombia took on the challenge of the Participatory Research and Gender Analysis (PRGA) Program (see www.prgaprogram.org). Likewise, women scientists and technicians were actively

engaged in the development of Farmer Field Schools (FFSs), especially in the Philippines (see Thematic Note 2).

As researchers began to work more closely with resource-limited farmers, the challenge of linking the technologies that agricultural research had produced to the needs of these farmers became evident. Studies done in the 1990s showed that women needed different technologies than men because their productive responsibilities were often different. These studies also brought to light the power implications of technology and showed how economic gains were often transferred from women to men when new technologies for women's spheres of production were placed in the hands of men. They also showed that women farmers are skilled in biodiversity management and marketing and are major repositories of indigenous knowledge worldwide. It became evident that women and men farmers do need information and skills but also that they can contribute to formal research processes from their own knowledge and skill banks. The unspoken challenge was how to build channels for knowledge and information exchange that could help make formal research more relevant while providing farmers with the technological knowledge they needed to negotiate agroecological changes and market demands.

Among the many participatory research experiences that had sprung up by the end of the 1980s, the CGIAR (Consultative Group on International Agricultural Research) centers mainstreamed the Participatory Plant Breeding (PPB-PRGA) initiative and the Community Agricultural Research Groups (CIAL-CIAT). Simultaneously, group extension programs supported by multilaterals included the Farmer Field Schools (FFS-FAO), Campesino a Campesino (MARENASS-IFAD) Management, and Participatory Technology Development (ILEIA-NL) (see specific examples in the Thematic Notes). Both groups of programs focused on gathering and exchanging information, testing existing and new technologies, and fostering innovation. All of these programs have been successful in involving women, most likely because the learning process takes place in the fields. There women are frequently responsible for many of the farming processes under scrutiny and can reflect upon the merits of the proposed technologies or practices and make informed decisions on whether or not to adopt them.

The financial sustainability of these programs, however, is under question because it has been difficult to show a return on investment above 50 percent. It could be argued that, especially in the case of resource-limited farmers and women, a need is present for group action programs because the increased human and social capacity resulting from these programs can be compared to that gained through other kinds of adult education programs (most often run by departments of education) qualifying them as a public good. It should be noted that at present only a portion of agricultural research benefits from the participatory mode and that information transfer, such as daily market prices, is considered an extension activity.

Increased access for women to education and training (Thematic Note 3)

Limited agricultural education and training have been a critical factor in limiting the opportunities for women to (1) gain new technological knowledge in their areas of production, (2) occupy positions as agricultural researchers and extensions, and (3) voice their demands for research, training, and other kinds of support, including technology, policy, and financing. Initial attempts to support smallholder farm women in the South, especially in Latin America and sub-Saharan Africa, concentrated on training women researchers and extensionists in home economics. Many of these programs concentrated on preparing professionals and technicians in the skills required by farm women in the United States and Europe (food processing, nutrition based on diets high in animal products) and reinforcing the notion that men were the agriculturalists and major decision makers regarding technology and management options for the farm unit. The need for a different kind of education and training for women has become obvious because (1) women are managers in their own right, at least for part of the farm if not the entire farm, and (2) women agricultural researchers bring new ideas and insights to the table.

A need exists for girls to be encouraged during their primary and secondary school years to take up scientific subjects. In many countries this means an intentional effort to help parents and teachers to work actively to overcome the social barriers, norms, and practices that explicitly or implicitly discourage girls. Every woman in agriculture that a young girl meets in her formative years, whether she is a farm manager, extensionist, or science teacher, is a *model for the future profession that she will choose.*

Labor-saving technologies for women (Thematic Note 4)

In most developing countries, rural women's triple responsibilities of farm work, household chores, and earning cash to supplement family incomes—tasks that often add up to a 16-hour day—are well documented. Although men even from poorer families now have access to improved technologies for use in farming and nonfarm enterprise activities, most women still struggle through their days using traditional technologies that are labor intensive and time and energy consuming. Since the mid-1980s, many programs have

supported the introduction of labor-saving technologies such as cleaner and more efficient cookstoves, grain grinders, and hoes of different lengths and weights. Some have been more easily adopted than others; some have resulted in a changing division of labor within the household that often benefits women but sometimes adds to their workload or even deprives them of economic opportunities.

The characteristics of technologies and processes not only set limits on who will use them but also directly influence how assets will be owned and managed. Better innovation results from more diverse perspectives on problem solving and provides one of the most important reasons for involving women in innovation processes. Innovation processes and women's livelihoods will be enhanced if a gender perspective is ensured when technologies are developed. Many examples can be noted of how technologies have both positively and negatively changed access to assets by women. Thematic Note 4 explores the complexity of the issues surrounding the design, use, and control over labor-saving technologies for women.

EMERGING TRENDS AFFECTING GENDER ROLES IN AGRICULTURAL INNOVATION

Several emerging trends are affecting the gender-responsiveness of agricultural innovations, including policies, social processes, information and communication technologies, learning and education, formal and informal organizations, and monitoring and evaluating progress.

Agricultural policies that support women's involvement in innovation systems

Gender-responsive agricultural policies have contributed to overcoming asymmetries in gender power relations, especially where they provided frameworks and mechanisms for improving women's access to assets including information, training, land, and technology. From the perspective of AIS, an increase in women's capacity to manage different aspects of a given system will enhance the capacity of that system to innovate and sustain itself as climate changes, market opportunities, and the need for alliances and networks become more and more demanding. Agricultural and social policy can enable or hinder the participation of women whether they work on farms or require education, or if they are scientists in national and international research organizations. Policies regarding farm and related labor practices, trade, and food safety, to name a few, influence gender relations far beyond the local level and throughout the system. Increased participation of women in research and extension organizations can contribute to the development of gender-sensitive policies and practices. Box 7.4 lists some of the more effective gender-responsive strategies.

Box 7.4 Agricultural Policy Strategies That Help to Enable Women

Guarantee women's access to land-titling rights

- Employ women agriculturalists in research and extension posts
- Focus agricultural research on management areas for which women are responsible
- Ensure places for women in higher education
- Enact labor laws that provide equal rights to women.
- Ensure that mechanisms are in place to implement gender-sensitive policies

Source: Compiled by the author.

The most important policy that affects the participation of professional women in the agricultural sciences and extension is probably one that explicitly makes their contributions in national, regional, and local organizations visible. If the professional women in agriculture are not visible in newspapers, on radio and television, and in research organizations and extension offices, it is doubtful that women primary- and secondary-school students will become inspired to prepare for careers in agriculture, let alone in agricultural research.

Women extensionists need extra support throughout their scientific careers from colleagues who have "been through it" or are empathetic with them. It is not enough to motivate women to prepare for and take up positions in extension; more is needed if women are to stay involved. We require additional steps to engage women in informal networks, working groups, and teams so that they will not only be competitive but also be visible and recognized. Overcoming the hurdles women scientists face cannot be left to the individuals alone, and it will not happen with written rules alone. An effective mentoring system needs to be put into place so that women scientists can become more effective in leveraging opportunities for advancement and conditions that will make the workplace more friendly to and acceptable for them.

Informal organizations and women's access to information and services

For at least three decades awareness has been increasing that access and control are critical to inclusion and equity. We have learned much about the difficulties that women face in accessing information, extension, advisory services, and

education, as well as in owning or acquiring land and technology. It is now common knowledge that women organize to learn, to support each other, and to gain recognition in their communities even when there is no direct economic benefit. However, we are only beginning to recognize the opportunities to reinforce social support systems such as community organizations, exchange labor groups (for example, you care for my animals one week, and I will care for yours the next), and extended family networks for enhancing know-how, information, and innovation systems. Potentially, exchange labor groups can become platforms for technology and management system improvement. Extended family networks provide opportunities for information exchange (increasingly via cell phones) and even for identifying and opening markets for goods and services nationally and internationally.

Women's groups provide a unique opportunity for women to build human and social capital and increase their capacity to participate fully in village and municipal governments where decisions on production and marketing strategies will be made. Unfortunately, extension services often find it easier to work with organizations controlled by men, and when women do participate they are seldom provided equal recognition for the knowledge and skills they can share. An urgent need exists to focus attention on the revitalization of women's and other disadvantaged groups' networks, as well as to link them into networks that go beyond their extended families and communities. The first step is to recognize that women (and not only men) already participate in groups and then to identify them. Whether women's groups are organized around a health center or among friends who herd on the same pasture or sell in the same marketplace, they have a store of social capital that can be built upon. Exchange visits among women's groups can reinforce the human and social capital of all involved and can be reinforced by the use of information and communication technology, especially community radio and cell phones to strengthen promising networks. However, in the case of radio and the Internet, appropriate investments will need to be made to develop content geared to groups of smallholders differentiated by gender and by scale and the kinds of agricultural processes in which particular stakeholder groups are engaged.

Social processes of communication and information exchange

Building and facilitating these processes are the principal tasks of effective extension, whether these take place in interpersonal and group situations or are mediated by technology. This *Sourcebook* discusses information and communication technology (ICT); one should keep in mind the opportunities it will open for research and extension in the future. Box 7.5 gives the viewpoint of one person on the ground. A challenge will be to link continuously the infrastructural aspects of information and communication with the social processes of communication that are critical to representation and equality. As more knowledge-intensive agriculture, fine-tuning of technologies and management systems, multifaceted negotiations, and alliance building become increasingly relevant, scientists, extensionists, and local groups will all need to gain more control over communication channels, processes, and technologies if effective dialogue is to take place.

Increased globalization and integration of markets presents both an opportunity and a threat to indigenous knowledge (IK). Local knowledge and IK, incubated over long periods of time by social practices, gendered division of labor, and cultural heritage, depend almost entirely on local media. Information and communication technologies have the potential to serve as a platform for sharing across the boundaries of IK and Western scientific knowledge if it fosters the use of many diverse expressions and reinforces cultural relevance.

As cellular telephone and Internet access become more common in marginal rural areas, networks among rural people are spreading not only from provinces to the capitals but also across continents. Community radio is an opportunity for women to build networks and to share information and experience that have been little tapped. Internet access, community radio, and cellular phones are providing opportunities

Box 7.5 India: Magic Boxes and Market Prices

Shankarlal does not know how the system works, or what it is called. but he knows the power of the "magic box." Every morning, together with his fellow farmers, he talks to the magic box as they check the price for potatoes at all major markets in the state. Accordingly, they decide where to take their produce. No more cheating middlemen, no more high prices.

Source: FAO, "Village User of the Gyandoot Information Kiosk in India," *SD Dimensions,* Sustainable Development Department, www.fao.org/sd/2001/KN0602a_en.htm.

to develop stronger linkages among researchers, extensionists, and farm groups. However, unless targeted investments are made to bring the technology to women and to accompany them as they take control and use the media to make their voices heard, the danger exists that gender asymmetries in knowledge among men and women farmers will increase drastically (box 7.5).

Practices that increase the commitment and empowerment of women

New information and communication technologies offer the most exciting new opportunities available to agricultural extension services if they can offer broad-based *access and control over information exchange.* One must recognize, however, that community radio has been around for a long time and has not been used as much as it could have been to bring women into the mainstream of agricultural entrepreneurship. Radio, and increasingly ICT, are available in rural areas. The challenge of the future will be *to provide content for specific user groups* of farmers and especially women to facilitate the needed shift from the "transfer of technology" to the learning mode of "innovation systems." A critical assessment criterion will be the degree to which the client or stakeholder can contribute to, give feedback on, and even generate new knowledge as a result of the information and training received through agricultural extension services. This will no doubt require the facilitation of group processes in which all involved learn and share what they know.

Strategies that engage women in agricultural innovation

The AIS perspective argues that women should be engaged not because they are in need but rather *because they are needed* if more intensified, competitive smallholder agriculture is to survive and provide sustainable livelihoods to a large percentage of presently vulnerable rural populations. Organizations and governments will need to make future investments to enhance human and social capital, and interventions will be needed to lobby research and education organizations on the importance of bringing the present and potential knowledge and skills of women farmers to bear in the construction of viable innovation systems. Groups will need to make incentives available for the technical and leadership training and employment of women scientists, technicians, and researchers, and funders will have to earmark funds for training women active in community organizations, whether they are currently in the leadership roles or not.

Innovation platforms for learning, communication, and alliance building

National and local projects and programs need to plan group activities that will allow staff to participate in learning exercises for the facilitation of innovation systems in which the benefits of *engaging a multiplicity of stakeholders* (farmers, researchers, buyers, and sellers from both public and private sectors) and *especially women* are demonstrated. Incentives such as public recognition or preferential access to information and technologies should be provided to the private sector to do contract farming with women. Competitions at local municipal and national levels should be supported where innovative management practices, products, and alliances developed by groups of farmers can be publicly recognized. Competitions can be held to award women who manage collections of germplasm, or for the design of a more efficient way of managing water, or for innovative marketing strategies, among many other possibilities.

Investment in diverse forms of research and advisory services

The overwhelming majority of smallholder men and women farmers are not presently clients for private extension services or for the kinds of advanced technologies that are currently on the market or on the shelf. If the AIS framework is to have an impact on these client groups, it will require continued social and organizational innovation in addition to new and revitalized technologies and management practices for smallholders, especially women who have a comparative disadvantage in education, mobility, and negotiating skills. If the more vulnerable members of rural communities are to benefit from that investment, groups must have careful identification of their knowledge, skills, and technology if these people are to become active contributors to resilient innovation systems. Investment in public research systems should be geared to provide incentives for multifaceted dialogue with other key actors in the innovation system from the private and NGO sectors.

Recognition for organizations that pay attention to representation by women

Many rural communities have organizational rules that operate on the basis of social inclusion and solidarity.

These values and norms are essential to rural safety nets, but they are sometimes considered to be incompatible with business-oriented organizations. Community organizations, especially those that involve a cross-section of men and women from farm households, should be recognized and rewarded for efficiency and innovation. "Rules of the game" that make it explicit that those who comply with agreements and obligations will reap the benefits should help to avoid "cultural clashes" that can occur as local organizations begin to operate high-value chains with stringent efficiency requirements. Box 7.6 provides some ideas about the direction in which existing farmer organizations need to go if they are to take on AIS challenges. Because community-based farmer organizations are usually heterogeneous due to variations in the efficiency of smallholder agriculture and to the diversified nature of smallholder agriculture, dealing with increasingly acute market competition will continue to be a challenge. Organizational settings that enable diversified smallholder producers to identify critical roles they can play in a particular AIS need to be identified and fostered. A concomitant challenge for smallholder producer organizations will be to represent the interests of a diverse membership, including those of women and younger farmers.

Box 7.6 Chile: Producer Organization for Marketing

An analysis of 410 producer organizations in Chile shows that those that succeed have developed a system of rules that (1) allocate costs and benefits to each member on the basis of his or her farming performance and market conditions, (2) enforce agreements between the organization and the individual, and (3) reduce the transaction costs of negotiating, monitoring, and enforcing agreements between the organization and its members.

Source: Berdegué 2001.

Monitoring progress of multistakeholder involvement

One of the challenges will be to track changes in the involvement of women in different aspects of innovation systems that are by nature multistakeholder and go beyond the local level. Questions that should be asked systematically include the following:

- Is the competitiveness of the activities women are engaging within the system increasing in the same measure as that of men?
- Is the activity resulting in an increase in either quality of life or income or both?
- How many of the new and adapted technologies and management strategies have been taken up by women as opposed to men, and how many by smallholders as opposed to larger farmers?
- Has some of the increased income been transformed into physical assets and human capital?
- Has local women's educational level increased?
- Have an increasing number of stakeholders at the local and national levels become involved in making decisions on the functioning of the innovation system? Among the representatives of these stakeholders, how many are women?
- Has the number of women in leadership cadres in local organizations, in research positions, and as extensionists increased? Are women involved in agricultural policy making at the national, regional, and local levels?
- Is the proportion of men to women in membership and leadership of the national, regional, and local organizations becoming more balanced?
- Are more women graduating in the fields of science that are important to agroecological management and agricultural innovation systems?

Table 7.2 provides examples of indicators for designing monitoring systems.

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

Table 7.2 Monitoring and Evaluation Indicators for Gender and Agricultural Innovation and Education

Indicator	Sources of verification and tools
Number of women and men actively involved in participatory research and extension	• Committee meeting minutes • Program and project records
Percentage of women and men among those actively participating in agricultural committees and agricultural policy setting at the national, regional, and local levels	• Committee meeting minutes • Interviews with stakeholders • Media reports • Program and project records
Number of women and men participating in farmer field schools per quarter	• Agriculture Department records • NGO service provider records • Project records
Percentage of women and men extensionists among government, NGO, and private service providers	• Agriculture Department records • NGO and private service provider records
Number of stories on women in agriculture in media per quarter	• Print, radio, and television media surveys
Number of years of formal education of farmers, disaggregated by gender	• Household surveys • School attendance and examination records
Percentage of women among total scientists, technicians, and researchers in government agricultural institutions and universities	• Staff records
Over a set period, an increase of *x* percent in incomes from land-based activities (such as agriculture or forestry) among women-headed households in program areas	• Household surveys • Socioeconomic data from statistics office
Changes over *x*-year period of project activities in household nutrition, health, education, vulnerability to violence, and happiness, disaggregated by gender	• Household surveys, before and after • Project management information service • School records
Uptake of new and adapted technologies and management strategies, disaggregated by gender and size of land holding	• Extension records • Project records
Community satisfaction (disaggregated by gender) with access to agricultural innovations (such as seeding or processing equipment, and new seed varieties)	• Group interviews or focus groups • Interviews, before and after

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

THEMATIC NOTE 1

Gender in Extension Organizations

Organizational support is critical for effective extension. Over the past 20 or 30 years, many arrangements have been tailored and reinvented to meet the needs of diverse groups of farmers, market opportunities, political situations, and funding constraints. As recently as 1996, extension was defined as "the transferring of knowledge from researchers to farmers, advising farmers in their decision making and educating farmers on how to make better decisions, enabling farmers to clarify their own goals and possibilities, and stimulating desirable agricultural developments" (Van den Ban and Hawkins 1996). but as the multinational biotechnology firms become the dominant source of crop-production technologies worldwide, the traditional role of public research and extension systems is rapidly becoming redundant. In a recent article for the *Journal of International Agricultural Research and Extension,* Burton Swanson proposes that if national agricultural extension systems in developing countries are to survive as effective organizations, they must (1) refocus on getting farmers organized (that is, build social capital), (2) increase farm income and rural employment, and (3) thereby help to alleviate rural poverty (Swanson 2006).

The services provided by extension have significant public-good attributes and are known to have a greater effect where farmers have more schooling (Anderson and Feder 2003). To date, the great majority of extension efforts have been financed by some kind of public funds, whether these take the form of international grants in aid, loans, or funds from national treasuries. Seven types of extension services are in use today (only the first two are funded entirely with private funds from farmers, their associations, or corporations):

- *Private fee-for-service programs:* In this type of program, self-employed specialists or technicians provide advice on demand to individual farmers or associations of growers. This type of extension is most common where the associations are well consolidated and have fairly high levels of human and social capital and access to credit. This is most likely the only kind of extension that is truly privately funded.
- *Private sector programs:* These are put into place by private agricultural research, input, or marketing firms to provide information, advice, and training to specific client groups who use, or wish to use, their goods and services in their agricultural enterprises. These programs often serve industry first and are often not developed in the best interests of smallholder and resource-limited producers. However, contract farming arrangements have provided an opportunity for increasing market access to smallholders and for building human and social capital among resource-limited farmers because both sides benefit more when production is efficient and of good quality.
- *Public programs that provide funds for farmers to contract services:* This type of program—such as the National Agricultural Advisory Service (NAADS) in Uganda and the Peruvian Agro-Innovation and Competitiveness Project (INCAGRO)—has shown little promise for reaching resource-limited farmers by providing them with sufficient human and social capital to design viable business plans and form alliances. With these assets at hand, groups of farmers can compete for available funds that enable them to contract needed advisory services. These programs are currently funded by international development loans (for example, from the World Bank) or loans combined with bilateral grants
- *NGO programs:* These programs are usually mandated to serve resource-limited farmers, and they became increasingly important as centralized extension programs were cut back. For many NGOs working in rural areas, support to agricultural activities is only one part of their portfolio, and they depend on research organizations

and Internet-based sources for knowledge and information that they pass on to their clients and partners. They are most often supported by grants from international NGOs that receive funds from their national governments and citizens.

- *Public extension programs:* These programs organize the flow of information from research and markets to the rural constituency and are funded by governments through their own funds, international cooperation projects, or loans. These types of programs have been centrally managed and have concentrated on production issues of major cash and food crops. The programs were then decentralized, which often weakened the advisory services because they did not receive full authority to take responsibility for results and sufficient funding. Over the last decade a great majority of these programs either have been devolved to local governments or are being transformed into fee-for-service programs. In this process, most of the backup services for extension were substantially reduced, so the quality of advisory services through training and backup services remains to be addressed.
- *Farmer organizations:* These groups also have considerable, although less well documented, experiences with extension. Large or financially secure organizations can best support these efforts. The organizations Campesino a Campesino (Nicaragua) and Mviwata (Tanzania) fostered farmer-to-farmer learning. This type of organization brings together members across farmer communities or has entire rural communities as their membership. The latter situation is most common in areas with a history of tribal groups and indigenous populations in Africa, Asia (India, Lao PDR, Philippines), and Latin America (Central America, the Andes). Organizations that represent smallholder and resource-limited farmers, such as Via Campesina (http://viacampesina.org), invest a great deal of time and effort to build the human, social, and economic capital needed to generate, access, and effectively exchange knowledge and information. Other examples include marketing cooperatives that provide information and training to members to ensure high-quality products.
- *Mixed and collaborative public/private extension programs:* These programs are beginning to emerge where public funds are channeled through farmer organizations that have a controlling interest in how the funds are allocated. Uganda's National Agricultural Advisory Services (www.naads.or.ug), although facing many challenges, provides an example in which farmer organizations may contract extension services from private providers and NGOs. In Senegal the Agence Nationale de Conseil Agricole et Rural is a mixed society whereby shares are held by government and farmer organizations. Extension services are jointly defined and evaluated by farmer organizations and their local consultation platforms. In addition, a rural services fund has been set up to make advisory services demand driven (Mercoiret 2001). Another example of this type of program can be found in Madhya Pradesh, India, where a private company and a state extension system jointly finance and provide advisory services for the use of agrochemical inputs. Table 7.3 summarizes methods of procuring funding for advisory services.

The comparative cost effectiveness of the different organizational arrangements has become of increasing concern as attempts are made to move to fee-for-service arrangements. It is hard to see, however, how the rural poor, including women, could pay for extension services, no matter how cost effective they are. Rather, it will be important to figure out how cost effectiveness should be measured and to what development goals (production goals, environmental goals, empowerment goals, and so on) it should be related, especially when increased human and social capital is more critical to the development of resilient innovation systems.

GENDER ISSUES IN NATIONAL EXTENSION PROGRAMS

Alternative organizational arrangements for future extension programs are being explored and range from the readjustment and decentralization of current systems (such as the Agricultural Technology Management Agency model in India) to the design of entirely new systems (such as NAADS in Uganda). If alternative extension systems are to contribute to improved livelihoods for women farmers, a number of simple ideas should be kept up front:

- Policy formulation and program design processes require that those groups (women and small farmers) who could be affected, either positively or negatively, have an opportunity to influence the outcome.
- Representivity and accountability contribute to sustainability. When present or potential groups of a constituency are not represented, the credibility of the organization is compromised.
- When women are active and capable extension agents, they become role models for their women associates and clients.

Table 7.3 Ways of Providing and Financing Agricultural Advisory Services

Provider of service	Source of finance for the service				
	Public sector	Farmers	Private firms	NGOs	Producer organizations (POs)
Public sector	Public sector advisory services with decentralization	Fee-based services	–	NGOs contract staff from public extension services	POs contract staff from public extension services
Private firms	Publicly funded contracts to service providers	Fee-based services or input dealers	Information provided with input sales or marketing of products	–	POs contract staff from private service providers
NGOs	Publicly funded contracts to service providers	Fee-based services	–	NGOs hire staff and provide services	–
Producer organizations	Public funds managed by farmer organizations	–	–	–	POs hire extension staff to provide services to members

Source: Birner and others 2006.

- Women bring diverse points of view to their associations or groups, their communities, development agencies, and parliament representatives. Insights and opinions can foster innovation and the quality of human and social capital.
- In many rural settings, women farmers are limited by social norms in communicating with men outside their families. In these cases extensionists can act as interlocutors, but to truly speak on behalf of women, these interlocutors need to be women.
- Because women have disproportionately fewer advantages than men (education, property, and other assets), voucher programs and other attempts to increase assets for resource-limited groups should ensure that women smallholders are adequately taken into account.
- Organizational and client confidence increases when there are greater representivity of and accountability to broader sectors of the society.
- Greater diversity of knowledge and experience contributes to more resilient and suitable technologies, farming, and management practices for more user groups.
- Many smallholder agricultural systems are extremely diversified; men and women take responsibilities for different areas of production. Therefore, the chances that overall farm productivity can be enhanced will increase if women are fully involved.

The following review of at four alternatives that are being assessed provides an idea of some of the challenges that are being faced.

ATMA farmer interest groups—India

Since 2000 the government of India's Innovations in Technology Dissemination Component has been testing new organizational arrangements and operational procedures to decentralize decision making to the district level through the creation of the Agricultural Technology Management Agency (ATMA). The goal is to increase farmer input into program planning and resource allocation and to increase accountability to stakeholders.

An ATMA is a semiautonomous organization composed of a multitude of key stakeholders involved in agricultural activities for sustainable agricultural development in the district. It is a focal point for integrating research and extension activities and decentralizing day-to-day management of the public Agricultural Technology System. An ATMA is a registered society responsible for technology dissemination at the district level. Each ATMA functions under the direction and oversight of a governing board that includes representatives of all categories of farmers in the district, including 30 percent women farmers, in addition to scheduled castes and tribal groups. As farmer interest

groups became organized at the village level, their leaders were selected to serve on farmer advisory committees (FACs) at the block level, and then the chairs of these committees were selected to serve on the ATMA governing boards at the district level.

Both the FACs and governing boards quickly became "bottom-up" in terms of farmer representation on these decision-making bodies (Swanson 2008). ATMAs receive and expend public and private funds, entering into contracts and agreements and maintaining revolving accounts that can be used to collect fees and thereby recovering operating costs. ATMAs are supported by a governing board and a management committee. The governing board is a policy-making body and provides guidance and reviews the progress and functioning of the ATMA. The management committee is responsible for planning and executing the group's day-to-day activities. ATMAs promote farmer interest groups that include women in specific crop and livestock activities, farmer-to-farmer learning and knowledge sharing, and marketing partnerships.

National agricultural advisory services (NAADS)—Uganda

Despite the overwhelming participation of women in farmer groups, men still retain significant control over NAADS processes and actual decision making, even in supposedly women-only groups. Some of the factors found to undermine women's participation and control over NAADS processes include the following:

- *Literacy rates among women:* These rates are lower than among men, and the perception and experience of local community groups are that participation in NAADS and other community activities involves some form of writing or use of English. Many women-only groups co-opted men as advisors or secretaries to provide linkage to what to them appears a literate, foreign-language-speaking outside world.
- *A culture that subordinates women:* Married women in particular are oppressed by women's triple role: productive, reproductive, and community service. The need to rush home to prepare lunch for a husband or attend to children affects the level of participation in NAADS activities.
- *Ownership and control of resources:* The level of influence or control, or both, over group activities is related to the resources at one's disposal. A key resource in this case is land, because there were situations in which a women's group chairperson has needed to beg for land for group activities from a husband or other man relative, thereby providing a window for men to exert disproportional influence underhandedly on group affairs (Stroud and others 2006). Also important in Uganda is the issue of land ownership among women-headed households (often as a result of HIV and AIDS and related illness). Despite the law protecting the woman's entitlement to the land formerly owned by her husband, lack of awareness and low literacy result in women and their children being forcefully removed from their land.

From these examples it is clear that the societal factors (literacy, women's roles, and influence) have their impact on women's participation in organizations and the way women's groups are functioning. It is up to organizations like NAADS to find appropriate mechanisms to mitigate and, where possible, change these disadvantageous situations.

National capacity-building program for rural development—Venezuela

Between 1995 and 2004, IFAD, the World Bank, and the government of Venezuela supported the CIARA Foundation to design and implement a decentralized extension service that operates at the municipal level through civic extension associations (ACEs) or grassroots producer organizations. Extension workers receive training on gender and other social aspects of community development, specifically to incorporate a gender approach in all activities. Strategies of participation, promotion, and gender equity include face-to-face contact at work and at home and the organization of dynamic and creative activities, adjusted to the needs of each group, characterized by schedule flexibility and easy access to meeting places. Extension workers design, monitor, and evaluate productive activities for families and the community that emphasize the inclusion and empowerment of women.

The new service shifted from an economic approach (aimed at improving income and production of the rural family) to a rural development approach (integral development of the family with a gender equity perspective). It facilitates the formation of rural extension networks with the participation of public and private actors, mainly through ACEs, which favor personal, organizational, regional, and interregional alliances. Experience has shown that attention to family needs, and to those of women in particular, has a high level of social relevance and is an incentive to social participation. The explicit focus on

involving women responded to a recognition that women's personal growth influences family well-being, strengthens capacity for team work, and helps consolidate rural associations benefiting the family and society as a whole (Colmenares and Pereira 2004).

NERICA: feeding people, feeding minds—West Africa

The goal of the New Rice for Africa (NERICA) project is to enable rice farmers to make enough profit from their farms to send their children to school and provide them with better health care. The project, worth about $35 million, is funded by the African Development Bank. It supports the dissemination of the NERICA varieties in seven West African countries: Benin, Ghana, Guinea, Mali, Nigeria, Sierra Leone, and The Gambia. NERICA varieties have up to 30 percent higher yield than traditional varieties. In West Africa rain-fed rice is predominantly grown by women; therefore, NERICA varieties can greatly benefit them. The regional rice project aims to involve about 33,000 farm families in participatory research approaches to accelerate NERICA dissemination. Many promising new varieties have been selected by farmers using these approaches. In The Gambia, Yirima Kafo is a participating farmer organization whose membership includes 180 women and 20 men farmers. The association has made a profit of about $4,000 and has been able to open a bank account. "We are now able to send nearly all our children to school," says Oumar Bojang, secretary of the association in Jambur (WARDA 2006).

Gender issues for professionals in extension organizations

The issue of the presence of women professionals in extension organizations and their representation in decision making is critical. Although progress has been made in increasing the proportion of women in extension, difficulties continue to abound, both for women professionals and for the organizations that wish to increase their presence. Box 7.7 lists ways of addressing these difficulties.

The most important type of formal and informal policy that affects the participation of women is the strengthening of the public image of women and their identification with and activity as role models to reinforce their *visibility in leadership positions* at national, regional, and local levels. If women doing agricultural science, teaching in universities, speaking about new findings, and making decisions that affect agriculture are not visible in newspapers, on radio, and in television or in research organizations and extension offices, it is doubtful that women primary and secondary school students will become inspired to prepare for careers in agriculture, let alone in agricultural research and extension.

Box 7.7 Issues for Women in Extension Organizations

- Increase educational opportunities for women who wish to study in the fields of agriculture
- Identify and encourage capable women to work in the fields of agricultural extension
- Create more favorable team and residence conditions for women so that they will continue in the field
- Increase the representation of women on every rung of the career ladder
- Ensure a more effective voice for women in extension through recognition and empowerment
- Provide leadership training to increase women's capacity to leverage and negotiate
- Increase opportunities and mentoring for professional networking

Source: Fair Trade Federation, www.fairtradefederation.org.

A second important policy issue is that of mentoring women who would like to become active in the field of agricultural research and extension. Although mentoring exists informally, education, research, and government organizations need to organize and support mentoring processes for their women students and staff so that they can contribute more effectively to organization building over time.

GUIDELINES AND RECOMMENDATIONS FOR PRACTITIONERS

The discussion below gives guidelines and recommendations for increasing the participation of women professionals and women producers in extension.

Increasing the participation of women professionals

- Tune in to the number of women in the active units of your organization or program—in meetings, in the laboratory, in government offices, in community meetings—and find out how they can be included.
- Incorporate personnel policies that search for qualified women candidates for research and extension positions

and for programs that mentor women in the workplace.
- Foster participatory working relationships that build mutual trust and respect across genders and generations and staff hierarchies.
- Consistently monitor to ensure that women's voices are heard in group work and meetings.
- Build on the local culture and customs of the working environment and provide physical facilities for the health, hygiene, and personal safety of women.
- Balance participation of men and women representatives of stakeholders relevant to specific undertakings of the organization or program.
- Lobby counterparts who are men to become spokespersons for gender issues at the highest level and mentor them on gender-equality issues in their sociocultural and political environments.
- Identify opportunities for scholarships and professional mentorships that women can take advantage of and share the information with women in the organization and with potential employees.
- Make the contribution of women visible at every opportunity, in multiple ways, and using as many venues as possible.
- Implement employment policies that ensure that women farmers have the opportunity to interact with women professionals specialized in production, processing, trade, and other rural income opportunities that are of interest to them.

Increasing the participation of women producers

- Recognize women as agricultural producers and traders by clearly identifying the spheres of activity in which they have specific skills and decision-making power.
- Develop policies that guarantee that women's representation in organizational decision making is commensurate with the participation of women in agricultural production in any given nation, region, or community.
- Ensure that committees and decision-making bodies include women representatives not only of local women's organizations but also of governmental and nongovernmental partners.
- Make the participation of women visible at all levels of the organization and among the farmers who interact with extension so that it will be possible to measure advances in the future better than we can now.
- Build upon the social capital of local organizations (farmer, school, health, church), especially those in which women are already engaged.
- Engage men in the task of increasing the involvement of women on the basis of what they can offer to the innovation system.

THEMATIC NOTE 2

Gender and Participatory Research

Participatory research is a perspective that emerges from the social sciences and began to be used in agricultural research in the late 1970s (see Rhoades and Booth 1982) in an attempt to understand and bridge the gap between the development of new agricultural technologies and their uptake, especially by small farmers in the South. Participatory research modes span from consultation with farmers that use technology to involvement of local groups in the identification of research issues by evaluating and adapting technologies and management practices (Probst and Hagmann 2003).

In the field of agriculture, participatory research methods were developed hand in hand with the farming systems perspective (Poats, Schmink, and Spring 1988) and followed the Green Revolution boom that had showed a limited impact on mixed (plant/animal) and diverse (multicrop) resource production systems. Both emerged as researchers and extensionists attempted to understand the complex systems that resource-limited producers, especially in ecologically diverse highland areas, were managing (for example, the Andes, Nepal, and the Philippines) and why these were not permeable to the technologies developed by the formal research institutions. Researchers observed more frequently that the Transfer of Technology model of extension was not bringing about the change envisioned for technology use by and in the management practices of the smaller-scale and resource-limited farmers. A closer look at the data on resource endowment, decision making, and management strategies used in these family agroenterprises provided by Farming Systems Research enabled researchers to begin to recognize the importance of the role of women as producers and traders worldwide (Fernandez 1994).

Although the term *participatory research* describes many kinds of farmer-researcher relationships, it is fair to say that the initial attempts to mainstream participatory research internationally were taken in 1988 (Chambers, Pacey, and Thrupp 1989). By the 1990s three streams of participatory research had taken hold. CGIAR and bilateral Collaborative Research Programs fostered the first, in which farmers contributed ideas, knowledge, and management skills to researchers' efforts to identify and select appropriate technologies (germplasm, tools, processes) that could be useful to farmers producing in more marginal settings (see box 7.8). Participatory extension came to the fore via the FAO-supported FFSs (Braun, Thiele, and Fernandez 2000), which worked in an experimental learning-by-doing group mode to help farmers reduce the quantities of harmful chemicals they were using in their fields. The third stream, termed *participatory technology development,* is a method used since the latter part of the 1990s, mostly by NGOs, to encourage groups of small farmers to test and adapt technologies, promoted by formal research, to their specific situations. The latter has been used most often by local NGOs, many of which use methods and techniques harvested and disseminated by the Center for Low External Input Agriculture in the Netherlands (www.leisa.info).

Participatory research has helped research institutions take on the questions generated by farmer organizations to overcome policy, technology, and market challenges. The National Agricultural Research Organization's Outreach Centres organized a series of multistakeholder workshops between 2001 and 2004 in which farmers, local government, researchers, and NGOs identified critical issues and planned strategies for research and action at different places within the innovation system (Fernandez and Lusembo 2002).

A recent World Bank publication indicates the kinds of changes needed to mainstream participatory research and extension in support of innovation systems:

> Taking into account the experience gained via the various modes of participatory research and the concurrent shift toward innovation systems, extension strategies face the dual challenge of supporting market competitiveness for commercial

Box 7.8 Farmers Leading Change: Integrated Rural Resource Management

The National Agricultural Research Organization outreach staff and farmers have appreciated the Integrated Rural Resource Management approach for the following reasons:

- Farmers identify constraints and work only with technologies they are really interested in. They are not instructed which technologies should be adopted and to what extent.
- Integrated rural resource management modifies existing technologies in a stepwise manner so that farmers become accustomed to improved farming practices and are not overwhelmed by externally introduced technology packages.
- Capacity building through participation in multistakeholder workshops helps all parties and especially women farmers become more confident to articulate their own needs and problems.
- Because of the way in which multistakeholder events are organized, farmers who are involved feel that they can freely express their concerns and that their communities are adequately represented.
- Contests among farmers are an effective way to recognize and induce innovativeness and to improve the sustainability of impacts and benefits of improved practices.
- Farmers report that the benefit of integrated rural resource management technologies can be observed in the improved condition of natural resources and higher yields. Systematic assessment still needs to be done.
- Facilitating the spread of integrated rural resource management technologies from farmer groups' trial plots to the entire farm holdings of individual farmers, together with intensification of farmer training, involvement of schools, and implementation of effective communication channels from researchers to farmers and back, remain challenges.

Source: Statement by Peter Lusembo, Centre Manager Mukono, 2004.

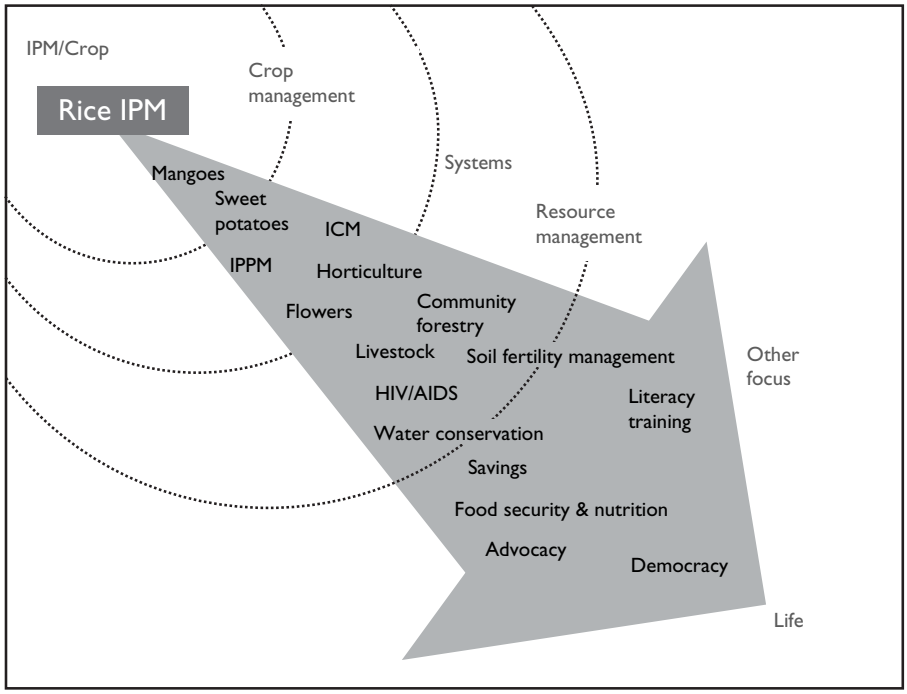
agriculture operating in a global market while addressing poverty in rural areas. The agenda for many extension programs will need to shift from an exclusive focus on agricultural production to a broader range of services relating to marketing, environmental conservation, poverty reduction, and off farm activities. Participation changes the roles of extension specialists—from messengers and advisers to facilitators—and may require change in organizational structures and moves toward cost sharing. Participatory approaches will change, organizational structures, facilities afforded local communities (e.g., resource centers for information and capacity building), and financing mechanisms (Alex and others 2004: 9).

GENDER EQUALITY AND PARTICIPATORY APPROACHES

The Overview of this Module explains why the construction of robust innovation systems depends on the engagement of limited-resource farmers, food processors, traders, and consumers, both men and women. When looking at agricultural innovation processes through the gender lens, participatory action research springs to the forefront because it focuses on how to identify, involve, and learn from the potential users of developing technology. More than half of resource-limited farmers, small-scale food processors, and many local traders are women, and so research and extension need to engage with them if agricultural science hopes to provide information and technology they can use. Participatory research in many of its modes not only allows for but also enables scientists to engage with women users.

Women experimenting and learning in the fields. Farmer Field Schools bring farmers together in the field to explore how to improve production by experimenting in the fields. Because women all over the world are in the field—planting, weeding, harvesting—FFSs suit women at least as much as men in many countries. The FFSs began with rice fields in the Philippines but expanded to multiple crops in the early 2000s and are now experimenting with animal production systems, crop-animal systems, and even market systems. The FFS perspective is an example of how the community takes ownership of the methodology and runs with it. Although the perspective does not specifically focus on gender equity, the FFSs meet in the fields where women work, and with their central role, they naturally become members and leaders of the FFS groups (CIP-UPWARD 2003). Figure 7.2 illustrates how the sphere of influence of the FFS methodology has broadened from integrated pest management to

Figure 7.2 Changes in the Focus of Farmer Field Schools



Source: CIP-UPWARD 2003.
Note: ICM = integrated crop management; IPM = integrated pest management; IPPM = integrated production and pest management.

encompass soil fertility and water conservation over time. It shows the different "waves" in adapting the FFSs.

Controversy surrounds the cost effectiveness of the forms of participatory research that engage farmers in medium- or long-term learning processes (for example, FFSs; see Quizon, Feder, and Murgai 2001), for the most part because basic and adaptive technology development and human and social capacity building are evaluated independently as research or extension, respectively. As a result, multi-institutional impacts and long-term benefits to rural communities have not been assessed to date.

Expanding research to include productive activities managed by women. One of the most tangible and visible impacts of participatory research is the way it has been able to lead researchers to focus on the productive activities that women engage in. In the Andean region until the late 1980s there was almost no information available on the health, nutrition, and production parameters of local breeds of sheep and cattle, yet Andean crops, especially potatoes, had been studied for years. It is now well documented that on farms in the high Andes, where both husband and wife are present, men make more management decisions regarding crops, while women manage livestock (box 7.9). On the other hand, the International Livestock Research Institute chose to locate its headquarters in East Africa, where men manage cattle, and attention began to focus on labor-saving technologies for women only after research about farming systems generated data on their predominant role in crop production.

Box 7.9 Peru: Taking Care with Culture-Bound Assumptions

When the Small Ruminant CRSP (Collaborative Research Support Program)—Peru began work in indigenous communities in the highlands, it called the men together to discuss how to improve management and health practices. Although the men came to the meetings—always requesting support for cropping systems—it was only after two years, when a practice session for castration was set up, that the men stated point blank that it was the women who should be called in because they manage the animals.

Source: Fernandez 1994.

Participatory research in the Andes also brought to the fore the role of women in biodiversity management, whereas in East Africa it highlighted their role in managing indigenous vegetables. Making these lessons part of their goals, the International Potato Center research agenda has been broadened to include sweet potatoes and other indigenous tuber crops managed by women in Africa. Recognition of the role of women in genetic resource management resulted in the Participatory Plant Breeding effort, a subprogram of the Participatory Research and Gender Analysis Program, a cross-center effort of the CGIAR. The Participatory Research and Gender Analysis Program is currently being downsized, in part because of its limited impact on research geared to meet the needs of women smallholders over the last decade. This decision speaks to the size of the institutional challenges facing those who recognize the importance of women's contribution to innovation systems.

Policy issues to increase equality through participation in research. Until recently, linking processes of technology generation with those of income generation and agroenterprise development was generally left to organizations that focus on one but not both. On the one hand, agricultural research organizations have largely focused on increasing the productivity of food crops in small-scale farming systems but have neglected linking farmers to markets to diversify and increase their incomes. On the other hand, initiatives to link farmers to markets have been spearheaded by government agencies, the private sector, and to some extent nongovernmental organizations. However, these initiatives have tended to focus on export crops using top-down approaches. Few have looked at building farmers' capacity to identify and develop enterprise opportunities, to match market opportunities with investment in improving the resource base, and to build local capacity to solve problems and to generate and access technologies through farmer participatory research (Sanginga and others 2004). Research documents innumerable cases in which the introduction of new technology in small-scale farming systems has resulted in a shift in the control over the production from women to men, especially when increased cash income is involved (box 7.10). When researchers take into account the link between technology generation and income, possible shifts in control over resources from women to men can be avoided.

GOOD PRACTICES AND LESSONS LEARNED

The discussion below summarizes the experiences in project design and implication and the lessons learned.

Box 7.10 Technology Can Shift Control

In the Andes some women still shear their sheep with knives and can win a contest for speed and cleanliness against men who use shears. Hand shears were initially provided through extension programs to men. Women soon realized that once the men took over the shearing, they also took control of the wool that had previously been a product that they processed and sold.

Source: Fernandez 1994.

Enabling rural innovation

Best practices for improving women's involvement in innovation processes are those that promote equity through representation and participation. During the last few years a group of action-oriented researchers from the Center for Tropical Agriculture and the African Highland Program have developed a strategy for gender-responsive research. They have brought together many of the lessons learned over the last quarter century and have set them out as elements in a process that can foster innovation systems. In the words of the multidisciplinary team, "the strategy at the community-level seeks to eradicate gender discrimination, and promote gender equity in key areas such as participation in groups and committees, leadership positions, decision-making, asset ownership, gender differentiated enterprise options and food consumption crops" (Sanginga and others 2004).

The strategy promotes gender and equity in the access to technologies and market opportunities, as well as in the distribution of benefits and additional incomes to different categories of farmers. The researchers who have worked to pull the strategy together have chosen to encourage and sustain active participation and cooperation of both men and women while creating gender awareness at the community level through interactive adult education methods. This is easier said than done, so the following three critical gender questions must be kept on the table and revisited at each node in the process:

- Who has access to and controls resources?
- Who does what, when, and where?
- Who benefits from what and how?

When these questions are revisited often, strategic decisions can be made to ensure that gender equity is in the making.

These principles are the basis of the Participatory Learning and Action Research Project, which tracked changes in men and women farmers' knowledge regarding community by-laws. Over a five-year period, women's confidence improved, and perceptions of their status within the communities changed. Most men and women farmers interviewed (95.6 percent) indicated that women's participation in decision making and community leadership positions had improved over the last three years. On average, women represented between 34 and 50 percent of the membership in village by-law committees and policy task forces. Individual interviews and focus group discussions revealed that men's respect for and consideration of women had improved considerably. Both men (85.7 percent) and women (88.2 percent) shared the opinion that the project significantly enhanced women's self-esteem and their confidence to speak in public.[1]

Building and managing effective partnerships

Resilient innovation systems require the building and managing of effective partnerships. In the case of rural communities and small-scale farms, men and women are very strategic partners who will need to negotiate agreements for resources (loans, information resources) and negotiate with other local stakeholders (input and other traders, transport, more and less influential neighbors). A key to effective partnerships is balanced representation that can seldom benefit women unless they are empowered to recognize themselves as equal partners.

Building on community assets and opportunities

Participatory diagnosis that makes community assets and opportunities visible will facilitate the active involvement of women in realistic plans for the future that can lead to concrete action strategies for the present.[2]

In the Mafungautsi State Forest in Zimbabwe, the Center for International Forestry Research (CIFOR) began its activities with transformation training that made it possible to bring groups of people from the villages around the forest together for a series of "visioning" and action planning meetings. Natural subgroupings emerged according to the nature of the resource that people were interested in or engaged in harvesting (legally or illegally). Beekeeping and timber harvesting tended to interest only men, thatch grass harvesting cut across gender lines, whereas broom grass harvesting seemed to be of particular interest to women and especially women-headed households. Social organization around particular resources emerged as the dominant strategy for reempowerment, and it became clear that the user groups were willing to play active roles in managing the resources they had chosen as their focus. As a result, antagonism and tensions declined, and the first steps toward a genuine partnership were taken, with two-way flows of information and active facilitation of user-group initiatives by the Forestry Commission.[3]

Identifying market opportunities and selecting community agroenterprises

Formation of farm and market research groups that include women to select, test, and evaluate marketing opportunities, technology options, and approaches to sustaining their natural resources can help ground the prioritization of opportunities and constraints.[4] In both the Andes and East Africa, women are powerful actors in the local market. Harnessing their knowledge and experience in participatory market research that identifies and evaluates market opportunities for competitive and profitable crop and livestock products is critical. Women are also key opinion makers about incentives for investment that can improve the community and family resource base to the benefit of the greatest number of members.

Increased income among resource-limited farmers has been shown where the International Center for Tropical Agriculture's (CIAT) rural agroenterprise approach has been used. In Malawi both men and women farmers earned $2.50 per day compared to the national average of less than $1.00 per day. The integration of gender in the community agroenterprise approach has resulted in more equity in the sharing of benefits for some of the enterprise crops compared to other traditional cash crops, such as tobacco. However, as the crop becomes more and more commercialized, the income share of women is becoming smaller, although the absolute amounts of money they earn increases. An example of this trend can be seen in Malawi, where the income share of women goes down as the crop shifts from a traditional subsistence bean crop managed by women to a commercial crop with formal markets.[5]

Strengthening social capital and empowering rural communities

If women are to broaden their sphere of influence beyond the household, community skills to leverage resources and to negotiate the right to control and manage them are critical.

Effective empowerment is directly related to the capacity of men and women farmers to organize to leverage information, production resources, and marketing opportunities. Prioritization and selection of agroenterprise options that ensure household food security and local safety nets make it imperative that women be present when research questions for redirecting production or increasing market share are put forward.

Participatory monitoring and evaluation

Monitoring and evaluation are critical to any innovation process and should provide for tracking the participation of women and other vulnerable groups. However, it should not be an add-on but rather an ongoing process that is born with the partnerships and activated in the preplanning stage. Monitoring and evaluation criteria need to be negotiated among all stakeholders and must take into account changes in the innovation system as a whole rather than changes in a single practice or product.

The purpose of the Sub-Saharan Africa Challenge Programme is to enhance the contribution of agriculture and natural resource systems to improved rural livelihoods, increased food and nutrition security, and sustainable natural resource management. It seeks to integrate the disciplines involved from production to consumption in integrated agricultural research for development. The integrated agricultural research for development approach emphasizes the establishment of broader partnerships and innovation platforms to strengthen participation, build linkages with policy processes, and stimulate institutional change. The program developed through a process of competitive selection of concept notes and full proposals. Research teams discussed how to identify indicators on gender, poverty, and vulnerability in a participatory manner with project beneficiaries. At the same time, basic principles of comparison were discussed and incorporated into preliminary plans for baseline studies.[6]

GUIDELINES AND RECOMMENDATIONS FOR PRACTITIONERS

- Identify research issues using participatory diagnosis involving both women and men farmers.
- Encourage producer men and women to provide information on local, indigenous, and traditional ways of dealing with the identified research issues.
- Ensure diverse gender perspectives by suggesting that initial "data collection" be done in separate groups with or by women and men.
- When issues are identified that *either* women or men find relevant, work on at least one issue of importance to each gender group.
- When building community teams for participatory research (for example, Comités de Investigación Agrícola Local, FFSs, and Participatory Technology Development [PTD]), and if the issue is of interest to *both* men and women, be sure that half the members of the group are women.
- Innovate ways of registering information and documenting processes that make findings visible to *all* group members and the wider community.
- Use methods, techniques, and tools that facilitate group analysis and information sharing (for instance, photographs, drawings, straightforward charts, and tables).
- Celebrate *each* new idea, suggestion, or way of doing something, even if it is not evident how it can be immediately incorporated into the task at hand.
- Ensure that *all* group members (women, men, young, and old) have a voice in or a contribution to *every* meeting or activity, no matter how small.
- Explore ways that group members can share information with other groups or within their own community. Beware of practices and attitudes that are exclusionary.

THEMATIC NOTE 3

Gender Approaches to Agricultural Extension and Training

Despite women's importance in agricultural production, agricultural extension and training (AET) during the training and visit (T&V) period focused almost exclusively on men.[1] Women were seen primarily in their reproductive role and far less often in their productive roles in agriculture. Advisory and other services are still largely provided by men. Structural adjustment measures did not allow extension systems to recruit new staff, let alone to improve the staff gender balance, although NGOs working in extension generally have a better gender balance.

Despite the increasing involvement of women and especially women's groups in AET over the past decade, chronic underinvestment in the knowledge and skills of women is a particular handicap for agriculture, especially in agriculture-based African countries. Not surprisingly, gender inequality remains a constant theme in any analysis of agricultural development, including analysis of AET's role in development.

Each Module in this volume calls attention in various ways to opportunities for agricultural investment, growth, and income that have suffered as a result of persistent gender blindness in agricultural institutions and development projects. Within AET institutions, women remain underrepresented as students, instructors, extension agents, and researchers, and agricultural innovation processes are hardly ever directed at women. This omission continues despite evidence that farm productivity increases when women farmers receive the same advisory services as men (Bientema 2006).

TRENDS IN WOMEN'S PARTICIPATION IN AGRICULTURAL EDUCATION AND TRAINING

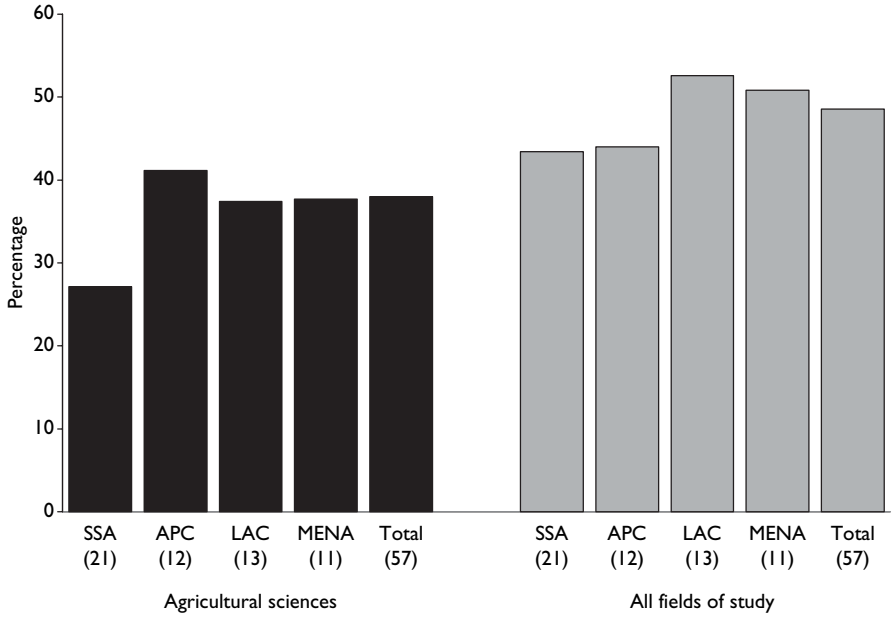
In tertiary education about half of the more than 22 million students enrolled in all fields of study in 57 developing countries were women in 2000–04 (fig. 7.3). Only 3 percent of these students were enrolled in agricultural sciences; of these, 38 percent were women. The share of women students across regions ranged from 27 percent in sub-Saharan Africa to 41 percent in Asia and the Pacific.

A recent World Bank thematic study on agricultural education and training (World Bank 2007) synthesizes research from 15 African countries. In Benin, for instance, 20 percent of the students in the Colleges of Technical Agricultural Education were women. In Ethiopia's 25 agricultural technical training centers, only 11 percent of enrolled students and 9 percent of graduated students in 2005 were women. Similar gender imbalances appeared at the university level, in the College of Agriculture, Hamaraya University School of Graduate Studies, where women graduates made up less than 3 percent of graduates between 1979 and 2003. In Cameroon's University of Dchang, 22 percent of students in the Faculty of Agronomy and Agricultural Sciences were women, but almost half of these (44 percent) were concentrated in the Faculty of Economics and Sociology (that is, not in agricultural sciences). In Mozambique women within the Faculty of Agronomy and Forestry Engineering, Univerdade Eduardo Mondlane, accounted for 28 percent of undergraduates and 35 percent of graduates in 2005–06, and one-third of the teaching staff were women. Fewer than one-fifth of students at the Agrarian Institute of Boane Agricultural Collage were women.

Young women generally are not encouraged to focus on science—particularly biology and agricultural science—in secondary school, with the result that African women's participation in agricultural sciences in universities is roughly half of that in other fields. A United Nations Educational, Scientific and Cultural Organization (UNESCO) survey in 1998 found than only 8 percent of agricultural faculty members were women, compared with more than 50 percent in many European countries.

These data reflect the continuing challenges for higher education institutions to meet the needs of women who

Figure 7.3 Percentage of Women Students in Higher Education by Developing World Region, 2000–04



Source: Adapted from Beintema 2006.
Note: The number of countries included in regional totals is shown in parentheses. SSA = sub-Saharan Africa; APC = Asian-Pacific countries; LAC = Latin America and the Caribbean; and MENA = Middle East and North Africa.

aspire to business or scientific careers in agriculture. Some positive changes are gradually happening, however. UNESCO reported that the share of women students in the agricultural sciences increased during the 1990s (Beintema 2006). Sokoine University of Agriculture in Tanzania provides an impressive example of what can be accomplished. The university has vigorously assessed and upgraded its academic programs and surveyed graduates, employees, and private and public job markets. Ultimately it increased its graduate output of women tenfold over the last decade and raised their share in Sokoine enrollment from 17 to 29 percent. In the College of Agricultural Studies at Sudan University of Science and Technology, women student enrollment increased from 10 percent in the 1980s to 72 percent in 2007 (Gebre-Ab 1988; Idris 2007). The momentum of these successful approaches must continue for the effectiveness of AET programs to increase. In the Sudan example, the major impetus for increased enrollment of women was a policy that set the intake of women students at a minimum of 30 percent and furthered the construction of new housing for women. Enrollment by women has grown so vigorously during the last decade—not only because of new university policies but also because of rising women's literacy and secondary enrollment rates in urban areas—that the number of women matriculating has exceeded the number of men, presenting university administrators with yet another dilemma related to the men-women student ratio.

KEY GENDER ISSUES

The mission of AET is to train people to contribute to agricultural productivity in ways that will increase economic growth and reduce poverty. In the last decades AET institutions have suffered from neglect as resources have declined and less attention has been paid in general to educational institutions, their functioning, human capital development, and facility management. Women have been increasingly underrepresented at all levels of AET institutions, from postsecondary to tertiary and higher education, although detailed gender-disaggregated data are available only very sporadically or not reported at all.

As agriculture and rural development have gained renewed attention in recent years because of globalization, trade liberalization, and changes in information and communications technology, the question of human resources in agriculture has also come to the fore. International concern over the environment, natural resource management,

health care (HIV and AIDS as well as chronic ailments such as malaria and malnutrition), and women's empowerment have brought special impetus to intersecting discussions of agriculture, rural development, poverty reduction, and livelihood strategies in rural and urban spaces. Many of these discussions have cast new light on gender issues in agriculture, given women's central role in household food security, health, and nutrition. Clearly, AET institutions must address gender issues on many different levels if they are to develop human resources to address new realities in agriculture and development.[2]

The key gender issues in AET and actions to address them can be broken down under a few overarching themes.[3]

First, recognize women's roles in agriculture, and remove obstacles to fulfilling them:

- Perceptions of agriculture as a domain for men, professionally or otherwise, and the undervaluing or sheer invisibility of women's contributions to agriculture and food production must be changed through extensive research and through communication and political action using the resulting data.
- Traditions, customs, and culture hinder women from receiving agricultural extension and other support services or production inputs. Often their mobility is curtailed, especially but not exclusively in remote locations. Extension workers, facilitators, and students should be motivated and supported to reach women farmer groups and remote locations, or transport systems should be provided for the groups to reach service locations.
- Extension services often seem to follow a "man-to-man" technology transfer approach in which men extension staff work with men farmers. Not only are women neglected, but the messages and information provided to the men do not reach them. Extension support should be given directly to rural women in their multiple roles as farmers, environmental custodians, and household managers.
- Rural women's educational and training opportunities are often limited and "discriminatory" if legal measures do not mandate primary and secondary schooling for boys and girls, which is the first step toward vocational and technical training.

Second, give women better opportunities for agricultural learning:

- Literacy and secondary education of women are prerequisites for higher education. Where literacy is high, women's enrollment rates are high. National efforts to improve women's access to postsecondary, tertiary, and higher education by supporting basic literacy and secondary education are warranted.
- Offer special science courses for girls to fulfill the prerequisites for higher education. Enhance educational offerings in agriculture, food processing, preservation and preparation, and nutrition.
- Build awareness and provide career counseling for boys and girls. Young people need to be aware of professions in agriculture and rural development, such as farming, extension, teaching, agribusinesses, private sector occupations, or public service.

Third, enable women to participate in higher education:

- Establish infrastructure for women students. Provide sufficient accommodation and dormitory space, with the accompanying service, sanitary, and child care services and consideration of family obligations.
- Provide financial aid, scholarships, and grants for women.

Fourth, ensure a nondiscriminatory environment for women students and staff in agricultural education and training institutions:

- Allocate budgetary resources for gender sensitization courses for all staff and students in the training institution.
- Introduce and enforce policies to prevent discrimination, sexual harassment, and acts of violence on the basis of gender, ethnicity, or other types of diversity. Provide mechanisms for reporting such abuse confidentially and without recrimination.
- Support gender-sensitive policies and undertake initiatives that address HIV and AIDS and other sexually transmitted diseases in AET institutions for staff and students.

Fifth, revise the curriculum to reflect current and prospective needs and interests:

- Revise and modernize curricula in higher agricultural education to ensure that they include socioeconomic and gender analysis training for men and women students. Ensure that the curriculum is relevant to women's roles and contributions to agriculture, agribusiness development, and household management.
- Provide teaching materials, tools, and facilities for applied and practical training, such as facilities for developing appropriate household and farm technologies

or laboratories for food processing, preservation, and preparation.

- Introduce recent approaches, such as "livelihood diversification," into the curriculum. Identify such indigenous knowledge domains, skills, and beliefs that can serve as entry points for students to carry out action research in urban, periurban, rural, and remote locations with limited infrastructure (roads, energy, schools, and health services) and limited access to roads and markets. Provide support for faculty and students to undertake new research on livelihoods diversification activities relevant to rural women, such as gardening and trading.
- Use gender mainstreaming as a management tool in the training institution to promote equity and effectiveness in resource use and to ensure that gender-disaggregated data are collected and reported.

Sixth, promote training markets, which could serve development projects, private extension service providers, and public extension services:

- Hire women experts as consultants for situation-tailored training for staff. This will provide women with employment opportunities and, at the same time, will give them an opportunity to sell their training skills in the new markets.

GOOD PRACTICES AND LESSONS LEARNED

The following discussion summarizes the experiences in project design and implication and the lessons learned.

Achieving better gender balance in AET graduates

Targeted recruitment policies, affirmative action initiatives, academic enrichment programs, and earmarked scholarships all can increase women's enrollment. Various measures to achieve gender balance have been suggested and tested, such as developing gender-sensitive curricula, introducing new admission policies, providing adequate accommodation for women students, proposing quota systems, and recruiting more women lecturers (Abdelnour and Abdalla 1988). Other measures include monitoring dropout records by gender (to retain women students) and introducing policies against sexual harassment. These measures deserve to be tested systematically to ensure that a country's best minds are engaged in its development. Box 7.11 gives a more extended list of interventions to recruit, retain, and promote women in agricultural training institutions.

Improving women's opportunities to benefit from higher agricultural education

Access to higher agricultural education is essential for women to enter agricultural careers at all levels, from the field to research and academic organizations, to national and international institutions for agricultural policy, and to national and international development institutions. Case studies by organizations in the field in the Caribbean Community, Côte d'Ivoire, Jordan, Nigeria, and the Philippines revealed that women's completion of higher agricultural studies did not necessarily translate into an equal opportunity to benefit from that education; nor did it prevent discrimination against women in employment and public life.[4]

Box 7.11 Actions to Help Tertiary Education Institutions Recruit, Retain, and Promote Professional Women

- Establish policies that acknowledge the dual role of women (as professionals and homemakers)
- Reduce the stress of more committee work and greater non-research-track demands
- Provide mentoring (especially with regard to contract negotiation, workloads, priorities, performance, and career track)
- Recognize broader experience when appointing women and setting salaries
- Broaden and weigh the service component in promotion criteria
- Address both overt and subtle harassment of women
- Develop more practical and service-oriented curricula that appeal more to women and are more in keeping with the needs of twenty-first-century graduates
- Address the stigma attached to affirmative action appointments, and reduce the bias against women where affirmative action is not a factor
- Consider offering flexible work schedules to women and men
- Set up a crèche and after-school care facilities for staff and students

Source: Muir-Leresche 2006.

Few women were found in the top positions in agricultural institutions, whether in teaching faculties, government positions, NGOs, or the private sector. Improving opportunities for women to benefit from their agricultural education is even more of a challenge than improving women's access to higher AET (see box 7.12 for recommended measures).

Revising curricula and expanding learning options

Updated information is needed about labor market demands to revise curricula and practical competency requirements, especially for modern agribusiness management and global development issues, such as trade and markets, in industrialized and developing countries.

Teaching methods should be updated to cover information and communication technologies and problem-solving techniques. Knowing how to apply theoretical knowledge and use it creatively is critical for success. Men and women students and teachers benefit from learning how to conduct socioeconomic and gender analyses, which can be applied to various technical agricultural fields and ultimately enhance the understanding of gender roles in agriculture and rural development (FAO 2003).

At all levels—secondary, tertiary, or postgraduate—interdisciplinary approaches must be considered in developing the coursework needed to complete AET requirements. Courses on food and nutrition, food processing and preservation, water, fuel, and environmental sanitation management are equally important to men and women students. Traditional technical agricultural subjects must be complemented by courses in natural resource management, environment, and other topics that are important to smallholder agriculture, including household food security and household resource management, which are critical to all household welfare and livelihoods (Eckman 1994).

Using household resource management as an entry point allows extension workers to strengthen their understanding of different client groups' constraints, opportunities, and needs, which will enhance men and women farmers' learning and mobilization to improve their livelihoods (box 7.13). Because access to tertiary education is often limited to women from privileged families, more attention could be given to education and training contents for these professions at vocational and postsecondary levels, so that women students coming from "average" or poorer families would have opportunities to be trained for such technical jobs.

Box 7.12 Improving Opportunities for Women to Benefit from Their Agricultural Education

1. *Measures to better prepare women students for agricultural careers at all levels,* such as increasing nontraditional agricultural occupations for women and increasing practical work and skills training in management, research, extension, and specializations for which there is a job market in the country. Women also need greater opportunities to take part in postgraduate and in-service training in skills necessary for career advancement.
2. *Legislative measures* to prevent discrimination in hiring and employment and to prohibit harassment on the basis of gender.
3. *Measures to improve working conditions for women,* taking into consideration family responsibilities. These could include flexible working hours, provision of child care facilities, maternity and paternity leave, and flexibility in posting women with family responsibilities in the field.
4. *Measures to provide financial aid and services to women* to set themselves up in agricultural enterprises or to become established as farmers. These measures could also include assistance to women agriculturists and extensionists to provide their clients with inputs, credit, and other services.
5. *Measures to professionalize agricultural occupations* to make them more attractive.
6. *Measures to improve salaries and emoluments,* especially for those working in rural areas, and to eliminate disparities in salaries of men and women.
7. *Organization of women agriculturists in professional associations,* which can act as pressure groups to promote women's access to agricultural education and occupational opportunities.
8. *Gender sensitization at all levels* of national and international governmental and nongovernmental bodies dealing with agricultural development policies and planning, including research institutes.

Source: Marilee Karl, "Higher Agricultural Education and Opportunities in Rural Development for Women: An Overview and Summary of Five Case Studies," Report No. 40997-AFR, FAO, Rome, www.fao.org.

Box 7.13 Revitalizing the Dialogue on Household Resource Management

"Household resource management" has been defined by Engberg as the "process of making decisions about how to maximize the use of resources, such as land, water, labor, capital, inputs—whether purchased or produced on-farm—cash, agricultural credit, and agricultural extension" (Enberg 1993: 2). Each of these resources is accessed and managed by women and men differently, based on the gender division of responsibilities and management.

Curriculum reorientation and relevant training in agriculture and home economics have been a concern for FAO, other "food and nutrition" agencies (such as the World Health Organization, International Fund for Agricultural Development, and the World Food Program), bilateral development partners (Canadian International Development Agency and the Finnish International Development Agency), and national and international professional organizations (International Federation for Home Economics) since the 1980s, when rural development agendas increased their attention to rural poor and smallholder farm families. It was recognized that the roles of household members (men, women, the elderly, and youths) in managing farm and household resources and production activities needed to be considered in developing training units and curricula, so that students would graduate with the skills to improve rural livelihoods. Several approaches to teaching about household resource allocation and management have been reconceptualized. Corresponding training units have been developed, tested, and evaluated in various institutional settings, in both English- and French-speaking countries and cultures (Eckman 1994; Engberg 1993; FAO 2002, 2004).

Source: Author.

The major challenge has been to develop learning and research activities that enhance problem-solving approaches for typical tasks in rural households, which can be grouped as follows:

1. S*ubsistence production:* crop production/gardening, livestock and poultry, forestry, hunting and gathering, home manufacturing, food processing, home construction and maintenance, and domestic/household activities
2. *Home production:* intrahousehold reproduction: caring for, rearing, and educating children; attending to the elderly, sick, dependents, and visitors; interhousehold obligations such as rituals and ceremonies; and community service
3. *Market production:* participation in the local economy—wage labor, services, trading, and business; participation in the larger economy—commercial farming, business, or industry
4. *Social activities and personal needs:* recreation, sports, family relations, and personal care.

Within this approach, the AET graduates as future development practitioners, policy makers, and planners are able to better understand, analyze, and address farm household needs and gender roles in task allocation, time and financial management, household food security and nutrition, decision-making dynamics, and communication to meet the changing development demands of rural households (Hamada, Kirjavainen, and Gapasin 2002).

Strengthening outreach, linkage, and partnership programs

A recent Kellogg Foundation study on AET programs in African countries has documented various partnering strategies undertaken by donors, NGOs, educational institutions, and bilateral organizations (Kingslow 2007). These include formal, informal, and in-service AET programs that benefit small-scale farmers and rural communities. For instance, Sokoine University of Agriculture in Tanzania provides outreach programs in which agricultural researchers and tertiary-level faculty work in rural communities. Their multiple technical expertise in agricultural production, postharvest crop handling, rural processing, value-added agriculture, agroforestry, enterprise development, and credit serve smallholders, including women farmers.

Sokoine University also "produces" highly employable men and women graduates. A recent tracer study was done to review programs offered by various university departments in relation to the current and future job market and determine which labor market demands should be reflected in courses and skill sets. The assessment revealed that 28.2 percent of tracked economics and agribusiness graduates

were women and were employed not only in government but also in banking institutions and local and international NGOs working in agriculture (SUA 2005). Sokoine University also has expertise and degree programs in food science and technology and in home economics and nutrition (www.worldagroforestry.org), which give graduates additional competencies to work with household food security issues in nutrition research and training institutions in multiple workplaces.

Furthermore, Sokoine University has a strong commitment to strengthening linkages across the agricultural research, education, and extension systems, with active men and women farmer participation. It also offers a "sandwich" partnership program with U.S. universities in which students study abroad and then undertake applied research in their home country (which also helps to ensure that students return to work in their home country or region; Kingslow 2007). Many U.S. universities are looking to rebuild and revive the tertiary training programs offered in the 1980s to students from developing country universities.

Universities in the Nordic countries have also implemented partnership programs between research faculties and AET institutions in developing countries. For more than 20 years the University of Helsinki has conducted partnership programs in farming systems and agroforestry research and supported long-term tertiary and higher education programs for both men and women students and professionals with Sudanese universities (two major universities involved in this program are the Faculty of Agriculture and Forestry of Khartoum University and the Shambat College of Agriculture of the University of Science and Technology, Khartoum).

Promoting scholarships, grants, and mentoring programs for women

Recent initiatives to strengthen gender integration in AET include the provision of scholarships earmarked for women to attend technical and higher educational institutions for degree and exchange programs in agriculture and life sciences. These scholarships have been provided by various foundations, including Winrock International, African Women Leaders in Agriculture and Environment (AWLAE), the Rockefeller Foundation, and the Carnegie Corporation. Carnegie stipulates that the study or research program must be "partnered" regionally among at least three universities. Some professional organizations have also introduced professional mentoring programs on postgraduate career advancement opportunities for women agriculturalists, scientists, and managers.

The Bill and Melinda Gates Foundation recently provided $13 million for educating and training African women in the agricultural sciences under a four-year grant to the CGIAR Gender and Diversity Program. The grant will directly benefit 360 women in agricultural research and development, along with some 40 institutions in sub-Saharan Africa (specifically in Ethiopia, Ghana, Kenya, Malawi, Mozambique, Nigeria, Tanzania, Uganda, and Zambia). Competitive fellowships with three capacity-building cornerstones (mentoring, science skills, and leadership development) will be provided. The AWARD program will operate in close partnership with several of Africa's agricultural research networks and universities as well as CGIAR agricultural research centers (www.genderdiversity.cgiar.org).

Monitoring a gender perspective in tracer studies

Tracer studies that survey graduates of institutions of higher education are often seen as an important tool of institutional development, especially when employment markets are changing rapidly. Knowledge of graduates' whereabouts and working conditions and retrospective assessment of their course of study might stimulate debate on revising and initiating programs. Many tracer studies have remained gender blind, however, beyond disaggregating respondents by gender, and they have lacked gender-aware reporting. Systematic gender monitoring is needed in tracer studies, from their design to final reporting, to ensure that gender-relevant information is collected and analyzed and thus useful for policy making, AET planning, curriculum development, and human resource management.

Between 1996 and 2000, 15 tracer studies were done in seven African countries (Cameroon, Ghana, Kenya, Malawi, Nigeria, Tanzania, and Uganda), sponsored mainly by the Association of American Universities (AAU) Study Program on Higher Education Management at the Universität Kassel in Germany. About 8,000 graduates participated in the studies. They answered a lengthy questionnaire about the transition from higher education to work, job search, employment conditions, use of knowledge and skills, appropriate position and job satisfaction, and retrospective assessment of study conditions. Because all studies used nearly the same questionnaire, the resulting data offer an extraordinary opportunity for a comparative analysis.[5]

In the United States, a Food and Agriculture Education Information System (FAESIS) has been set up to explore and analyze data on employment opportunities for college graduates between 2005 and 2010 (CREES 2005). FAESIS data are collected from institutions offering courses in food,

agriculture, natural resources, and human sciences in specific areas. Gender and ethnicity of the graduates are also analyzed.

Engendering training components in agricultural development projects

Training is increasingly a component of many agricultural development projects. Training often omits gender perspectives, however, unless gender training is explicitly included in the project's human resources development plan and specific gender criteria are used to nominate students for advanced study, in-service training, or short courses to upgrade skills.

A good example is the World Bank's Land Administration Project in the Lao People's Democratic Republic, which systematically monitored gender perspectives and analyzed best practices. The gender dimension of its training components has become visible and made a notable impact, because the development of educational and training programs included both men and women, which eventually led increasing numbers of women to become involved in implementing project activities. An institutional liaison with the Lao Women's Union strengthened the project's capacity to address gender issues at local levels (World Bank 2005).

FAO has developed and extensively disseminated an instructional tool for extension advisers working with rural women that contains various checklists and training tools designed for use at various levels in formal and less formal educational settings and in a range of cultural settings.[6] The six instructional units cover (1) the rationale for working with rural women; (2) information on rural women; (3) contacting rural women; (4) time and location of extension activities; (5) access to credit, inputs, and technology; and (6) communication methods and techniques. Another learning Module, produced by the World Bank, provides a checklist of strategies to consider when addressing gender issues in the education and training components of agricultural development projects (box 7.14).

GUIDELINES AND RECOMMENDATIONS FOR PRACTITIONERS

- *Admission and recruitment policies.* Revisit the admission policies in AET institutions. Advise and initiate negotiations with AET administrators and policy makers to introduce aggressive recruitment policies with affirmative action for women (for example, a minimum intake quota for women of 30 percent). Discuss the development and provision of supportive and preparatory training courses for men and women in science, mathematics, or related subject areas to facilitate admission to secondary and higher agricultural education.
- *Gender statistics.* Introduce gender statistics and gender-sensitive indicators to decision makers in line ministries and institutions to justify and facilitate the increase of women's opportunities to be trained in agriculture at all levels (vocational, technical, and tertiary). Carry out gender-disaggregated human power surveys in various sectors to obtain data to guide decisions, and if needed include an admission quota for women to narrow the gender gap.
- *Institutional partnerships.* Link with national institutions, professional associations, private sector allies, and women's political action networks to obtain support and infrastructure for women's advanced education, including dormitories, practical training laboratories, classrooms, and appropriate technology facilities. Such facilities will enhance the integration of household-focused practical training and entrepreneurial activities in the curriculum.
- *Incentives and retention.* Enhance women staff retention in training institutions and higher education establishments through job creation, recruitment policies, benefit sharing, and a working environment with defined sexual harassment policies. The alternative is the continuing loss of women to overseas employment.
- *Donor and lender dialogue.* Initiate dialogue with the donor community to enhance awareness and mobilize resources for reviewing, assessing, and strengthening the management of education for agriculture (including forestry, fisheries, livestock, and home economics) and rural development at postsecondary, tertiary, and postgraduate institutions. Establish liaisons with national policy makers to raise awareness and enhance their political will and interest in ensuring equal opportunities for women and men students and staff to advance and work for agricultural education and extension. Link financial support to AET institutions to increasing numbers of women trainees and women trainers and to successful integration into the labor market.
- *Partnership in implementation.* Seek partnerships with international agencies with mandates in food, agriculture, and natural resources and invite gender specialists to train a cadre of men and women trainers in agricultural colleges in basic socioeconomic and gender analysis skills. Introduce instructional approaches and build capacity to raise awareness of gender roles in family

Box 7.14 Strategies to Address Gender Issues in the Education and Training Components of Agricultural Development Projects

Increase women's enrollment in agricultural courses

- Conduct campaigns in secondary schools to promote agriculture as a career for women
- Increase girls' enrollment in secondary schools and particularly in science courses
- Provide scholarships for women to attend agricultural courses at colleges or universities
- Provide supplementary, precollege courses in science and other subjects as needed
- Provide separate boarding facilities for women or a completely separate college if necessary
- Encourage parents' visits to training colleges to help them ascertain that the facilities are suitable for their daughters

Increase training in gender issues for everyone

- Appoint a staff person with gender expertise as a teaching/training coordinator to review gender issues in all training modules
- Insert modules on gender issues in agricultural college and university courses
- Include gender issues in in-service training and use information from gender studies to prepare training sessions
- Send teachers on short-term training courses in gender issues
- Engage agricultural college staff and students in gathering project preparation data on gender issues

Increase training for women in projects

- Include minimum targets for training of women agricultural technicians
- Make study tours and training abroad accessible to women staff
- Set minimum targets for training of women farmers
- Consider conducting agricultural training with literacy activities
- Include a functional literacy component in agricultural training courses
- Include specific targets for women and men participants in agricultural training, depending on their literacy levels
- Collaborate with other ministries, agencies, or NGOs on functional literacy
- Include a grassroots management training component to train rural women farmers in business management techniques, financial management, human resource management, marketing, and running small businesses, for example, as in the World Bank's pilot projects in Burkina Faso, India, Malawi, Nigeria, and Senegal, developed by the Economic Development Institute (EDI) and in FAO's numeracy projects for women entrepreneurs in West African countries (Benin, Côte d'Ivoire, and Ghana).

Source: World Bank 2002.

relations, health management, and nutritional well-being in HIV and AIDS care, operating a farm enterprise, and fostering community participation. Use external expertise to develop training course content in organization, leadership, negotiation, and mitigation and to train staff to analyze such current issues as the impact of environmental degradation, rural-urban migration, resettlement, demographic trends, and conflict resolution.

THEMATIC NOTE 4

Labor-Saving Technologies and Practices

In most developing countries, rural women's triple responsibilities of farm work, household chores, and earning cash to supplement family incomes—tasks that often add up to a 16-hour day—are well documented. Although even men from poorer families now have access to improved technologies for use in farming and nonfarm enterprise activities, most women still struggle through their day using traditional technologies that are labor intensive and time and energy consuming.

Domestic chores such as collection of water and fuelwood divert women's use of time from farming tasks and nonfarm enterprise activities. This is a particular problem in areas of labor scarcity such as sub-Saharan Africa, where women's time-poverty and lack of access to improved technologies lead to low agricultural yields and low levels of food security.

A wide range of technologies could help address some of women's labor constraints. Over the last 30 years many development projects and programs have aimed at reducing women's time-poverty by increasing their access to these technologies. Many barriers remain to the adoption and sustained use of these technologies, however, and women are still overburdened. In fact, women's workload is increasing in some regions as a result of deforestation, droughts, rural-urban migration, and the spread of HIV and AIDS (Bishop-Sambrook 2003).

KEY GENDER ISSUES

Rural women in developing countries divide their time among farming, domestic, and nonfarm activities, with the focus varying among regions, type of household, and farming systems.

On-farm activities

The roles of men and women in farming are well defined, with men responsible for land clearing and preparation and women responsible for planting, weeding, harvesting, and postharvest activities such as threshing, winnowing, and grinding. All these tasks take up a great deal of time and energy, a burden that can be reduced in one of two ways:

- Making existing tasks easier and increasing productivity of existing labor and draft power
- Changing farming practices to methods that use less farm power.

Increasing farm power

Improved technologies can increase labor productivity in farming, but they have mostly been adopted in relation to men's tasks, often with negative consequences for women. For example, tractors and animal-drawn plows have been used by men to increase the acreage under cultivation, leaving women to struggle with an increase in weeding and harvesting using only handheld tools. This adds to women's workload but can also result in major crop losses if weeding is done late or with insufficient care. Although many women now undertake men's tasks because of migration by men or death from HIV and AIDS, manufacturers and suppliers of farming equipment seem to be unaware of this changing division of labor and continue to distribute ploughs that are too heavy for women or have handles they cannot reach (IFAD 1998).

Tools and equipment appropriate for women's tasks (for example, planting, weeding, and grinding) do exist, but many barriers block their adoption. Of all women's land-related tasks, weeding with handheld hoes is the most punishing and time consuming, causing fatigue and backache. Long-handled hoes are available that could reduce the strain of squatting using traditional short-handled hoes, but in many parts of Africa these are rejected for cultural reasons. Manufacturers of farm implements make different weights of hoes, including very light ones that are better suited to

women's needs, but most women continue to use heavier hoes because they are unaware of the full range of available tools. Lighter implements suitable for use with donkeys are available, and, unlike with oxen, no taboos exist for women working with donkeys. A donkey-drawn intercrop cultivator could reduce weeding time per acre from two to four weeks to two to four days, but women lack the cash to purchase such equipment, and men see no need to purchase donkeys and equipment for their wives when the work can be done manually at no cost. In addition, animal-draft technologies are seen as being men's domain, and animal traction training courses tend to be restricted to men (IFAD 1998). Even when donkeys and equipment are distributed to women through development projects, constraints on sustained use arise. For example, in one project in Uganda, women lost their donkeys through lack of cash to pay for drugs to keep their animals healthy (GRTI 2006).

Plastic drum seeders, which have been widely promoted through the International Rice Research Institute (IRRI) and other organizations in Southeast and South Asia, enable farmers to sow rice seeds directly instead of broadcasting or transplanting rice seedlings. These seeders have proved very popular with farmers because they lower production costs through reduced use of seeds and labor and because they give higher yields. Data from an IRRI-supported project in Vietnam show that the time spent by women on tasks such as gap filling and hand weeding is vastly reduced. This has proved popular with women from better-off households who now have more time to spend on child care, income-generating activities, and community activities, but it has resulted in the loss of livelihoods for the many women from poorer and landless households who used to be hired by farmers to undertake these tasks. In addition, extension agents interacted only with men. Because women had no knowledge of the drum seeders and were not involved in decisions to adopt them, they had no opportunities to acquire them on a cooperative basis as a way of earning income through providing hire services to farmers (Paris and Truong Thi Ngoc Chi 2005). The drum seeders are now being transferred through an IFAD/IRRI program to Bangladesh. Without any transfer of lessons on gender learned from the Vietnam experience, the same outcomes can be expected, with only men owning the seeders and the poorest rural women losing jobs and experiencing an increase in poverty (IFAD 2006).

Grinding mills, cassava graters, and oil expellers are now to be found in almost every village in the developing world. Some are owned by community organizations and women's groups, but most are owned by individual entrepreneurs, who are mainly men. The rapid spread of these processing technologies has been fueled by the increasing availability of energy supplies in rural areas and by the significant profits that can be made from operating rural processing enterprises. Rural mills cut the time involved in hand pounding or grating from several hours to only minutes and undoubtedly have improved the lives of millions of women (box 7.15).

Two problems exist, however. First, the mills have opened up investment opportunities for men rather than for women, who cannot afford to buy them. They also exclude women from the poorest farm households, who cannot afford to pay for milling services. Second, as with drum seeders, when large numbers of women have earned their

Box 7.15 Nepal and Botswana: Labor- and Time-Saving Crop-Processing Technologies

In Nepal mechanized mills were found to reduce the time needed to process one kilogram of rice from 19 minutes to 0.8 minute, but women were walking for 10 to 180 minutes to reach the mill and waiting an average of 30 minutes for their turn. Such behavior has been noted in many parts of Asia and Africa and suggests that women are more concerned with the energy savings than the time savings connected to mechanical crop processing.

In Botswana sorghum mills have reduced the time needed to process 20 kilograms of sorghum from two to four hours to two to four minutes. Pounding traditionally takes place in the evening, whereas the mills operate only in the mornings. Women have solved this problem by sending grain to the mill with their children on the way to and from school.

Sources: ITDG 1986; Spence 1986.

living by manually processing crops for local farmers, rural mills can result in the loss of a valuable source of income with dire consequences if no alternative remunerative work can be found. Such women can be assisted in various ways. In Bangladesh in the 1980s, mechanized rice mills were leading to the displacement of about 100,000 women per year. The Bangladesh Rural Advancement Committee (BRAC), a large NGO, introduced a program to organize these women into cooperative groups and provided them with loans so that they could purchase their own mills and share in the benefits of the new technology (Ahmad and Jenkins 1989).

Changing farming practices

Increasing access to farm power, including access to mechanized equipment, is one way of solving women's time and energy constraints related to on-farm activities, but it is also possible to reduce the demand for power by changing farming practices. A good example is the adoption of conservation agriculture or zero/minimum tillage agriculture, which overcomes the critical labor peaks of land preparation and weeding by planting directly into mulch or cover crops, with weed control being done through cover crops and mulch as well as by hand with the use of herbicides.

Although IFAD, FAO, and others have implemented projects to introduce such practices, results have been mixed. For example, in the FAO-supported Conservation Agriculture and Sustainable Agriculture Development Project in Kenya and Tanzania, yields increased and time spent on land preparation, planting, and weeding was much reduced. Women in poor farm households benefited from a decrease in labor pressure, but women in landless households received fewer opportunities to work in planting and seeding, although this effect could be cushioned by higher labor requirements in harvesting if yields were sufficiently increased (Maguzu and others 2007).

Increased yields are an incentive to the adoption of conservation agriculture, which still faces numerous challenges. One of these challenges is cultural resistance to a farming system that keeps crop residues as soil cover and involves no-till practices, both of which are considered signs of laziness because a plot that is not thoroughly prepared with a clean seedbed looks "dirty." However, it is the dirty soil cover and trash that prevent the weeds from growing. Conservation agriculture is no more expensive than conventional agriculture, but it can involve the need for cash to purchase inputs up front and to purchase tools suitable for direct planting. In addition, the use of herbicides in conservation agriculture can be a health hazard to the women who apply them if the wrong products or equipment is used and no training in application methods is provided (Bishop-Sambrook 2003).

Domestic chores

Tasks such as water and firewood collection, cooking, cleaning, child rearing, and health care take up inordinate amounts of women's time and divert their labor from farming and income-generating activities. Numerous programs and projects have been introduced with the aim of improving access of rural populations to water and energy supplies and providing infrastructure such as rural roads and rural health clinics aimed at increasing mobility and access.

Interventions to reduce time spent by women on domestic chores fall into two categories: (1) integration of women's needs in mainstream infrastructure projects and (2) projects aimed at delivering time- and energy-saving technologies directly to women. Infrastructure projects aimed at supplying piped water, electricity, and rural roads are dealt with in Module 9 and are potentially important ways of reducing the time women spend collecting water and firewood and transporting crops from fields and to markets. However, it will take decades for piped water and the grid to reach the majority of poor rural communities. In the meantime labor-saving technologies and practices such as rainwater harvesting projects, protected springs, and improved stoves have a significant role to play. In a similar fashion, even where rural roads have been built, women still need access to appropriate transport technologies such as wheelbarrows, bicycles, and donkey carts to assist with carrying loads along these roads.

LOW-COST WATER TECHNIQUES

Women's involvement in community-based water schemes has been significant, and women have benefited from them both practically, in terms of time savings and improved hygiene, and strategically in terms of increased voice and control (box 7.16).

Improved stoves

Fuelwood is collected free from surrounding forest or scrub areas and used by women in traditional open fires or in improved biomass stoves to cook meals and provide space heating. The collection of fuelwood is one of the most time-consuming tasks undertaken by rural women, with the

Box 7.16 Kenya: Women and Community-Based Water Programs

The nine-year IFAD-supported Central Dry Area Smallholder and Community Services Development Project started operation in Kenya in 2001 with the objective of reducing severe poverty. The water programs introduced through the project involve community-based action to ensure sustainability. Water user associations have been established that own, operate, and maintain the water supply facilities. Women represent only 29 percent of the members of the water user associations, mainly because membership is registered in the name of the man head of household who owns the land. However, the women who do participate have made their voices heard and gained respect in the community. The time spent by women in collecting water has been significantly reduced from half a day to only minutes through projects such as construction of protected access to springs close to the village. Water quality is also much improved. Time is spent instead on tending kitchen gardens and rearing cows and goats for milk to be sold for cash, and women no longer need to withdraw their daughters from school to help them fetch water.

Source: Matuschke 2007.

amount of time increasing as supplies become scarcer as a result of deforestation. The provision of fuel encompasses time spent not only in actual travel, cutting, and carrying but also in the preparation of fuel for burning and use, which can take more time than the actual collection itself. In addition, cooking on traditional stoves is time consuming and requires constant attention, so it prevents women from engaging more fully in other tasks.[1]

After three decades of projects aimed at introducing improved stoves, millions of women still prepare meals using traditional open fires, and continued attempts by development agencies to introduce improvements still face difficulties (Bishop-Sambrook 2003). Major obstacles include women's lack of access to cash and the unwillingness of their husbands to contribute when cooking can be undertaken free of charge on an open fire. Attempts by development projects to solve this problem by distributing stoves free of charge have rarely proved successful and often have been counterproductive (Ghertner 2006). Widespread uptake of improved stoves requires that women have control of their own source of income or that their husbands see sufficient economic benefits from the use of the stoves to warrant investing in them.

An increasing number of projects are introducing stoves that use alternative fuels such as biogas, ethanol, and liquid petroleum gas, which have many benefits in addition to saving time for women (box 7.17). A detailed review of the range of energy technology options that could assist women can be found in the recent FAO publication *Energy and Gender Issues in Rural Sustainable Development* (Lambrou and Piana 2006) and from ENERGIA, the International Network on Gender and Sustainable Development (www.energia.org).

Rural transport technologies

One way of easing the burden of women's work is to increase their access to carrying devices, such as donkeys, wheelbarrows, and carts. In addition to helping with the collection of water and fuelwood, such technologies can also help women with a range of other transport tasks related to carrying tools to and from the fields, carrying crops from fields to grinding mills and markets, and transporting children and the elderly to health clinics. Many studies undertaken over the years show that African women typically spend up to 2,000 hours each year on transportation tasks, which is three to four times greater than the time spent by men (Barwell and Calvo 1987; Blackden and Wodon 2006). Despite their heavier transport burden, women have fewer opportunities than men to use transport technologies to alleviate it (Fernando and Porter 2002).

Carrying heavy loads along a road may be better than struggling along a rough path, but only marginally so. Particularly in Africa, women have had very few alternatives between head-loading/walking and movement by conventional car, bus, or truck. Where public transport systems exist, they provide a reasonably cheap way for women to travel to market or to health clinics, but they are not without their difficulties. Women often are left behind or stranded along the route when preference is given to men customers or to those traveling a longer distance. Harassment and safety are major concerns for women traveling long distances alone. One group of women in Kenya solved this problem by registering as a cooperative to obtain a loan and then buying their own bus, which operates successfully as a profit-making enterprise and gives preference to women cooperative members (Kneerim 1980).

Box 7.17 China and Sudan: Alternative Fuels for Domestic Cooking

The IFAD-supported West Guangxi Poverty Alleviation Project in China has involved the introduction of 2.73 million biogas tanks that have been built by villagers. An estimated 7.65 million tons of standard coal and 13.40 million tons of firewood are saved annually. Similar IFAD-supported projects implemented elsewhere in China save women time for more agricultural production as well as improving the living environment and producing high-quality organic fertilizer. The Wulin Mountains Minority Areas Development Project includes a credit component aimed directly at women's income-generating activities so that they can use released time to earn extra cash.

In Sudan, after initial fears about the safety of liquid propane gas (LPG), women now like the new LPG stoves because they are cleaner and quicker than fuelwood stoves and easier to tend. However, many women stop using their LPG stoves after a while and revert to charcoal stoves, even though the cost of fuel per month is more expensive. One explanation is that currently LPG is available only in large containers that last for a full month. With no tradition of saving money, women have a cash flow problem when their containers are empty and revert to buying small amounts of charcoal on a daily basis. Efforts are now being made to promote a savings culture to overcome this problem. In addition, the private company that supplies LPG in Sudan has realized there is a potentially large market for its product in rural areas and is planning many innovations, including better distribution systems, smaller containers, and provision of credit to assist with stove purchase.

Sources: Bates 2007; Dianzheng 2007; IFAD 2007.

Improved roads make it possible to use a range of intermediate means of transport that would not be appropriate for use on rough rural paths and that, in theory, can result in a significant reduction in the time and effort spent by women on transportation tasks. For instance, the use of a wheelbarrow with a payload of 50 kilograms compared with head loading (20-kilogram capacity) can reduce the time spent on water transport by 60 percent (Mwankusye 2002). However, there is a range of sociocultural and economic barriers to women's access to such intermediate means of transport. Wheelbarrows often are rejected by women who are used to standing straight while head loading and find it physically discomforting to bend and push these devices. Carts are expensive and often owned by men who use them for their own purposes and do not provide their wives with access, even when they have been distributed through development projects aimed at assisting entire rural households. As seen earlier, using draft animals for farm activities and transport is often seen as a men's activity, and training is given only to men.

An interesting aspect of intermediate means of transport is that they often result in a changing division of labor within the household. Sometimes this is to women's advantage, but it can also add to their workload or deprive them of new economic opportunities. In one project in South Africa, in which donkey carts were distributed to help with fuelwood collection, the carts were monopolized by men who used them to collect and sell wood from resources closest to the homestead, leaving women to travel even farther to get fuelwood for domestic use (Venter and Mashiri 2007). In India, when bicycles were introduced through a literacy program, women learned to ride and had limited access to their husband's bicycle. This increased women's self-confidence and increased their involvement in community activities, but it also meant that they had to undertake work such as marketing that was not expected of them when they were less mobile (Rao 2002).

Off-farm activities

A major objective of projects that introduce labor-saving technologies and practices is to help women divert time from subsistence farming activities and domestic chores into more productive, income-generating enterprises. Often the most remunerative of these enterprises are intensive in their use of water, fuelwood, or both, and involve laborious production and processing methods using traditional techniques and technologies. This can require quantities of women's time that simply may not be available to them. In some circumstances increasingly scarce water supplies and rising costs of fuel can threaten the existence of women's traditional food-processing industries unless they can gain access to improved technologies and practices.

Brewing is a major source of income for most women in sub-Saharan Africa but accounts for up to 25 percent of total wood fuel consumed by the average household and requires time-consuming energy management. Interventions include design and dissemination of improved stoves for home brewing in the expectation that women will invest in the stoves if they lower costs of production. but continuous fire management affects fuel efficiency more than technology design, a fact often missed in development projects that have failed to consult with women entrepreneurs.[2] Innovative practices that break with tradition and establish cooperative brewing enterprises using larger-scale technologies could provide a more satisfactory solution.

The examples in box 7.18 show that when women are properly consulted and involved in the design and adaptation process, there can be significant benefits for rural women involved in food-processing enterprises and for rural artisans involved in the production and sale of the improved technologies on which they are based.

Finally, the increasing demand for time- and energy-saving technologies can in itself form the basis for income-generating activities for women. In India illiterate women from eight states have been trained as "barefoot solar engineers" to establish solar energy systems in areas where the electricity supply is either nonexistent or highly erratic.[3] Other examples of women's involvement in energy production include earning money through manufacturing lamps in Bangladesh, manufacturing and marketing clay liners for improved stoves in Kenya, making biomass briquettes for sale in Malawi, and operating diesel generators as businesses and selling energy services in Mali (UNDP 2001). One benefit from the provision of rural electricity is the ability to work on income-generating activities, such as crafts in the evenings, which effectively "extends" as opposed to saves time. While this increases earning opportunities, it also increases women's workload (Clancy and Kooijman 2006).

GOOD PRACTICES AND LESSONS LEARNED

Findings are divided into two major groups:

- Those that relate to the *dissemination* of labor-saving technologies and practices in terms of appropriateness, acceptability, and fit with priority needs
- Those that relate to the *impact* of these technologies on different types of women in terms of meeting practical and strategic needs and sustainability.

Dissemination

Many of the labor-saving technologies introduced through development projects or available through commercial

Box 7.18 West Africa: Women's Role in Innovation

Most women in the coastal areas of West Africa make a living through smoking and selling fish. In collaboration with women users, a local technology institute developed an improved oven that is now widely used throughout the region. The new oven enables women to undertake three smoking cycles a day, whereas only one cycle was possible with the traditional technology. Most women spend the same time processing more fish, but some time savings still exist because the new technology is easier to operate and allows women to tend to other household tasks while the fish is being smoked. One unexpected consequence of this profitable technology is that men are beginning to take over what has traditionally been a women's industry and compete with them.

In Nigeria, the most time-consuming aspect of preparing *gari,* a convenience food made from cassava, is grating the tubers, which can take a whole day using traditional manual technologies. A mechanized grater was developed by an artisan carpenter in Benin State at the behest of his three wives, and the original prototype has been adapted by local artisans over time in response to the suggestions of women users of the graters. Time spent on grating is reduced from one day to around 15 minutes, but women cannot afford to own the graters they have helped to design. Most are owned by men who hire women operators. Thus, although the graters lead to a reduction in the time women spend on grating cassava (time that they divert mainly to other economic activities such as making more *gari* and engaging in retail trade), they do not benefit from profits on the grating process, and the profit made from *gari* processing (as opposed to grating) is very small.

Sources: Adjebeng-Asem 1990; ILO/Netherlands government 1985; Sandhu 1989.

channels have not found widespread acceptance among rural women. Several reasons account for this. Sometimes, as is the case with many semimechanized crop-processing technologies, they are not much more efficient than traditional technologies and so do not merit the extra investment involved. In other cases the technologies have been imported from other countries and introduced without adaptation or have been adapted by local manufacturers and artisans without proper consultation with proposed users. When, as a result, these do not meet the specific needs of the users, they tend to be rejected. When research and development institutions, local manufacturers, and artisans have been able to find a way to relate to women users and to incorporate their ideas into the design and adaptation process, as was the case with smoking ovens and cassava graters in West Africa, then improved technologies have been successfully disseminated. Ways need to be found to replicate such experiences in other developing countries such as those in East and Southern Africa, where there is very little interaction between blacksmiths who produce farm equipment and rural women who are their potential clients.

In some cases, women reject labor-saving technologies for sociocultural reasons, such as taboos on working with oxen or using long-handled hoes. Although it is important to be sensitive to cultural issues, they can represent a major constraint on economic development. Sometimes taboos have been overcome as a matter of necessity as with African women using oxen when they are forced to take over men's farming tasks as a result of increased migration and the spread of HIV and AIDS. In other cases, such as Senegalese women using long-handled hoes and Indian women riding bicycles, communities have simply accepted change in response to external stimuli. Examples such as these can be used as role models for women and men in other parts of the world.

Even when labor-saving technologies are appropriate, culturally acceptable, and meet a priority need, many factors limit women's access to these. As seen with farm implements in East Africa, women often do not know the range of technologies that are available. Traditional government extension services provide a narrow range of information that, in the case of agriculture, is normally restricted to seeds and fertilizers rather than tools (IFAD 1998), and extension workers tend to relate to men rather than women. Commercial companies rarely do market research or supply information to potential clients, and local blacksmiths are rarely linked to outside sources of information. Box 7.19 lists some good practices for dissemination.

Although many programs such as IFAD's First Mile Project promote the use of new information and communications technologies to get information to women and men farmers about market prices, they have not gone far enough in using these as a way of supplying information about the range of available labor-saving technologies.[4] Some NGO initiatives are moving ahead on this front. One such initiative is the network of village kiosks and coordinating hubs that has been set up by the M. S. Swaminathan Research Foundation in India to link rural women virtually with scientists and technologists, who can respond to their problems and requests for information (Fairless 2007). Other examples include the various initiatives of Women of Uganda Network (WOUGNET) in Uganda that seek (in collaboration with government programs) to use the Internet to bridge the gap between researchers, extension workers, and women farmers (various WOUGNET newsletters at www.wougnet.org).

Another major barrier to women's access to labor-saving technologies is their lack of access to cash and reluctance on the part of their husbands to contribute toward such technologies when they feel that the work can be done (as it

Box 7.19 Good Practices for Dissemination

- Involve women users in the development and adaptation of labor-saving technologies and practices
- Disseminate examples of women overcoming cultural barriers to use of labor-saving technologies and practices and encourage exchange visits
- Strengthen and develop programs to spread information on labor-saving technologies and practices through information and communication technologies
- Disseminate information on the value of women's time in subsistence activities
- Enable women to use time saved by labor-saving technologies and practices in income-generating activities through credit, training, and access to markets

Source: Authors.

always has) free of expense by women. As long as women's labor is perceived as having little or no value, then little progress can be expected. However, experience shows that two strategies can be effective. First, research findings that put an economic value on women's time spent on survival tasks can be more widely disseminated to decision makers and rural communities as a tool for advocating for the introduction of labor-saving technologies on economic grounds. Second, strategies can be introduced that increase the chances of the time saved by women being redeployed in economically productive ways so that they are better able to cover the costs of labor-saving devices. This was the case with the IFAD biogas project in China that provided loans for women's income-generating activities as an integral part of the project (box 7.17).

Access to training and technical skills has also proved to be a barrier to women's use of technologies because it is often men rather than women who are targeted for training opportunities. When women are given the chance to learn new skills, as with the women barefoot solar engineers in India (see above), they show that they are well able to put this to good use. Experience also shows that women are extremely good at sharing new knowledge with each other and that peer training and exchange are often more effective tools in spreading improved technologies than formal training courses.

Impact

Reaching women with labor-saving technologies is only half of the battle. Experience shows that outcomes are not always as expected and that any short-term practical benefits can sometimes be lost if the use of the technologies does not lead to longer-term strategic changes. Measuring impact is a difficult task. Although it is easy to put a figure on the amount of time that women can save through using a particular technology, it is much more difficult to trace how women make use of this time. Sometimes the time is simply used to collect more water or fuelwood, farm more land than was possible before, or reduce the amount of time that children must spend on such activities. Sometimes it is used to earn more income. And sometimes it is put into social and community activities such as visiting friends and family or attending literacy classes and committee meetings. Often it is split among all such uses. All are important, but policy makers and development planners can and do influence choices through changing taxes on imported tools and equipment, subsidizing water or electricity provision, and providing credit and training related to income-generating activities. Ministries of agriculture, industry, and rural development can also assist through support to rural blacksmiths and artisans who produce appropriate tools and equipment for agricultural production and processing and through ensuring that commercial distributors are better informed about the needs of rural producers.

Any one technology can have a differential impact on women in different regions and levels of household status. Generally women in poor and landless households living in areas of labor surplus such as Asia are more likely to be displaced by labor-saving on-farm technologies than helped by them. In these circumstances, more programs such as those introduced by BRAC in Bangladesh are needed if the poorest women are to share more equally in the benefits associated with modern farm machinery. Even in conditions of labor scarcity, rural women are not always able to benefit fully from the mechanization of their more arduous tasks. In most of Africa the majority of rural mills and oil presses are owned by men entrepreneurs. Thus, although most women have access to these technologies, they do not own them or control the significant profits to be made from their operation. Attempts have been made to promote cooperative ownership with mixed results. However, experience shows that when the need and the benefits are great enough, as with the case of the women's bus cooperative in Kenya, women can take control of their lives through ownership of a modern technology.

This issue of access versus ownership and control relates directly to the distinction between meeting practical and strategic needs. Many projects result in practical benefits, such as reduced time spent in collecting water or fuelwood, but fewer of them meet strategic needs in terms of changing the balance of power within the household or increasing women's ability to negotiate effectively with local decision makers. An effective way of increasing women's status within the household and community is to increase their earning capacity, thus strengthening the argument for labor-saving technologies that provide women time to engage in income-generating activities.

Finally, labor-saving technologies can have some unexpected results. For example, they can lead to changes in the division of labor within the household or to men taking over women's traditional industries when they become more profitable. To the extent these changes deprive women of income-earning opportunities, they need to be addressed through measures that support women's ownership and control of the technologies involved. In addition, short-term gains that women derive from some labor-saving technologies can be lost if there is no system in place to maintain and

repair them. Training women to undertake such tasks can serve the double purpose of keeping systems in operation and providing a useful source of income.

GUIDELINES AND RECOMMENDATIONS FOR PRACTITIONERS

Different aspects of women's work and lives are so intertwined that it makes little sense to try to deal with one aspect in isolation. Thus, rural transport projects should not be dealt with separately from water supply, rural energy supply, and health provision projects. Furthermore, programs that incorporate measures to reduce the time women spend in subsistence activities should have components that facilitate women's increased involvement in income-generating activities. Integrated approaches are needed if women's strategic and practical needs are to be met effectively.

Programs and projects should reduce emphasis on imported technologies and support local blacksmiths and artisans instead. This will increase women's voices in the design and adaptation process and better ensure that tools and equipment can be maintained and repaired in a timely and cost-effective manner. Support measures include training, assistance with commercialization of technologies, and fostering linkages with women clients and outside sources of information. The use of information and communication technologies can play an important role in building linkages between women clients, artisans, research and development institutions, and the private commercial sector, both locally and globally.

When one group of women benefits from labor-saving technologies and practices at the expense of another, measures are needed to assist the losers in diversifying into alternative ways of earning an income. This can involve various organizing strategies and provision of credit, skills training, and information on new economic opportunities. In general, women's access to credit and rural finance facilities is essential in situations in which women have little or no cash or assets and their subsistence activities are given no value. More attention also needs to be given to ensuring women's equal access to training and extension services and to linking women with local artisans, technologists, and commercial distributors through information and communication technologies and other channels.

INNOVATIVE ACTIVITY PROFILE 1

Peru: Natural Resource Management in the Southern Highlands

The Management of Natural Resources project in the southern highlands of Peru—known by its acronym, MARENASS—uses a highly innovative methodology developed with 13 rural communities in Chumbivilcas, Cusco, during the 1980s.[1] The methodology, called Pachamama Raymi, assists rural communities to mobilize funds and knowledge to manage locally developed natural resources in ways that suit the organizational and cultural strengths of rural communities in the Andes. The MARENASS project, funded by a loan from IFAD to the government of Peru, began operations in 1997 (table 7.4). It scaled up the work initiated with the original 13 communities to reach 360 communities, with the assistance of a small technical support unit and farmer specialists/knowledge sharers. The project involved entire communities—men, women, children, and elders—in a series of contests to recover, adapt, and innovate technologies for sustainable natural resource management.

Although the project ended in 2005, the government of Peru continues to monitor the impact of the methodology and has found that many communities continue to use it on their own. In 2002 the World Bank's Agriculture and Rural Development (ARD) Division supported the use of the methodology for the Rural Resource Management Project executed by the Mukono Agricultural Development Centre of Uganda's National Agriculture Research Organisation (NARO). During the four years of the project, rural communities in a number of districts enthusiastically received and adapted the Pachamama Raymi methodology (Fernandez and Lusembo 2002).

What's innovative? Natural resources are locally developed and managed in ways that mesh with and support the organizational and cultural strengths of Andean communities. Women are the major actors in the management of these resources.

The following sections of this Innovative Activity Profile on the MARENASS project are excerpted from the IFAD Web site (www.ifad.org).

PACHA MAMA RAYMI AND THE MARENASS PROJECT

The literal meaning of "Pacha Mama Raymi" is Festival of Mother Earth. The methodology draws upon the cultural, mythological, and religious traditions of Andean communities in relation to the cultivation of "Mother Earth." These

Table 7.4 Marenass Project Data

Project cost	$15.2 million
IFAD loan	$12.3 million
Borrower's contribution	$2.9 million
Percentage transferred to communities	80% of total project cost
Project cost per community	$40,000 per community; average of $350 per family. Capital formation in the communities very quickly surpassed that amount.
Number of participants	20,015 families in 360 communities (average 55 families/community)

Source: Compiled from "Plan de Trabajo Institucional Proyecto de Recursos Naturales en la Sierra Sur del Peru 'Pacha Mama Raymi,'" Abancay, Peru, 2003.

traditions allow productive natural resources to be managed while still respecting the vision and needs of local farmers. Pacha Mama Raymi uses competitions to promote new technological practices among villagers to improve natural resource management, agricultural production, and living conditions. The families or communities that best apply the advice provided by technical staff and that achieve the top results earn a cash prize presented at a Mother Earth festival. The competitions are a catalyst—an efficient and effective means of sharing, disseminating, and replicating local technological innovation throughout the entire project area.

Farmer-to-farmer training

MARENASS provides technical services based on the transfer of resources to communities. The funds enable communities to hire, supervise, and evaluate technical staff directly. The communities themselves select people who are to participate in farmer-to-farmer training. This approach has kept service costs low and encouraged the broad-based acceptance and adoption of new technologies by the communities. Continued support (in the form of stronger training programs and adequate funding) will be important to develop local service markets and ensure that supply meets farmers' demands.

Economic outlook

MARENASS has shown that the key to overcoming poverty in the harsh conditions of the southern highlands of Peru is to rehabilitate and conserve productive natural resources. The surplus generated by agricultural production and small businesses, as well as the prizes won by villagers in the competitions, have increased beneficiaries' financial and fixed assets, such as housing, corrals, terraces, irrigation infrastructure, and pastureland. Further substantial increases in production are expected, and farmers will need to enhance their links to markets and diversify production to ensure that they can sell surplus produce.

Women as key decision makers

Women's groups were entrusted with the administration of small funds providing small amounts of credit for the development of microbusinesses such as agricultural production and livestock breeding and fattening. Some groups are also working to preserve biodiversity through the recovery of seeds of native species and the development of small nurseries. The fund has been successful: average capitalization is around 50 percent. The women's groups have invested in activities that showed large enough returns for the enterprises to grow after paying back the credit. Ideas about social and family equity disseminated through gender and other types of training, combined with the increased empowerment of villagers, have led to a more equitable distribution of benefits among the poorest. Women in particular enjoy improved status because of the training and their increased ability to manage funds. The greater visibility and prestige of women with respect to their productive and reproductive roles and contribution to the family have also led to a more equitable sharing of responsibility within families, further enhancing women's status and position. Women and children have more time to improve their living conditions and concentrate on education. To continue supporting women's roles as key decision makers, women will need access to further training in managing microcredit and microbusinesses.

BENEFITS AND IMPACTS

The project and the community use "talking maps" to establish goals and a plan of action that begins with training and dissemination activities within the community. Talking maps portray the community graphically at three levels: the past (30 years before the project), the current situation (as of the project start-up date), and the future (in 20 or 30 years). Based on these maps, each year communities develop a community plan of action. This instrument enjoys wide social acceptance (bolstered by the competitions between communities) and is the true basis for "real and participatory" planning in the community.

Activities in resource management and conservation are organized and executed by the communities themselves, using their own means: families or communities make investments beforehand (mainly in labor but also materials), and although they may later win an award, it will never equal the value of the investment.

The competitions between communities are the instrument that has made it possible to achieve two objectives: first, community cohesion, and second, mass dissemination of resource management techniques and their subsequent application. Although the level of participation in the competitions between families is quite variable (averaging 40 percent of families in each community), by decision of the assembly, the competitions between communities necessarily involve all families in each community. The competition and the award provide the strong initial impetus. Later, concrete results become the incentive to continue with the

practices introduced: production improvements that translate into higher earnings for the farmers, thanks to more effective use of their productive natural resources and the consequent appreciation in the value of those resources, which constitute their main asset.

The funds for organized groups of women have helped to finance the microbusinesses they manage. In several communities mixed groups of men, women, and young people have formed. Most groups have their own bank accounts; the others use the community account. The MARENASS funds are transferred into these accounts, as are the revenues of the microbusinesses. The businesses managed by the women run the gamut from agricultural production and livestock breeding and fattening to micromarketing and microcredit operations, which extend loans directly to users under agreements established by the group itself, stipulating the form of repayment. As mentioned, some groups also recover seeds of native species and develop small nurseries. This fund has achieved remarkable success. About 50 percent of the women's groups have been able to begin a process of capitalization. The project has been remarkably successful in fostering widespread use of technologies for land management such as terracing and crop rotation that are part of farmers' shared cultural heritage but had been abandoned (farmers say they were "forgotten," although it is likely that they were supplanted by technologies such as external input use that were suitable only for capital-intensive farming on high-potential land). The most positive results are seen in the practices employed in the environment nearest to and worked most intensively by families, where the quantity and quality of produce for home consumption have improved.

The impact of MARENASS on human capital is directly related to the improvement in living conditions as a result of (1) lightening the burden of everyday tasks for the family, especially women; (2) greater, more varied, and more stable production throughout the year (with a consequent reduction in vulnerability); (3) refurbishment of physical assets and improvement of homes; and (4) acquisition of new goods (increased family economic activity). These improvements are behind the optimism expressed by all those interviewed. Security about their potential for growth utilizing the resources at their disposal forms the basis for their claims.

The ideas about social and family equity disseminated through the gender and citizenship training for both women and men, combined with the empowerment of participants and groups under MARENASS, have fostered increased attention to and better—that is, more equitable, effective, and representative—distribution of benefits among the poorest sectors of the community. As noted, the improvement in women's status within the family and community has been due to better training for women, their capacity to manage funds, and firm encouragement of their participation.

The most immediate impact of the improved practices has been to reduce women's workload, because women have traditionally been responsible for feeding and herding animals and for small-scale sales of small livestock and agricultural products. Improvements in the quantity, quality, and diversity of family production are making it possible for women not only to cover the basic needs of their families but also to contribute financially (sometimes for the first time) to family income through retail sales of small surpluses. Feeling more secure about their families' well-being has given the women a new sense of self-assuredness.

MARENASS project activities have emphasized "capacity-building," recognizing that local stakeholders are pivotal to facilitating its interventions. The project thus has had a very great impact on stakeholders' proficiency in all three dimensions of "capacity": knowledge, know-how, and the ability to take action.

The management of funds has enhanced the capacity of women's group members to engage in commerce in addition to enhancing their prestige. In most cases women's groups have mastered the theory and practice of teamwork (pooling and joint marketing of goods; mutual support among participating families) and avoided the individualistic attitudes that result from the break-up of communities.

The families and communities participating in MARENASS have taken ownership of the project and, with it, of something that they felt was already theirs: the terraces, the houses, the water, the pastures, a technology with a high labor content that produces high returns with little or no external input. But, above all, they have taken ownership of a "friendly" project that has offered technologies within their reach and rooted in their culture and ancestral practices. The project's sustainability depends largely on this concept of "regaining ownership" and on acceptance of the idea, often repeated by community members: "We are MARENASS."

LESSONS LEARNED AND ISSUES FOR WIDER APPLICABILITY

- The successful methodology used by MARENASS was based on the transfer of decision making and responsibility for planning and financial resources to the

communities, privatized services of technical assistance and farmer-to-farmer training, and the supply of low-external-input technology to farmers.

- In strengthening the social fabric of the communities, the project has succeeded in respecting and maintaining local values and culture.
- Providing training in management of funds has been key to women's engagement in business ventures and, in turn, in providing them with economic empowerment.
- An innovative aspect of the project is the use of competitions to evaluate and reward the best approaches devised by communities to manage natural resources.
- Twenty-five thousand families have moved from a subsistence existence and are now producing a surplus and enjoying greater physical and financial assets and food security.
- It is estimated that the return on project investments in terms of increased value of beneficiaries' assets ranges between $3 and $5 for every dollar spent by the project on the communities.
- A high level of participation exists in community activities. People identify closely with MARENASS and have endorsed the methodologies that seek the best alternatives and adopt the most relevant technologies.
- The communities say: "We are MARENASS. We do the work, we make the decisions, we irrigate and we improve our homes, our farms, our pastures. . . . What we do, we do for ourselves and it remains here for us."

INNOVATIVE ACTIVITY PROFILE 2

Tanzania: Conservation Agriculture for Sustainable Development

PROJECT OBJECTIVES AND DESCRIPTION

The Sustainable Agriculture and Rural Development (SARD) initiative was launched at the World Summit on Sustainable Development as a multistakeholder umbrella framework designed to support the transition to people-centered sustainable agriculture and rural development and to strengthen participation in program and policy development. A major objective of the project on Conservation Agriculture for Sustainable Agriculture and Rural Development is to derive lessons about the feasibility of conservation agriculture (CA) for small-scale and resource-poor farmers.[1]

The project, which started in 2004, aims to facilitate and accelerate the adoption of profitable CA practices by small-scale farmers in five districts in Tanzania and five districts in Kenya. The project builds on CA pilot activities in both countries. Over the long term the project will contribute to improved food security and rural livelihoods and lay the foundation for CA to expand and support sustainable agriculture and rural development.

What's innovative? Energy-efficient agricultural production technologies, combined with participatory methodologies, enable farmers to adopt farming practices that reduce labor and raise yields and incomes. Women, the main providers of agricultural labor, benefit most from the reduced labor needed for conservation agriculture. Equal training and extension opportunities are offered to women and men.

Aside from fostering environmental sustainability through soil and water conservation, the CA project aims to contribute to the social and economic pillars of sustainable agriculture and rural development through the following:

- Reducing the workload and time spent for agricultural production, therefore enabling people to diversify their livelihoods, develop businesses, and gain time for education, family care, community development, and political empowerment
- Increasing crop yields, especially by reducing drought sensitivity and dependence upon purchased fertilizers (with their widely fluctuating prices)
- Increasing production and agricultural earnings
- Enhancing crop biodiversity and diversifying food intake
- Fostering the development of secure livelihoods for other rural actors such as rural artisans and small-scale entrepreneurs.

Two main concepts inform the project and its intended approach:

- The *technical concept of conservation agriculture (CA)*, which combines minimal soil disturbance (reduced tillage, minimum tillage, direct planting); permanent soil cover with the crop itself or with the utilization of cover crops, residues, or mulch; and crop rotations/associations, through crop sequences, intercropping, relay cropping, and/or mixed crops.
- *The methodological concept of using participatory extension approaches to introduce the CA concept*. Both FAO and IFAD have good experience with FFSs, which emphasize farmer-driven and farmer-first methodologies. A major challenge of the project was to combine this participatory methodology with a clear technical farming concept. The project, now in its second phase, has more than 120 FFSs operating in 10 districts and directly involving 3,000 farmers. In addition to farmers, the project also aimed to involve extension workers, researchers, and, most important, the

private sector. The private sector was emphasized as a way of ensuring that farmers would have agricultural inputs and services, specialized CA tools and equipment, and farm power by the end of the project.

The project is funded by the German Ministry of Agriculture and Consumer Protection. The main implementing agencies include FAO, the African Conservation Tillage Network (ACT), the Ministry of Agriculture (Kenya), the Kenya Agricultural Research Institute (KARI), the Ministry of Agriculture and Food Security (Tanzania), and the Selian Agricultural Research Institute (SARI) (Tanzania).

BENEFITS AND IMPACTS

The following summary of benefits and impacts is drawn from a study undertaken in Arumeru District of Tanzania by ACT (Maguzu and others 2007) and from an IFAD/FAO study in Tanzania in 2002 (Bishop-Sambrook and others 2004). Particular emphasis is given to the role of women and the reduction in their workloads as a result of adopting CA practices.

Arumeru District is located in the Arusha region of Tanzania. Farming is rain fed, and 90 percent of the population relies on agricultural activities for a living. Sixty to seventy percent of arable land is cultivated using tractor-drawn discs and draft animals. The remaining 30–40 percent of land is cultivated by hand hoes. The quality and effectiveness of these methods, as well as their suitability for women, vary widely. The main staple food crop is maize, which is intercropped with beans or pigeon peas.

Traditionally rural women in Tanzania are marginalized. The man household head makes all decisions concerning agricultural production. In addition, agricultural equipment is owned by men, even though women are responsible for most agricultural work. The prevalence of HIV and AIDS in the district is high. As a result, families have had to sell their assets, the availability of family farm labor has decreased, and children have left school to help their families' farm. The labor shortages have reduced agricultural production and food security. Women have been especially affected by these developments, because their workloads have increased considerably as they care for HIV sufferers, attend to household chores, and manage farm operations simultaneously. The adoption of CA practices that reduce labor requirements was therefore expected to benefit women significantly.

By 2006 the project had established 11 FFSs involving 325 farmers (148 men and 177 women). Gender was considered when forming all FFSs to ensure that women could learn about CA and extension services to the same extent as men. Each FFS runs experiments on a test plot, and each farmer is obliged to dedicate part of his or her own land to one or more CA techniques.

Animal-drawn instruments such as rippers and manually operated instruments such as the jab planter, as well as seed for staple and cover crops, are supplied by the project. The animal-drawn ripper allows for reduced tillage because it cuts furrows into the soil rather than inverting it completely.

The manually operated jab planter allows for planting operations to be done through the soil cover with no tillage. By using the jab planter, the farmer does not have to prepare the field before planting, thereby saving time. Farmers have to share these instruments because they are expensive. If the equipment is unavailable, farmers must revert to conventional farming or adapt practices using traditional tools, such as the planting stick or the hands. Table 7.5 shows that jab planters are, on average, five times less costly than a no-till ripper and four times less costly than the conventional ripper. This price differential, in addition to the fact that they are easier to use, makes the jab planter popular with smallholders.

The adoption of CA has had three main impacts, discussed in the sections that follow: it has reduced the demand for household labor, increased food security by achieving higher yields, and increased household income.

Reduced labor requirements

Farmers in the district depend mainly on family labor but may also hire labor for certain tasks such as weeding. Women and children are traditionally responsible for planting and weeding, while men are responsible for preparing the land. With conventional agriculture, men guide the animals and the plow as women walk behind to place seeds in the ridge and cover them with their feet. Weeding is particularly tedious and may take up to 28 days per hectare. In addition, hoes often tend to be obsolete or not adapted to women's use. With the adoption of CA practices, labor requirements are not only greatly reduced (table 7.6), but the workload

Table 7.5 Cost of Conservation Agriculture Implements

Implement	Price ($)
No-till ripper	195.00
Conventional ripper	136.50
Jab planter	35.10

Source: Adapted from Maguzu and others 2007.

Table 7.6 Labor Requirements with Conservation and Conventional Agricultural Practices

Farming activity	Conservation agriculture			Conventional agriculture		
	Labor/acre (no. people)	Implement	Time/acre (days)	Labor/acre (no. people)	Implement	Time/acre (days)
Land preparation	2–3	Ripper and slashers	3	2–4	Plow	3–4
Planting	2	Jab planter	2	3	Draft animals	3–4
Weeding	8–10 performed *once*	Hand hoe	1	8–10 performed *twice*	Hand hoe	1

Source: Adapted from Maguzu and others 2007.

shifts to some extent, because men work alongside women in planting operations once a jab planter is available.

Lower labor requirements associated with CA practices affect women and other family members differently. Poor women-headed households benefit from lower labor demands, because a decrease in labor pressures frees family members from the requirement of working in the field. Children can pursue their education uninterrupted by sudden labor shortages. Women in landless households have fewer opportunities to sell their labor, but higher crop yields—and thus higher labor requirements for harvesting—could cushion the reduction in hired labor opportunities. Additional employment opportunities for rural women laborers as a result of higher yields would have an immediate effect on household livelihoods, as additional income is used for schooling and medical care.

Women in farm households spend time released by CA on household chores and income-generating activities, such as raising chickens, tending vegetable plots, or selling crops at local markets. More time is also spent participating in communal activities or simply taking more rest.

Increased yields and incomes

Farmers who adopted CA practices reported higher yields. Yields of maize rose by 40 to 70 percent, and increased yields were also reported for the cover crops, some of which bring higher returns than maize in the market. Yield increases lead directly to greater household food security and, if surpluses are sold, to higher incomes.

LESSONS LEARNED AND ISSUES FOR WIDER APPLICABILITY

Although CA obviously has yielded some benefits, barriers to adoption remain. Another concern is that not everyone has benefited equally from CA. A number of issues must be considered in developing plans to encourage wider dissemination of CA techniques.

Attitudes toward CA can present strong, deep-rooted challenges. Farmers are considered good and hard-working by their peers if they keep their fields clean and plow them. Farmers who keep crop residues as soil cover on their fields and use no-till practices are considered lazy. Grazing rights are another concern. The practice of allowing community livestock (particularly cattle) to graze on harvested fields endangers the soil cover used in CA. Grazing rights should be addressed through community laws or codes of practice.

As mentioned, women in poor households are likely to benefit from the reduced labor requirement of CA, but women from landless households may simply lose their source of income unless alternative jobs are created in harvesting increased yields of maize and cover crops. Careful attention should be given to analyzing the potential impact of CA on all categories of women, and plans must be made to provide income-generating alternatives for those who may lose their source of livelihood.

A major consideration in the adoption, sustainability, and diffusion of these practices is the cost of inputs and specific tools. At the moment, these are available through the project at a subsidized rate, but their cost and limited availability may represent major constraints if farmers have to rely on commercial distributors, because commercial supply channels have yet to be built up. Commercial channels are expected to open when demand rises. Demand is created through farmers' success stories, demonstrations, and promotional activities. Women (who have less access to cash and credit than men) will be most affected by the cost of inputs and tools. Special rural finance mechanisms to deal with this problem will need to be built into dissemination strategies.

INNOVATIVE ACTIVITY PROFILE 3

Junior Farmer Field and Life Schools: Empowering Orphans and Vulnerable Youth Living in a World with HIV and AIDS

What's innovative? The Junior Farmer Field and Life Schools (JFFLSs) have a unique learning methodology and curriculum, which combine both agricultural and life skills. The JFFLSs' dual focus on life and agricultural skills creates a double impact, strengthening life skills and protecting rural young people from shocks such as HIV and other diseases in the immediate term, while creating long-term food security and livelihood opportunities that empower rural young people over the long term, thus minimizing their vulnerability to destitution and coping strategies.

An innovative aspect of the JFFLSs is the way children are encouraged to develop as people; a school timetable includes cultural activities such as singing, dancing, and theater. This allows the children to grow in confidence while keeping local cultural traditions alive.

In 2007 an estimated 33.2 million people worldwide were living with the human immunodeficiency virus (HIV), which may lead to acquired immunodeficiency syndrome (AIDS) (UNAIDS 2007). The HIV and AIDS pandemic has had devastating impacts on food security and rural development within households, communities, nations, and regions, and these impacts will endure long into the future. Because HIV and AIDS affect people's physical ability to work, their spread in rural areas has negative repercussions for agricultural production and therefore food security. The quality of life in households affected by the disease can decline drastically, and their vulnerability—physical, economic, and social— may rise commensurately.[1] For biological and sociocultural reasons, HIV and AIDS have a greater effect on women and girls than on men and boys. The level of infection can be three to five times greater among women.[2]

The pandemic may lead to an increase in women's work burden, as women are often the primary carers for the sick. They are also likely to take on new roles in agricultural production and in caring when other members of their household can no longer work because of illness. Given the major role women play in household food security, HIV and AIDS are likely to affect household food security by reducing the time women spend in securing and preparing food and in generating income (thus reducing their purchasing power for food). The sale of assets to cover medical costs further erodes households' resilience to the impact of HIV. To accommodate these burdens, girls are removed from school more often than boys to help with caring for the sick, agricultural production activities, and household tasks. In sub-Saharan Africa, HIV and AIDS have exacerbated women's and children's vulnerability with respect to property rights because of the growing incidence of "land grabbing," which occurs when a deceased husband's relatives take land and other productive assets away from the surviving woman and her children. Consequently, women and children are often forced into high-risk activities to secure food and/or income for themselves or their families (Izumi 2006). As the disease wipes out entire generations of parents, their indigenous agricultural knowledge is disappearing, and the mentoring and apprenticeship opportunities for teaching children about livelihood strategies have vanished as well.

HIV and AIDS have left an estimated 143 million orphans worldwide. Research on HIV and AIDS, gender, and food security by FAO has highlighted the urgent need to work with boys and girls who have lost one or both parents to the disease, as well as with other vulnerable young people, to help them develop the agricultural and livelihood skills and knowledge they will need to sustain themselves and their families in the future and to forge a place for themselves in

their society. To assist them, the Gender, Equity and Rural Employment Division of FAO, in collaboration with the World Food Programme (WFP) and other partners, supports the creation and development of Junior Farmer Field and Life Schools (JFFLSs) in countries where the prevalence of AIDS is highest: Cameroon, Kenya, Malawi, Mozambique, Namibia, Sudan, Swaziland, Tanzania, Uganda, Zambia, and Zimbabwe.[3]

PROJECT OBJECTIVES AND DESCRIPTION

The JFFLS program seeks to improve the livelihoods of vulnerable youths, give them opportunities for long-term food security, and minimize their vulnerability to malnutrition, abuse, and high-risk activities. The program aims to achieve these goals by increasing vulnerable and orphaned youths and children's knowledge of improved agricultural practices for sustainable local development and working toward greater gender equality and empowerment.[4]

The JFFLS methodology is an adaptation of two successful participatory learning approaches: the Farmer Field Schools developed for adult farmers in Cambodia and the Farmer Life Schools (FLSs). In JFFLSs the FFS and FLS approaches have been adapted to the needs and situations of orphans, vulnerable children, and youths. Experience has shown that JFFLSs tend to be more effective when they are connected to adult FFSs implemented in the same area. For example, since FFSs in Mozambique have been included in the National Ministry of Agriculture Work Plan, the integration of JFFLS graduates into existing farmers' associations has been strongly encouraged.

The program provides boys and girls with training in traditional and modern agricultural techniques and in the life skills that will foster their capacity to solve problems, build social relationships, take responsibility, and acquire a range of practical survival skills.

Children learn practical agricultural skills by doing practical agricultural tasks in an allocated plot or field. The children, who are 12–18 years of age, are trained for periods from 6 to 12 months (depending on where the schools are set up) following the local cropping cycle. Children learn about local agroecological conditions, field preparation, sowing and transplanting, weeding, irrigation, integrated pest management, utilization and conservation of available resources, utilization and processing of food crops, harvesting, storage, and marketing skills. The choice of agriculture-related activities varies, as it depends on the agroecological location of the school.

The emphasis on life skills is there because many of the children attending the JFFLSs do not have parents who can share those socializing skills that we all need to live a healthy and balanced life. The JFFLSs address such issues as HIV and AIDS awareness and prevention, sensitization on gender equality, child protection, nutritional education, good hygiene, and the prevention of human, crop, and livestock diseases and their treatment. Efforts are made to ensure that the different needs of boys and girls are identified and met when covering the life skills components. Emphasis is placed on participatory educational theater and social animation to explore sensitive issues such as sexuality, sexual health, children's rights, gender roles, and HIV and AIDS.

For 12 months, a multidisciplinary team of facilitators leads participatory sessions with a group of about 30 girls and boys who range in age from 12 to 18. These sessions are given two to three times a week in the field and classroom, after regular school hours.

INNOVATIVE FEATURES

The learning methods and content of the JFFLSs break with classical approaches to education and apprenticeship in several ways. Boys and girls have equal access to learning, and school resources are distributed fairly among them. Equal distribution of school meals to boys and girls presents an alternative to local practices in many communities, where more food is often allocated to boys, resulting in higher levels of malnutrition among girls.

Food support is important for a successful JFFLS program because it provides an initial incentive for the JFFLS participants to enroll, attend sessions, and have enough energy to participate in the learning process. In general, all children who attend a JFFLS receive some type of school meal.

One of the objectives of the JFFLS program is to promote the creation of gender-equal attitudes, not only through the equal exercise of roles and responsibilities, but also through the development of the capacity to critically assess relationships and links (box 7.20).

The schools stress the active participation and independence of all participants in an effort to build their confidence and self-esteem and help them take charge of their own lives. Experiential learning methods are emphasized. Facilitators strongly encourage participants to express themselves freely, to engage actively in discussions, and to find their own answers to the problems identified.[5] Initiative, creativity, and innovation are rewarded.

Box 7.20 Promoting Gender Equity through Junior Farmer Field and Life Schools

Through the Junior Farmer Field and Life Schools, girls and boys learn to question unhealthy gender norms and to participate in agriculture—and life—in a gender-equitable manner. The curriculum in the JFFLSs includes exercises that address gender issues. The "Planning for the Future" module introduces the daily clock exercise, which amply illustrates how women, men, girls, and boys spend their time differently because of socially imposed expectations. The cropping calendars exercise emphasizes the different roles men and women play in producing different crops and livestock, and it illustrates their use and control of resources. Girls and boys also discuss why these differences exist and whether they really must exist.

Girls and boys share tasks in the JFFLSs. For example, they weed and water, and girls as well as boys present agroecological systems analyses. Ultimately, transmitting gender-equitable attitudes to students depends very much on gender-equitable attitudes among the facilitators. In the training course for facilitators, participants usually are asked to present two theatrical scenarios: a classroom with a gender-aware teacher and one with a teacher who reinforces traditional gender norms. Through humor, the theatrical session effectively demonstrates how girls and boys are treated differently in many classrooms, which leads to a more general discussion of customs and what the community might do to address injustices.

Source: FAO 2007.

The activities cover a range of topics and are based on a standard program with Modules that follow the agricultural calendar:

- *Life cycles,* in which participants get acquainted with the learning field and each other and explore the similarities between plant and human life cycles
- *Planning for the future,* in which participants undertake initial agricultural planning and explore future aspirations
- *Growing up healthy,* in which participants explore what it takes to grow a healthy crop, and how good hygiene and nutrition can help them grow up healthy
- *Diversity,* in which participants explore how diversity in food production helps support food security, and how gender equity and respect for diversity help strengthen the community
- *Protection,* in which participants learn how to protect the crop from pests and disease, and learn how to protect themselves from threats such as HIV, violence, and exploitation
- *Water for life,* a short Module that coincides with the rainy season, exploring crop water management and revisiting the issue of hygiene
- *Care and loss,* which coincides with the harvest: participants learn how to maximize output in the face of agricultural losses and how to conserve and store food for the future and, at the same time, explore how to care for their own psychosocial health and plan for their own futures.
- *Business skills and entrepreneurship,* the focus of the second year/agricultural cycle of the JFFLS, in which participants explore how to take everything they learned about agriculture and life and transform it into livelihood opportunities.

BENEFITS AND IMPACTS

Women and girls, for a number of socioeconomic reasons, often have limited access to productive resources, technology, and information, resulting in lower agricultural productivity. By providing skills that can help women attain the same degree of access to these resources, the program can have a positive impact on agricultural and food production. Nutrition education is also likely to have a positive impact on the nutritional well-being of community members. The training on gender issues,[6] children's rights, and human rights has the potential to change perceptions of the role and status of women and children in households and communities, which may eventually lead to long-term behavioral changes that favor gender equality.

More specifically, preliminary assessments indicate that the JFFLSs are already producing benefits, such as the following:

- Building women's and girls' confidence and providing them with the skills that lead to their empowerment
- Offering new role models for girls through innovative education

- Markedly improving self-esteem, as seen in students' increased self-confidence, satisfaction, pride in school performance, and capacity to share their newly acquired knowledge with others in their communities
- Improving academic performance: anecdotal evidence suggests that the academic performance of JFFLS participants surpasses that of students attending standard schools because of the participatory approaches used in the JFFLSs
- Improving both individual and community farming knowledge and skills. The JFFLS participants have more practical skills, greater expertise, and higher prestige within their home communities. Once perceived as a burden, the students are now regarded as valuable resources for their households and communities.

LESSONS LEARNED AND ISSUES FOR WIDER APPLICABILITY

The JFFLS approach addresses basic issues of access to appropriate education and skills for rural communities, particularly for young people and especially in communities affected by HIV and AIDS, where farm livelihoods must be sustained despite the lack of adult labor and tutelage. By addressing gender-equality issues during the adolescent years, when attitudes and behaviors are more flexible and open to change, JFFLSs give participants the opportunity to narrow gender gaps and transform gender relations. JFFLSs are also proving to be a valuable instrument at the local level for meeting the nutritional, food security, and livelihood needs of orphans and vulnerable children, in ways that are consistent with national strategies, policies, and operations.

Experience has shown that school feeding programs are critical for attracting children in the JFFLSs, especially children from food-insecure and vulnerable households. The WFP's assistance in the pilot schools was crucial in this respect.

The selection of an appropriate host institution is of crucial importance and has immediate and long-term implications for the implementation and potential up-scaling strategy of the JFFLS approach.

In Mozambique and Uganda, JFFLS sites were implemented in conjunction with faith-based organizations or local NGOs, or were linked to formal primary schools. In Mozambique the institutional link to formal schools provides more practical entry points. Several models have been tested. To date, excellent results have been attained when a formal link is created between the JFFLSs and formal schools, or between the JFFLSs and Farmer Field Schools.

The work of the JFFLSs should be strongly linked with sectoral activities and other sector-wide approaches. Identification of an appropriate host institution (such as the Ministry of Agriculture, Education, or Social Development) has also proved crucial. The growing popularity and initial success of the JFFLSs have led to more requests for enrollment. A potential solution to this problem, which would also strengthen links between the JFFLSs, local schools, and other relevant institutions, is the progressive integration of some of the program's content and methods into national school curricula.[7]

If students who complete the JFFLSs are to put their knowledge to use, they will require secure access to land and other vital resources. This issue is especially serious among youths, single-parent families, and households led by orphans, but in the long term all participants in the program require better access to resources, credit, and other facilities to use their skills, stimulate economic activity, increase incomes, and ultimately eliminate the need for the JFFLS program. Changes in national policies of investment and action will also be necessary. The JFFLS approach shows that educational and training goals (including the promotion of gender equity) can be linked effectively, at the local level, with the goals of health and agricultural extension services in combating the multifaceted impacts of HIV and AIDS—directly and indirectly, immediately and in the long term—on individuals, households, and communities.

NOTES

Overview

This Overview was prepared by Maria E. Fernandez (Center for Integrating Research and Action, University of North Carolina-Chapel Hill) and reviewed by Marilyn Carr, Ira Matuschke, Catherine Ragasa, and Mary Hill Rojas (Consultants); Magdalena Blum, Rosalia Garcia, Josef Kienzle, Clare O'Farrell, and Florence Tartanac (FAO); Maria Hartl (IFAD); Nienke Bientema (IFPRI); Burt Swanson (University of Illinois); and Eija Pehu (World Bank).

Thematic Note 1

This Thematic Note was prepared by Maria E. Fernandez (Center for Integrating Research and Action, University of North Carolina-Chapel Hill) and reviewed by Rupert Best (CIAT); Marilyn Carr, Ira Matuschke, Catherine Ragasa, and Mary Hill Rojas (Consultants); Magdalena Blum, Rosalia Garcia, Josef Kienzle, Clare O'Farrell, and Florence Tartanac (FAO); Maria Hartl (IFAD); Nienke Bientema (IFPRI); Burt Swanson (University of Illinois); and Eija Pehu (World Bank).

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1. Pascal Sanginga, Annet Abenakyo, Rick Kamugisha, Adrienne Martin, and Robert Muzira, "Tracking Outcomes of Participatory Policy Learning and Action Research: Methodological Issues and Empirical Evidence from Participatory Bylaw Reforms in Uganda," paper prepared for Farmer First Revisited, Institute of Development Studies, Sussex, www.farmer-first.org.
2. Articles on participatory diagnosis can be found at www.idrc.ca/en, www.fao.org/participation and www.iied.org.
3. Ravi Prabhu, Carol Colfer, Chimere Diaw, Cynthia McDougall, and Robert Fisher, "Action Research with Local Forest Users and Managers: Lessons from CIFOR's Research on Adaptive Collaborative Management," paper prepared for Farmer First Revisited, Institute of Development Studies, Sussex, www.farmer-first.org.
4. Examples can be found at www.ciat.cgiar.org/ipra.
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6. Adrienne Martin, "So What Difference Does It Make? Assessing the Outcomes and Impacts of Farmer Participatory Research," paper prepared for Farmer First Revisited, Institute of Development Studies, Sussex, www.farmer-first.org.

Thematic Note 3

This Thematic Note was written by Leena Kirjavainen (Consultant) and reviewed by Marilyn Carr, Mary Hill Rojas, and Bill Saint (Consultants); Magdalena Blum and Clare O'Farrell (FAO); Maria Hartl (IFAD); Nienke Beintema (IFPRI); and Eija Pehu (World Bank).

1. The introduction and data are drawn from the recent research synthesis by World Bank (2007) and from Beintema (2006).
2. Marilee Karl, "Higher Agricultural Education and Opportunities in Rural Development for Women: An Overview and Summary of Five Case Studies," Report No. 40997-AFR, FAO, Rome, www.fao.org.
3. Much of the discussion draws on Karl (ibid.).
4. Ibid.
5. Harald Schomburg, "Tracer Studies in Africa: Comparative Analysis," www.uni-kassel.de.
6. See note 2 above.

Thematic Note 4

This Thematic Note was prepared by Marilyn Carr (Consultant) and reviewed by Ira Matuschke, Catherine Ragasa, and Mary Hill Rojas (Consultants); Theodor Friedrich, Josef Kienzle, and Florence Tartanac (FAO); Maria Hartl (IFAD); and Eija Pehu (World Bank).

1. Elizabeth Cecelski, "Re-Thinking Gender and Energy: Old and New Directions," ENERGIA/EASE Discussion Paper, May, www.energia.org.
2. Mike McCall, "Brewing Rural Beer Should Be a Hotter Issue," *Boiling Point* No. 47, HEDON Household Energy Network, www.hedon.info.
3. Shruti Gupta, "Barefoot, Female and a Solar Engineer," *India Together* (Oct. 19), www.indiatogether.org.
4. The First Mile Project is supported by the government of Switzerland and implemented in collaboration with the Agricultural Marketing Systems Development Programme of the government of Tanzania. It aims at using information and communications technologies to build linkages between producers and consumers. See www.ifad.org/newsletter/update/2/6.htm for more information on the First Mile Project.

Innovative Activity Profile 1

This Innovative Activity Profile was prepared by Maria E. Fernandez (Center for Integrating Research and Action, University of North Carolina-Chapel Hill) and reviewed by Catherine Ragasa and Mary Hill Rojas (Consultants); Maria Hartl (IFAD); and Eija Pehu (World Bank).

1. Javier Cabero and Willem van Immerzeel, "Building Learning Networks for Small-Scale Farmers: Pachamama Raymi as an Innovative Knowledge Management System," *Knowledge Management for Development Journal* 3 (2): 52–63, www.km4dev.org/journal.
2. Vargas-Lundius, Rosemary, in collaboration with Annelou Ypeij. 2007. *Polishing the Stone. A Journey through the Promotion of Gender Equality in Development Projects*. Rome: International Fund for Agricultural Development.

Innovative Activity Profile 2

This Innovative Activity Profile was written by Marilyn Carr (Consultant), Ira Matuschke (Consultant), and Marietha

Owenya (IFAD) and reviewed by Catherine Ragasa and Mary Hill Rojas (Consultants); Theodor Friedrich, Josef Kienzle, and Florence Tartanac (FAO); Maria Hartl (IFAD); and Eija Pehu (World Bank).

1. Sustainable Agriculture and Rural Development/Food and Agriculture Organization, "Conservation Agriculture (CA) for Sustainable Agriculture and Rural Development (SARD)," www.fao.org.

Innovative Activity Profile 3

This Innovative Activity Profile was written by Hadiza Djibo (FAO) and Marina Laudazi (Consultant), with inputs from Carol Djeddah, Patricia Colbert, Francesca Dalla Valle, Brian Griffin, and John Hourihan (FAO), and reviewed by Catherine Ragasa and Mary Hill Rojas (Consultants); Maria Hartl and Annina Lubbock (IFAD); and Eija Pehu (World Bank).

1. From 2005 to 2007, the number of people dying from HIV and AIDS-related illnesses has declined in part because of the life-prolonging effects of antiretroviral therapy. HIV and AIDS remain the primary cause of death in Africa (UNAIDS 2007).

2. A variety of factors, such as lesser socioeconomic status, can jeopardize women's and girls' ability to choose safer and healthier life strategies and place them at greater risk of infection.

3. The JFFLS approach may also prove effective in regions hosting refugees or afflicted by conflict. Schools have been set up for young refugees in northern Kenya at the Kakuma refugee camp and are being established for former child soldiers in South Kordofan (Sudan). FAO's ESW will be piloting the approach toward the end of 2008 in the Dadaab refugee camp (Kenya) and Darfur (Sudan).

4. Situation where men and women benefit equally from what the world has to offer and can contribute equally to society.

5. Local facilitators always include at least one extension worker, a teacher, a nurse and/or community animator (dealing with health, youth, and sports). Volunteers identified by the community also are part of the team. Strategic partners such as WFP and UNICEF provide technical expertise and learning materials.

6. Extension workers and facilitators receive training in gender issues through the Socio-Economic and Gender Analysis (SEAGA) Programme.

7. The institutional framework of the program can be strengthened, in relation to local stakeholders (community-based organizations, NGOs), as well as with governments and international partners. Communities and local stakeholders (particularly faith-based organizations and primary schools) can be involved in the management of the program, eventually leading to the local ownership of many of the JFFLSs. In addition, governmental structures from the Ministries of Agriculture and Education are increasingly taking over key roles in the management and conceptualization of the program (such as monitoring, training, and impact assessment).

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See also the GAL *eSourcebook* for additional case studies at www.worldbank.org:

Innovative Activity Profile 4—First Mile Project.

Innovative Activity Profile 5—Sudan: Strengthening Agricultural Technical Training Using a Gender Lens.

MODULE 8

Gender Issues in Agricultural Labor

Overview

> Making the rural labor market a more effective pathway out of poverty is . . . a major policy challenge that remains poorly understood and sorely neglected in policy making.
>
> —*World Bank 2007*

Total labor in agriculture has declined in most countries, and this trend will continue as countries industrialize. Over half of all laborers worldwide, however, rely on the agricultural sector. In sub-Saharan Africa and South Asia, 70 percent or more of the labor force works in agriculture. In many regions more women than men are employed in agriculture. In the Middle East more than twice as many women work in agriculture as men, and in South Asia close to one-third more women are working in the sector than men (fig. 8.1). Most work in agriculture is onerous, and the returns are lower than in other sectors. Improving the quality and quantity of jobs in rural areas, and in agriculture, for both women and men, has been identified as a means of promoting economic growth and reducing poverty (Heintz 2006; World Bank 2007). The most significant positive impact on agricultural labor will come through creating a dynamic rural economy in both the agriculture and the nonfarm sectors, focusing primarily on creating a good investment climate (World Bank 2007). This dynamism will assist poor men and women laborers, who both face many constraints in terms of lack of access to resources and power.

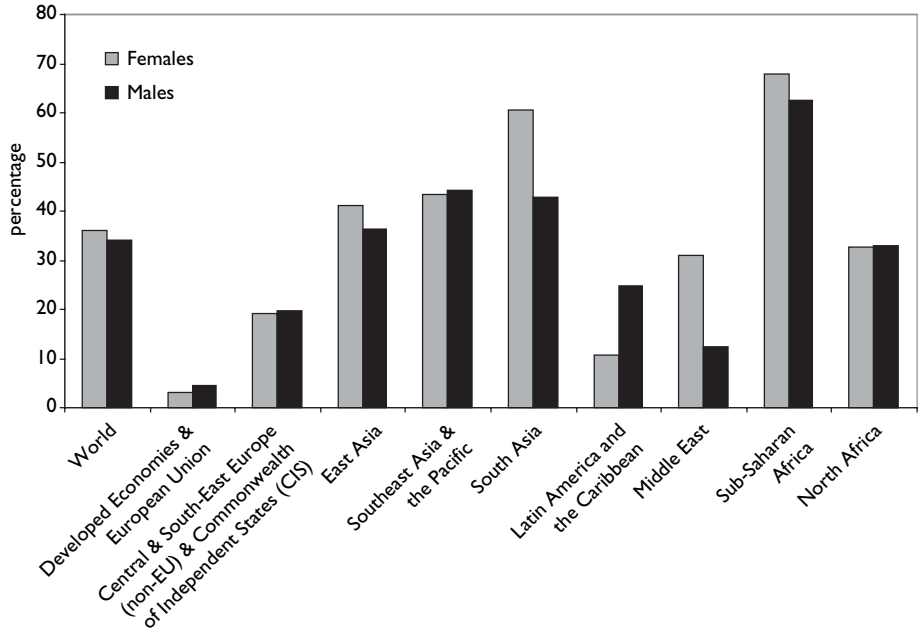
An extensive literature exists on labor issues in general and agricultural labor issues in particular. This Module focuses specifically on the gender equalities in the agricultural labor market and the implications to project and program design.

Gender inequalities in all labor markets are pervasive. Gender inequalities in the agricultural sector are more difficult to quantify but are equally extensive. Reducing labor inequalities makes good development sense. Reducing labor market segmentation and wage inequalities improves the mobility of labor and increases employment. Simulations of Latin American economies show both a reduction of poverty and an increase in economic growth by increasing women's labor force participation; a 6 percent expansion of growth was shown to be possible if men's and women's wages were equal (Tzannatos 1999).

Increasing labor opportunities and returns for poor women in rural areas is pro-poor and improves family and social welfare as increasingly evidenced in literature. Increasing women's earnings and share of family income has been shown to empower women by strengthening their bargaining power in the household. Empirical evidence shows that women invest more than men in the development of children;[1] thus, higher levels of employment and earnings for women not only contribute to current economic growth but also have intergenerational implications (see relationships in fig. 8.2). A global increase in women-headed households, which are asset-poor, heightens the importance of improving employment opportunities to reduce poverty.

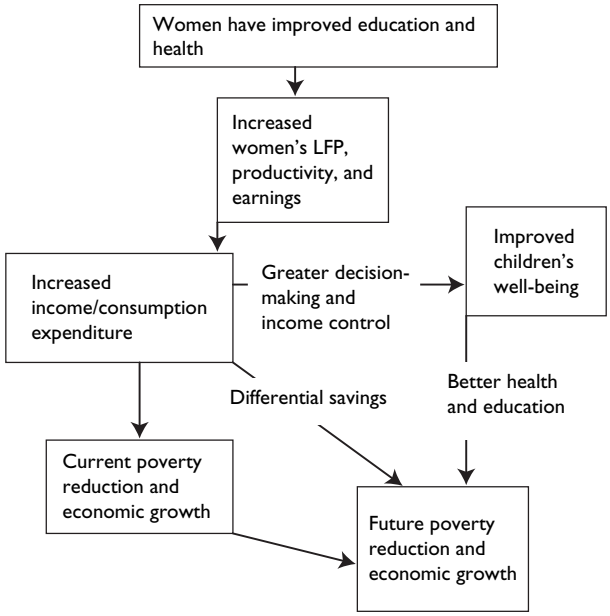
The contribution of women's work to family and society is significant, through their productive and reproductive

Figure 8.1 Percentage of Women and Men in Agriculture by Region, 2007



Source: ILO 2006 (see also table 8.1).

Figure 8.2 Relationship between Women Labor Force Participation (LFP), Poverty, and Economic Growth



Source: Based on Morrison, Raju, and Sinha 2007.

roles; however, if the quantity and quality of that work are poor, or if they reinforce patriarchal gender practices, the negative effects on their health and that of their children can attenuate the development impact. Yet, to the extent that the empowerment of women is an end in and of itself, responsible employment for rural women can increase confidence, promote participation in community activities, and contribute to a perception on the part of women of a better life (Vargas-Lundius 2007).

DEFINITIONS AND TRENDS

This section defines and discusses the trends in agricultural labor.

Definitions of agricultural labor

Agriculture in this Module entails all production, marketing, and processing activities related to agricultural products, including crops, livestock, agroforestry, and aquaculture. *Agricultural labor* means human efforts in these areas; *agricultural wage labor* consists of those activities that are remunerated. Agricultural labor, given this definition, can take place on-farm (for example, agricultural production activities such as planting, weeding, harvesting, milking, or fishing) or off-farm (for example, agroprocessing activities such as cleaning, cutting, packaging, labeling, or marketing). Agriculture is not synonymous with the rural sector, although most agricultural activities take place in rural areas. Increasingly, however, agroprocessing activities take place in factories that may be located in semiurban areas closer to marketing or export sites. Agricultural labor can be unpaid (such as on-farm family labor), paid-in-kind (such as barter or labor exchange), self-employed (such as marketing of one's own produce),

or wage labor. Given the coexistence of these forms of labor across crop and noncrop products, the measurement of agricultural labor is challenging, as will be discussed below.

This Module focuses largely on on-farm agricultural labor and agricultural wage labor, with the emphasis on wage labor. The constraints based on gender differences facing agricultural entrepreneurs (self-employed producers, farmers, and business owners), such as access to land, markets, and technology, are detailed in other Modules (see Modules 4, 5, 7, and 12). Strong linkages exist between these different agricultural categories: these economic activities can all be conducted by the same person. A small business owner may also be working on a farm or in another business as a laborer. The Module focuses on agricultural wage labor but recognizes that improvements in labor conditions are dependent on other subsectors (for example, finance, marketing, and rural infrastructure).

Wage laborers may work in formal markets, where workers make individual agreements, or bargain collectively with employers to secure contractual agreements about wage and benefits. But the majority of agricultural wage laborers in many countries, particularly women, either are working on land owned by spouses, families, or neighbors or are hired in informal markets. Most women working in agriculture thus typically do not have contracts that provide them direct control over the returns to their labor or that legally oblige employers to provide benefits or adhere to existing labor laws. This Module provides a detailed analysis of several areas of intervention designed to promote decent work in agriculture throughout developing countries, focusing largely on issues related to women's employment. The Innovative Activity Profile in this Module provides a best practice example from Thailand.

Trends in gender and agricultural labor

The agricultural workforce is estimated at around 1.1 billion, of which 450 million are estimated to be hired farm workers (Hurst, Termine, and Karl 2005). The number of waged workers, including women wage workers, is growing even though the agricultural workforce as a whole is shrinking. Migrant labor in agriculture is increasing. As agriculture industrializes and global competition increases, downward pressure on the costs of employment leads to more informal and flexible employment contracts, termed the "casualization" of labor. Independent smallholder farmers increasingly supplement their earnings with wage labor. These trends have important gender implications.

The growing proportion of women in the labor force has been one of the most striking trends of recent times. A large body of literature has debated the "feminization" of labor markets.[2] This discussion has, however, been for the most part based on analyses of data on urban employment statistics for industrial or middle-income countries. Assessing levels and trends in agricultural labor, particularly by gender in poor countries, is far more difficult. To the extent that women are concentrated in both unpaid and casual labor, their efforts in agriculture are grossly underrepresented. The *2008 World Development Report* estimated agricultural labor from multiple country surveys and identified key trends; some of these trends are summarized below.

There is declining agricultural labor. Labor in the agricultural sector is declining for both men and women, with the exception of women in the Middle East and North Africa (see table 8.1). Although men are migrating out of agriculture faster in some areas, the declines in women's agricultural employment are also significant. Over the long run, migration out of agriculture is necessary. Migration poses opportunities and risks for both men and women. Young women who migrate from rural areas for work are particularly vulnerable to abusive contracts and work situations. Underage Khmer, Lao, and Myanmar girls migrate to work in agriculture in Thailand, where some are held captive working under poor conditions (Pearson and others 2006).

More women than men work in agriculture. Data show that when both self-employment and wage labor are considered, women provide more employment in agriculture than men in many regions (see tables 8.1 and 8.2). Women represent a larger proportion of laborers than men in the agricultural sectors of Asia, sub-Saharan Africa, and the Middle East and North Africa. Women also dominate in some Caribbean and Central American countries, especially in economies with low per capita income. And women's proportion in agricultural wage labor markets has increased, although it still lags behind that of men in all regions. Further regional data are also presented in table 8.3.

The number of waged women workers in agriculture is rapidly increasing because of globalization, high-value agricultural production, and the "casualization" of labor. One stimulus for the growth in women's agricultural wage labor has been the "industrialization" of agriculture, particularly the growth of high-value agriculture production and agroprocessing for export. Vegetable production can require up to five times more labor than cereal production. Between 1986 and 1994 in Chile, women agricultural workers in the fruit export industry increased by more than 20 percent, and men agricultural workers declined by 20 percent (Lastarria-Cornhiel 2006). Table 8.4 shows the high proportion of women workers for some of these crops. These trends and the implications for labor conditions for women

Table 8.1 Men's and Women's Share in Total Employment by Sector, 1997 and 2007

	Employment in agriculture (%)		Employment in industry (%)		Employment in services (%)	
	1997	2007	1997	2007	1997	2007
Women						
World	43.5	36.1	16.8	17.6	39.6	46.3
Central and Southeast Europe (non-EU) and CIS	26.9	19.2	22.2	17.9	50.8	62.8
Developed Economies and European Union	5.3	3.2	16.7	12.5	78.1	84.3
East Asia	51.9	41.0	22.8	25.5	25.3	33.5
Latin America and the Caribbean	14.6	10.7	13.6	14.5	71.9	74.8
Middle East	28.4	31.0	20.0	18.8	51.5	50.2
North Africa	31.2	32.6	19.1	15.2	49.7	52.2
South Asia	74.0	60.5	11.2	18.4	14.7	21.1
Southeast Asia and the Pacific	50.3	43.4	13.9	16.3	35.8	40.3
Sub-Saharan Africa	74.8	67.9	5.9	5.8	19.2	26.4
Men						
World	40.0	34.0	24.0	25.6	36.1	40.4
Central and Southeast Europe (non-EU) and CIS	27.0	19.8	33.2	32.6	39.8	47.6
Developed Economies and European Union	6.7	4.6	37.1	34.3	56.1	61.1
East Asia	44.6	36.3	25.6	28.0	29.8	35.7
Latin America and the Caribbean	28.6	24.7	24.8	27.1	46.5	48.2
Middle East	19.6	12.5	27.2	28.0	53.3	59.4
North Africa	36.6	32.9	20.1	22.3	43.3	44.8
South Asia	53.5	42.9	17.0	23.0	29.5	34.1
Southeast Asia and the Pacific	47.7	44.3	19.4	21.0	32.9	34.7
Sub-Saharan Africa	70.0	62.4	10.4	12.4	19.6	25.2

Source: ILO 2006.
Note: CIS = Commonwealth of Independent States.

are documented in Thematic Note 3 on Labor-Intensive Export Agriculture.

Growth in agricultural employment has come in areas such as horticulture, floriculture, aquaculture, pigs, and poultry, in which factory-style operations are possible and economical. Economies of scale apply, so the bulk of the work is carried out by paid employees (ODI 2007). Women figure prominently in these sectors, such as shrimp-processing plants in Argentina, Bangladesh, India, and the Pacific Islands and poultry processing in Brazil. An increasing number of these industries employ labor under temporary conditions or through third parties.

A rapid expansion in the use of contract labor has been seen, with labor provided on a third-party basis to producers. In India men casual workers increased from 65 percent in 1972 to 80 percent in 2002; women casual workers increased from 89 percent to 92 percent over the same period (World Bank 2007). Between 25 and 50 percent of labor in the Chilean fruit export market is contracted. Casualization in Chile, and many other countries, has a distinct gender bias: Between 52 and 70 percent of temporary workers are women, whereas permanent workers are mostly men (Barrientos and Barrientos 2002). Under these temporary employment conditions, women are subject to low levels of protection in terms of wage levels, employment security, health and safety, and environmental standards and social protection.

Representation of women in traditional labor institutions is weak. The deregulation, globalization, and competitive pressure described above have also been influential in, or have accompanied, the erosion of trade unionism and traditional forms of collective action, although, for example, foreign direct investment is not necessarily detrimental to rights to association and collective action (Brown 2007). Where collective bargaining functions, it can play a role in protection

Table 8.2 Rural Employment by Sector of Activity and Type of Employment, Selected Countries

Sector of Activity	East Asia and the Pacific (excl. China) (%)	Europe and Central Asia (%)	Latin America and the Caribbean (%)	Middle East and North Africa (%)	South Asia (%)	Sub-Saharan Africa (%)
Men						
Agriculture, self-employed	46.8	8.5	38.4	24.6	33.1	56.6
Agriculture, wage earner	9.4	10.1	20.9	9.4	21.8	4.0
Nonagriculture, self-employed	11.5	7.4	9.2	8.8	11.8	6.9
Nonagriculture, wage earner	17.4	31.4	17.2	30.9	15.4	8.6
Nonactive or not reported	14.4	27.5	13.4	26.0	14.6	21.7
Women						
Agriculture, self-employed	38.4	6.9	22.8	38.6	12.7	53.5
Agriculture, wage earner	5.7	5.4	2.3	1.0	11.4	1.4
Nonagriculture, self-employed	11.3	1.6	11.7	2.8	2.9	6.8
Nonagriculture, wage earner	8.4	18.1	11.5	3.9	2.7	2.8
Nonactive or not reported	35.5	46.9	51.2	53.3	64.3	32.7

Source: World Bank 2007, table 9.2.

wages. New forms of national and transnational movements have emerged, including women's associations such as the Self-Employed Women's Association (see Thematic Note 1) and international movements, such as those against child labor or toward fair trade.[3] These movements increasingly have the power to influence labor conditions.(see Thematic Note 3).

KEY GENDER ISSUES

This section discusses the gender issues specific to agricultural labor markets.

Women's time allocation

Worldwide, women are the primary workers in the "reproductive economy": maintaining households, raising children, preparing food, and taking care of sick and indigent relatives, including parents. In rural areas where these activities are more onerous because of the paucity of basic services such as electricity and water, women are more constrained. In the Middle East and North Africa, IFAD found that solutions to water and fuel supply freed women to participate in income-earning activities.[4] Concomitantly, practitioners must avoid interventions (such as new technologies) that increase women's labor without corresponding financial benefits (Deutsch, Duryea, and Piras 2001).

Parental care for children consumes a significant proportion of women's time. Lack of adequate child care represents one of the principal barriers to women's employment and may be a principal reason for the larger proportion of women in agricultural activities. In labor markets women pay for the inflexibility by being consigned to the informal sector or to jobs with lower wages. Studies demonstrate that the provision of affordable child care increases women's labor force participation and earnings (Deutsche, Duryea, and Piras 2001).

Unemployment and the casualization of labor

More women than men as a proportion of their labor force are seeking work but unable to find it in almost all regions of the world. In 2003 the global women's unemployment rate was 6.4 percent compared to 6.1 percent for men (Elder and Schmidt 2004). Women living in rural areas are more likely than men to be unemployed or underemployed and without access to a cash income. Men are more able to migrate for employment, whereas women have primary responsibilities for households. The proportion of women among categories of nonpermanent workers is increasing (ILO 2003). Women are the first to be laid off, because casual and seasonal laborers have little security.

Wage gaps

Women represent the largest group of "unpaid" workers in both rural and urban areas. Globally the proportion of women who are "contributing family workers" is 34.5 percent,

Table 8.3 Regional Characteristics and Key Issues of Women's Agricultural Labor

Region	Characteristics of women's agricultural labor force	Key issues for women's agricultural labor
Central and Southeast Europe (non-EU) and Commonwealth of Independent States (CIS) Employment to population ratios: Women: 45.6%; men: 63.8% Working women in agriculture (2007): 19.2% Working women in wage jobs (2007): 78.5%	Low percentage of men and women in agriculture, but high percentage of women vs. men Formal market stronger in most countries Wage inequities in formal market Young women's employment to population ratio higher than for young men	Rural productivity low Labor legislation not enforced Women not included in agricultural productivity-enhancing programs, such as training
Latin America and the Caribbean Employment to population ratios: Women: 47.1%; men: 73.7% Working women in agriculture (2007): 10.7% Working women wage and salaried jobs (2007): 64.6%	Considerable variability across countries High on-farm labor (some countries) Low ratio of participation in agriculture in comparison to men's participation Growing women's informal labor market participation Highest rates of occupational segregation	Women's employment opportunities in rural and urban areas low Occupational segregation Social protection for women in growing informal agricultural labor markets
North Africa Employment to population ratios: Women: 21.9%; men: 69.1% Working women in agriculture (2007): 32.6% Working women in wage and salaried jobs (2007): 58.4%	Lowest women's employment levels of all regions Only region where women's employment in agriculture increased Wage labor concentrated in urban areas More women in rural areas than men due to migration High percentage of women as on-farm labor Women responsible for small livestock	Low productivity of on-farm labor Heavy household labor burdens Social constraints to market work Limited access to nonagricultural employment
South Asia Employment to population ratios: Women: 31.4%; men: 78.1% Working women in agriculture (2007): 60.5% Working women in wage and salaried jobs (2007): 15.5%	High percentage of informal agricultural labor Higher percentage of women in agriculture (60.5% of women vs. 42.9% men) High percentage of self-employment Overlap of culture and caste with gender in discrimination Occupational segregation in wage market	Unequal access for women in formal sector employment Few legal protections Undeveloped labor market institutions
Southeast Asia and the Pacific Employment to population ratios: Women: 62.5%; men: 78.4% Working women in agriculture (2007): 43.4% Working women in wage and salaried jobs (2007): 39.2%	Highest women's labor participation High percentage in agriculture High involvement in fisheries Overlap of culture and race with gender in discrimination Large gender wage gap	Improvement in work conditions in agroprocessing and agricultural wage markets needed Discrimination in all forms to be addressed
Sub-Saharan Africa Employment to population ratios: Women: 56.9%; men: 79.7% Working women in agriculture (2007): 67.9% Working women in wage and salaried jobs (2007): 15.5%	High percentage of on-farm labor Gender-specific on-farm tasks and crops Occupational segregation in wage market Large involvement in informal sector (processing) Growth in women's labor in high-value crops Unskilled labor force	Limited employment opportunities for women in rural areas Unequal access for women in informal sector development Few legal protections, especially for informal workers Undeveloped labor market institutions Productivity levels of women's labor low

Sources: ILO 2008; World Bank 2007.
Note: Data for North Africa exclude Middle East data, but Middle East data are similar; data exclude East Asia.

Table 8.4 Proportion of Women Wage Laborers in High-Value Crops

Country	Crop	Women as share of workers
Northeast Brazil	Vineyards	65% of field workers
Chile	Fruit	50% of temporary workers
Colombia/ Mexico	Flowers	60–80% of workers
Kenya	Horticulture	70–80% of packing, labeling, and bar coding
Sinaloa, Mexico	Vegetables	40% of field workers 90% of packers
South Africa	Deciduous fruit	69% of temporary workers
Uganda	Flowers	85% of workers

Sources: Dolan and Sorby 2003; ILO 2003.

compared to 24.9 percent of men (ILO 2008). In agriculture women labor on family farms but rarely control farm income. When women are employed, they are usually paid less than men, even for the same tasks. In India the average wage for agricultural casual work is 30 percent lower for women than for men, 20 percent lower for the same task (World Bank 2007). Studies indicate that wage gaps between men and women in many sectors have narrowed over time, but they persist in many countries. Recent studies in agroprocessing show large wage gaps. For example, in Bangladesh women fry catchers and sorters earn about 64 percent of what men fry catchers and sorters earn (USAID/GATE Project 2006).

Occupational segregation

In general, women and men work in distinct activities that offer different rewards and career opportunities, even when they have similar education and labor market skills. In agricultural production, women usually produce the food crops for the household, whereas the men are responsible for crops that will be marketed or sold. Some tasks are "feminized," such as weeding on the farm, or poultry processing and flower packing in the factory, despite evidence of the ability of men to perform these tasks equally well in other companies or countries. The reverse also holds, and generally men run equipment and handle tools, jobs that usually require training and elicit higher wages. Occupational segregation is particularly strong in some countries in South Asia, Southeast Asia, and Latin America. The high-value agricultural export industry is highly segmented and gender segregated, as discussed in Thematic Note 3.

Stereotyping of gender roles is ubiquitous. For example, a manager in a cut-flower-processing plant in Kenya said that "women are more dexterous, which is good for flowers" (Collinson 2001). Confining women to a limited number of occupations has high equity and efficiency costs, and it contributes to misallocation of labor and suboptimal investments in women's education because girls' potential is usually gauged through current market opportunities (Tzannatos 1999).

Violence, health, and safety

The high prevalence of women in casual, low-paid employment with limited security leads to other abuses. Violence and sexual harassment in the workplace are more frequent under these conditions. Men supervisors control decisions concerning work performance and hence remuneration for the "task." Studies have shown that women must trade sex for job security, markets, and other employment benefits that should be part of the labor contract. In studies of the cut flower industry in Kenya, women reported that supervisors required sexual favors for job security, and refusal could lead to dismissal (Dolan, Opondo, and Smith 2002). This harassment occurs in spite of company codes of conduct that prohibit such behavior. An example cited in Module 13 of this volume indicates that the increasing competition between local fish traders, who are generally women, and external buyers is resulting in risky fish-for-sex exchanges that have negative social consequences for local fishing communities.

The prevalence of HIV and AIDS rises in communities where unequal labor relations leads to increased sexual activity in the workplace. An additional safety risk for women arises under shift work that entails traveling at night. However, regulations controlling women's access to different jobs can be discriminatory (see Thematic Note 2).

Women face health hazards in the cultivation of many crops reporting back pain and pelvic problems in rice cultivation and weeding. Agricultural work can be arduous for both sexes, but to the extent that women are concentrated in specific activities, they will experience greater exposure to some risks. Occupational safety risks can be high in factories and agroprocessing plants, including equipment accidents, exposure to unsafe conditions, and contact with chemicals and toxic substances. Women who work in fish- and shrimp-processing experience arthritis and other negative health effects of standing or sitting in wet, cold environments for

10 to 12 hours a day (USAID/GATE Project 2006). In a recent study of the fish and shrimp industry in Argentina, the majority of the women interviewed held temporary jobs and therefore had no medical or social coverage. More than two-thirds of the women interviewed work more than five days a week, and 63 percent work more than eight hours a day (Josupeit 2004).

Health risks in the growing horticulture industry include exposure to toxic products through inadequate training and protective clothing, poor hygienic conditions, and physical demands and long hours. Every year at least 170,000 agricultural workers are killed as a result of workplace accidents, and some 40,000 of these are from exposure to pesticides (ILO 2003). To the extent that women predominate in some of these activities, they have greater exposure. See Thematic Note 3 for a more detailed discussion.

Under conditions of temporary, seasonal, or limited contracts, no health insurance is provided. Where there are no on-site medical facilities, these women, in greater proportion than men, bear the cost of medical services. In factories or on plantations, such as in fruit-producing areas in South Africa, medical facilities may be few or lacking, and workers may even be dependent on employers for transport to medical facilities.

Gender and child labor

In certain areas the issues of gender and child labor overlap. The International Labour Organization (ILO) estimates that some 70 percent of child labor occurs in agriculture (ILO 2003). Studies of the fisheries industry in India indicate that 60 percent of workers in the factories are young women and girls under the age of 25 and as young as 14.[5] A recent study of the cotton industry in India estimated that 450,000 children under the age of 14 are working in hybrid cotton fields, mostly in Andhra Pradesh, under conditions of "bonded labor" (Ventkateswarlu n.d.). Girls may be particularly at risk in some countries because they are the least likely to get schooling. A study in Ghana showed that children between the ages of 12 and 16 frequently quit school to work on agricultural farms and plantations.[6] In Ecuador children between the ages of 9 and 11 work in the flower plantations (ILO 2000). The hazards for working young girls are great: physical abuse, no protective gear, and exposure to chemicals that may increase risks to reproductive capacity, little information on hazards, and no medical services. However, surveys also indicate that families would prefer to send their children to school but need the income additional family members provide (ILO 2004).

KEY CONSIDERATIONS FOR PROGRAM AND PROJECT DESIGN

The following summarizes the key principles and guidelines in designing gender-responsive projects and programs. Details and concrete examples are presented in Thematic Notes 1–3 and Innovative Activity Profile 1.

Ensuring equitable agricultural labor impacts when designing policies and programs

Remarkably, gender impact is still frequently ignored in the design of policies and programs. Most, if not all, policies and programs designed to impact economic growth in urban or rural areas, agriculture, or industry will have gender impacts on agricultural labor. These impacts can result in a positive change in the gender distribution of participation and returns on labor, as industrial growth in China has promoted opportunities for young women, but in each case the earnings, productivity, and employment impacts must be examined.

A gender analysis is important for development policies and programs directed at agriculture. A review of the gender effects of trade agreements shown in box 8.1 demonstrates

Box 8.1 Gender Impact of Trade Agreements

Labor demand: Relative prices of factors change demand for labor, and sectors expand and contract. If women are located in sectors with comparative advantage for trade, they will benefit from employment, and, if not, they will be displaced. In Zimbabwe a reduction in tariffs on imported clothing closed the domestic industry, which employed predominantly women.

Wages: The convergence of factor prices as a result of liberalizing trade is postulated to benefit both consumers and producers. But in regions where unions are weak or nonexistent, workers may not be able to capture these benefits. In Mauritius, following liberalization in the 1970s and declines in wages, between 1985 and 1995 wages rose and women benefited from employment in the growing textile sector. But in the *maquila* sector in Mexico, with a very elastic supply of labor, wages fell between 1980 and 1999.

Source: Gammage, Jorgensen, and McGill 2002.

the price, employment, wage, and consumption effects and differing impact on men and women.

Designing gender-equitable agricultural labor programs and projects

Given that agriculture is a declining sector, expanding agricultural labor markets is not a policy objective on its own, for men or women. Other policies must complement policies targeted at improving the quantity and quality of rural labor. Facilitating migration out of the rural sector may be more urgent in some countries. An increase in nonfarm opportunities implies a potential reduction in the supply of agricultural laborers, which would increase agricultural wages.

Generating more rural employment opportunities, on- and off-farm

The *World Development Report 2008* argues that the most significant positive impact on agricultural labor will come through creating a dynamic rural economy in both the agriculture and the nonfarm sectors, focusing primarily on creating a good investment climate. Key government actions should be taken to "secure property rights; invest in roads, electricity, and other infrastructure; remove price interventions adverse to rural products; develop innovative approaches to credit and financial services; and aid in the coordination of private and public actors to encourage agro-based industry clusters" (World Bank 2007).

The promotion of dynamic regional towns and small cities is crucial to improve conditions for rural laborers through spillover effects. In Indonesia, even within rural areas, wage employment as a percentage of total nonfarm employment increases with village size (World Bank 2007). Many rural workers migrate to try to find better jobs, often in urban areas or manufacturing industries. Many poor households in developing countries now combine farm and off-farm activities seasonally. Improvements in communications and transport have created conditions for the large-scale internal movement of people. In India up to 40 percent of some villages commute daily to urban areas. Patterns in China are similar. Policies that support development in semirural areas will reduce the burden of migration on households. Active labor market programs, described below, can be instrumental in facilitating the successful migration from rural to urban areas. The challenge is to ensure that these programs and policies remain gender-neutral or reduce gender inequalities where they exist.

Extending legal rights frameworks for women agricultural laborers to increase decent work

Agricultural labor rights are mainly determined by *labor law,* and particularly by two broad groups of norms: those concerning all workers, both men and women (minimum wage, safety and health, trade union rights, and others), and those specifically concerning women (nondiscrimination, maternity benefits, "protective" legislation) (FAO 2006). International legislative frameworks exist largely through UN and ILO forums. The promotion of these international conventions has assisted in improving labor conditions in adopting countries, although not all are implemented to the same extent. Most of the conventions and recommendations are outlined in Thematic Note 2.

Even if international conventions have been ratified, national legislative frameworks may be inadequate. For example, Kenya does not have explicit provisions against sex discrimination (FAO 2006). And, where legislation exists, an *affirmative action strategy* is usually necessary to implement the legislation. Beyond labor law, other norms such as family law and case law are also relevant. For instance, in some countries family law allows the husband to demand his consent for his wife's signature on an employment contract or allows him to terminate the contract. Case law can establish a basis for women's employment rights. See Thematic Note 2 for a more detailed discussion.

Labor contracts also function as a legal framework regulating women's labor rights and responsibilities. Recently *corporate social responsibility (CSR) codes,* established by companies (often under pressure of international and national nongovernmental organizations [NGOs]), have become important instruments for establishing standards of decent work. Although many definitions of CSR can be found, most of the codes have grown out of demand from social groups and consumers that corporations "treat stakeholders in an ethical or responsible manner" (Hopkins 2004). The Fair Trade and Ethical Trading Initiatives are two groups of stakeholders that have established standards, institutions, and infrastructure to bring about change in corporate behavior, Not all codes of conduct (or codes of practice) benefit women and men equally, and greater attention needs to be paid to gender impacts of these codes. Codes of conduct and their application in the horticulture industry are discussed in Thematic Note 3.

Multilateral organizations are in a position to encourage national government actions on promotion of ratification of international labor conventions, support for development of national legislation and implementation frameworks, and promotion of affirmative action strategies. One

example is external support for the integration of gender into Chile's legal framework. Presenting the economic arguments to governments and companies for improvements in labor conditions is a cost-effective component of a strategy. Overall arguments for improved labor allocation as well as research in areas such as productivity enhancement and social protection should be presented.

Increasing employment opportunities and active labor market programs

Rural wage employment has the potential to provide an escape route from poverty for many women. Increasing employment is best achieved through sound economic policies to stimulate the private sector. However, governments and other organizations can facilitate the process under conditions of market failures or instability, such as economic downturns, and, in the case of agricultural laborers, seasonal fluctuation and periodic market volatility.

Affirmative action programs address discrimination in the market where social factors create barriers to full market information. Affirmative action employment programs can promote gender equality in the formal sector in countries with fairly well-developed labor markets and reasonable law enforcement. Despite concerns about reverse discrimination and productivity costs, recent studies from the United States find little empirical evidence that affirmative action hires are less productive than other workers (Holzer and Neumark 1999). Programs do not have to be restricted to quotas but can include special recruitment efforts, broader screening practices, and special assistance programs, such as training and changes in hiring, pay, or promotion standards (World Bank 2001).

In cases of downsizing, governments and other organizations can provide employment information and networking, unemployment insurance systems, small start-up loans, and legal aid and can develop training capacity and new venture services (USAID/GATE Project 2005).

In an economic downturn or under other economic or sector-specific changes, a wide range of programs have been attempted to lower unemployment rates: these programs have been termed *active labor market programs* (ALMPs). ALMPs, used in Europe to reduce unemployment, have been implemented in many countries, but their application in agriculture has been largely to support migration out of the sector. For example, a job-matching program for migrants in China provided off-farm employment to about 200,000 upland laborers over six years. Women made up 25 percent of these laborers and reported more confidence, reduced work burdens when returning home, and greater economic independence (World Bank 2007). ALMPs have been successfully implemented in Organisation for Economic Co-operation and Development (OECD) countries to reduce the risk of unemployment and to increase the earnings capacity of workers. Particular interventions include employment services, training, public works, wage and employment subsidies, and self-employment assistance. A recent evaluation indicated that although ALMPs were not a panacea for unemployment, some types of interventions, properly designed, could be effective for some workers (Betcherman, Olivas, and Dar 2004). Many findings from industrialized countries seem to apply broadly to transition countries, but this is not always true in the case of developing countries (on the basis of what is still a small sample of studies). The ingredients for successful interventions, however, do seem to apply for all countries. Good design features include comprehensive packages of services, programs that are oriented to labor demand and linked to real workplaces, and careful targeting. Nevertheless, it should not be assumed that women will be automatic beneficiaries of these programs. To ensure that women benefit as much as men in ALMPs, gender analysis should be included in the design.

The most effective set of ALMPs were employment-based training (Betcherman, Olivas, and Dar 2004). The interventions that are successful often feature an integrated package of services (education, employment, social as needed) to complement the training. Employment services are generally the most cost effective of the ALMPs.

Public works programs have variable success rates at short-term income transfer and even more uncertain effects on long-term employment. Longer-term employment effects are more often found where these programs generate viable infrastructure. In India the Maharashtra Employment Guarantee Scheme, designed in large part to fill the seasonal employment gap due to seasonal fluctuations, famines, and natural disasters, has been able to provide significant amounts of work, leading to increased wages in the economy, although other rural employment generation projects have not been as successful (ODI 2007). Public works programs in South Africa with the objective of contributing to long-term employment, including the popular Work for Water program, have generated interest among planners. Although the infrastructure and social impacts are positive, few studies document whether skills development in equipment use or financial management has succeeded in increasing rural employment. In any type of public works program, the design must consider gender roles to avoid excluding women.[7]

Reducing wage gaps and strengthening institutions

Women must be able to recognize the wage differential, understand the legal context, and organize within institutions or create new ones to negotiate equal wages and engage with employers, and employers must also comply with legislation. Stronger community organizations, including unions and women's organizations, can raise the issues.

One of the means of raising awareness of women's rights among workers has been to strengthen local organizations by training on alliance formation and networks. The ILO has developed a program with Danish and Norwegian support (Women's Education for Integrating Women Members in Rural Workers' Organizations) with the objective of increasing empowerment of rural women in Tamil Nadu and Madhya Pradesh. The program has two objectives: increasing awareness in trade unions of ILO standards as applied to gender and promoting the involvement and representation of women in trade unions. Small grants were provided by USAID to assist Latin American organizations working to improve women's labor conditions (WID TECH 2003b). These grants facilitated training in worker's rights and the sponsoring of community awareness events. The role of unions is discussed in Thematic Note 2.

Diversifying occupational choice

To achieve the full economic benefit from employment, women need to have greater choice over their occupations. Education programs can help through scholarships and mentoring programs and through ensuring curricula are not biased toward segregation by theme and occupation lines. Affirmative action programs have been successfully implemented in some countries.

One of the most effective ways of ensuring gender balance is to increase the number of women among "front-line staff" (IFAD 2000). Programs and projects can hire qualified women candidates or train women for occupations associated with "segregated" occupations, such as hiring women extension staff (for example, in Sudan) or by giving extension responsibilities to women's group promoters. In Ghana community-selected women extension volunteers have proved effective as an interface between women's groups and government extension services. In other countries, such as Cambodia and Indonesia, women volunteers have been trained as auxiliaries for animal vaccination (IFAD 2000). Women can be trained in workplace safety programs (WID TECH 2003b) as agricultural or fisheries extension workers or fishnet weavers trained to become fisherwomen. The "Projoven" program in Peru is noted to have reduced occupational segregation during 1996–2000 through supplying semiskilled training and work experience to urban, low-income, young people in specific trades that are in demand in the productive sector (Betcherman and others 2004).

Improving social protection

The disproportionate number of women in casual and seasonal jobs and the attendant risks for women and children have heightened the need to increase social protection for women in all sectors of the labor market. Social protection can focus on reducing risks or on maintaining assets.[8] In the context of agricultural labor, social protection refers mainly to medical and unemployment benefits and pension provision.

The extension of public social protection programs to temporary, casual, and seasonal laborers will address some of the issues of gender inequity in agricultural labor. (Box 8.2 provides several brief examples of social protection programs.) Unemployment insurance, health insurance, and pension programs are all inaccessible to temporary and casual workers in most developing countries. General agreement holds that the private sector should not have to bear the full cost of these programs, but the balance between private and social costs and benefits needs to be evaluated. Barrientos and Barrientos (2002) develop a social responsibility matrix and discuss the roles of each stakeholder (see Thematic Note 3).

Box 8.2 Social Protection Programs

Turkey has taken steps to establish public social security schemes for agricultural workers. A voluntary program was established in 1983. Contributions paid at a prescribed level for at least 15 working days each month provide entitlement to old-age, invalidity, or survivor's pensions. A number of trade union initiatives have evolved from pressure from workers' organizations. In Argentina, Union Argentina Trabajadores Rurales y Estibadores (UATRE: Union of Rural Labourers and Dock Workers) operates a health and unemployment fund, and the union's initiative to extend protection to large numbers of unregistered and unprotected workers was recently formalized in national legislation. A national registry of agricultural workers and employers (RENATRE) was an important first step to the development of an unemployment fund and benefit system.

Source: ILO 2003.

Programs to extend social protection to workers in the informal sector in India and temporary agricultural workers in Chile present an opportunity to assess the costs and benefits of these programs (see Thematic Note 1).

A recent approach to extending social protection can be found through private sector codes of conduct. These codes are increasingly being applied along the global value chain in horticulture. Building the business case for improving labor standards performance is critical to engage the private sector (see Thematic Note 3). The role of social dialogue should not be neglected because collective bargaining is instrumental in improving social protection.

Improving health, security, and safety

Providing a healthy workplace and maintaining the health of workers should be good business, but managers of companies may have to be convinced of the economic benefits of, or be forced into, applying basic standards. Health concerns for women include violence and sexual harassment in the workplace, exposure to HIV and AIDS, as well as occupational safety issues surrounding, for example, accidents and exposure to unsafe conditions, chemicals, and substances. Overtime and night shifts can also create safety concerns for women, although these can also be used to restrict women from employment categories.

Improved information and data provided by laborers and labor organizations concerning a perceived problem can help lead to its resolution (see box 8.3). Dissemination of policies is important, and the implementation of training programs is necessary.

The workplace is an extremely effective center for HIV and AIDS awareness campaigns. Plantations in Uganda were experiencing extremely high rates of mortality, but as government campaigns were complemented by company information and condom distribution, the mortality rate has fallen significantly. Human rights work in some regions has been expanded to domestic violence and its social and economic repercussions. Some companies have recognized the cost of violence and facilitated support for abused women.

Increasing the information base

Integral to convincing governments, businesses, and civil society of the efficacy of change is accurate, up-to-date analysis based on reliable statistics. The quality of agricultural labor data is weak, and for the women agricultural labor force, it is even worse. Estimates of temporary women workers in horticulture in Chile alone vary from a low of 57,000 to a high of 162,500. Each program, project, or activity should have gender-disaggregated data to support it, or the means to collect the data built into the initiative. Efforts should be made to integrate gender-disaggregated variables into international, national, and local statistical databases on labor markets. UNIFEM has supported redefinitions of work and labor to ensure that data on unpaid and informal sector workers, much of which would be in agriculture, are included in employment databases (Chen and others 2005). Detailed and accurate costs are also required to convince governments and employers of the efficiency and effectiveness of programs that promote women's labor market participation.

Box 8.3 Nicaragua and Guatemala: Improving Information for Health, Security, and Safety

A representative sample survey was introduced by the Maria Elena Cuadro Women's Movement in Nicaragua, which represents over 7,000 women members. As the influence of the organization has grown through publicity campaigns and increased membership, information from the survey supports arguments for better work conditions. The publication of the results has been influential.

In Guatemala organizations for women in *maquilas* supported occupational health workshops and formation of health and hygiene committees; women represented workers to lobby companies for compliance with environmental health standards (Izabal Labor Union).

Source: WID TECH 2003a.

MONITORING AND EVALUATION

Table 8.5 gives some ideas for indicators and sources of verification, though clearly modifications are required for each specific program. Further information is provided in Module 16 Monitoring and Evaluation.

Depending on the country or region, it may also be relevant 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.

Table 8.5 Monitoring and Evaluation Indicators for Gender and Agricultural Labor

Indicator	Sources of verification and tools
Number of entrepreneurs or business operators trained in occupational health and safety issues and corporate social responsibility	• Program records
Incidence of occupational health and safety incidents, and measures taken to prevent future incidents	• Administrative records • Review of procedures as against local and national regulations training records
Spread of HIV and AIDS, prostitution, alcoholism, and other problems from in-migrant workers, compared with baseline	• Community health surveillance • Health records • Local authority reports
Differences in wage and employment conditions, if any, between women and other disadvantaged groups, and men for positions of comparable content and responsibility	• Case studies • Labor audits • Project management information system or administrative records
Percentage of time spent daily in household on paid and nonpaid activities, disaggregated by gender and age	• Gender analysis • Time use studies
Age of school leaving, disaggregated by gender	• School records
Percentage of women and men in activist or leadership positions in labor unions	• Union records
Membership of unions or informal labor networks, by gender and compared with number of men and women in workforce	• Stakeholder interviews • Union or labor group records
Number of women and men receiving training on labor standards, social clauses, and employment rights per quarter	• Program records • Training records • Union records
Access of women and men to social security and unemployment insurance	• Government social security records • Stakeholder interviews • Union or other insurance scheme records
Change in number of cases of women and men accessing legal advice regarding labor rights (measured over a set period before the project intervention and compared with a set period after the project intervention)	• Legal authority records • Records of paralegals
Change in knowledge in sample group (the general community, employers, or legal tribunal staff) regarding labor rights and dispute resolution procedures	• Group interviews or focus groups • Interviews, before and after
Change in women's and men's perceptions of levels of sexual harassment experienced before and after program activities	• Focus groups • Stakeholder interviews
Number of women and men from district employed in agricultural enterprises, annually	• Administrative records
Over a set period, an increase of *x* percent in household incomes from agriculture or forest enterprise-based activities among women-headed households and poor households in program areas	• Household surveys • Project management information system Socioeconomic data from statistics office
Changes over *x*-year period of project activities in household nutrition, health, education, vulnerability to violence, and happiness, disaggregated by gender	• Household surveys, before and after • Project management information system • School records
Proportion of household income coming from women and girls versus men and boys	• Household surveys

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

THEMATIC NOTE 1

Gender and Informal Labor

The term *informal economy* is widely used and can refer to such disparate economic activities as shoeshine workers in Calcutta, garbage collectors in Cairo, or street cassava sellers in East Africa. The important characteristics of activities in the informal economy are a mode of organization different from a firm or corporation, unregulated by the state, and excluded from national income accounts (Swaminathan 1991). Chen and others (2005) add that "the workers in these activities are not likely to be protected by labor legislation or organized by formal trade unions." The ILO defines informal work as self-employment in small unregistered businesses and wage employment in unregulated and unprotected jobs (ILO 2002).[1]

Informal workers include those for whom marginal, risky, and low-paid work is better than no work. Such workers do not have any safety net and earn low income or benefits provided by an uncertain or dangerous job. There is also a clear gender dimension to such employment: in general, women are less likely than men to have formal jobs, more likely to work in the informal economy, and, within the informal economy, more likely to work in the lowest-paid and most precarious forms of employment.

The largest number of informal workers is in the developing world, where institutions providing regulation and support to business and labor are the weakest. Although informal work does provide income, it does not necessarily provide a wage sufficient to meet household needs. In the short run such employment provides a means of livelihood to a majority of women workers. However, income gaps between formal and informal workers remain, and so there is a concentration of poverty and related antisocial activities and a degradation of the environment. A poor and deprived women's labor force leads to unhealthy future generations and wide income disparities.

INFORMAL WORK IN AGRICULTURE

The following categories of agricultural labor are considered part of the informal sector: (1) agricultural laborer—spouse or other family members, generally unpaid; (2) wage laborer, for cash or in-kind compensation, on small, family-owned agricultural land; (3) casual wage laborers on registered agribusiness; and (4) seasonal wage laborer on registered agribusiness. In developing countries, and in some industrial countries, almost all agricultural labor could be considered informal.

In general, rural women are the main producers of the world's staple crops—maize, rice, and wheat—which provide up to 90 percent of the rural poor's food intake. Women are involved in sowing, weeding, applying fertilizer and pesticides, and harvesting and threshing of crops. Moreover, in many countries they are responsible for the household's legumes and vegetables and participate in the livestock sector, feeding and milking larger animals and raising poultry and small animals, such as goats, guinea pigs, rabbits, and sheep. Furthermore, rural women provide most postharvest labor, arrange storage, and take care of handling, stocking, processing, and marketing of the produce. Studies have shown that rural women in particular are responsible for half of the world's food production and produce between 60 and 80 percent of the food in most developing countries. However, women generally do not own the land on which they labor, and in many cases they remain unremunerated for their family labor.

As agriculture becomes industrialized with globalization, women remain concentrated in the labor-intensive parts of the agricultural value chains, without contracts and with low wages and limited benefits. In horticultural enterprises one of the growth areas in developing countries, women are concentrated in the "cool chain" distribution and the retail end, both of which are more labor intensive and dominated

by women's employment (Lund and Nicholson 2003). The horticultural sector is discussed in Thematic Note 3. Fisheries and poultry are other agricultural industries in which women represent a significant part of the informal labor force. Women assist spouses in artisanal fishing, net preparation, and fish cleaning and marketing (see Module 13). In the growing fish and shellfish industries, women work in the labor-intensive parts of the value chain, as in the horticultural industry. Women are also involved in the growing poultry processing industry as casual and seasonal laborers and dominate informal food preparation and street vending in many areas, such as sub-Saharan Africa. In Nigeria, for example, all informal cowpea processors and street vendors are women.

CHARACTERISTICS OF LABOR IN THE INFORMAL SECTOR

Informal employment is particularly important in developing countries, where it constitutes one-half to three-quarters of nonagricultural employment, and for the year 2000 the shares specifically are 78 percent in Africa, in the range of 45 to 85 percent in Asia, and 57 percent in Latin America (see table 8.6). Women's collaborative, self-help, and traditional practices and initiatives in the informal sector are a vital economic resource (Chen 2004).

Within the informal economy, women are concentrated in work that is insecure and badly paid, with high risks of poverty. A gender gap in earnings exists across almost all employment categories, including informal wage employment and self-employment. Therefore, a hierarchy of earnings is found in different types of informal employment, ranging from employers and self-employed workers, mainly men, at the top to home-based workers, mainly women, at the bottom. This corresponds to a hierarchy of poverty risk among households, depending on whether they have some formal sources of employment income or are limited to informal sources and depending on what type of employment provides the main source of employment income.

Today in India as in many other developing countries, the informal or the unorganized economy accounts for an overwhelming proportion of the poor and vulnerable population (table 8.7). In 1990–2000, informal women workers in India made up 85 percent of all workers, most of whom were employed in agriculture. The wage gap is significant globally between women and men workers. Women tend to be employed in a wider variety of levels compared to men, so their earnings can be more fragmented.

In the 1960s and 1970s it was widely assumed that, worldwide, development of the modern economy would shrink and absorb informal sector employment. Instead, the global economy has shown a tendency to encourage precarious forms of work. The modern industrial system has not expanded as fully in developing countries as it did at an earlier period in industrial countries. Informal production more typically takes place in family businesses or in single-person units, whereas traditional, more personalized systems of production and exchange still exist in agricultural and artisan production. But in today's global economy, both traditional and semi-industrial relations of production and exchange are being inserted into the global system of production. Also, women are highly involved in traditional and home-based work, which is on the rise because of shrinking overhead costs of formal employment.

Table 8.6 Informal Employment in Developing Countries

Informal employment as a percentage of	Africa (%)	Asia (%)	Latin America and the Caribbean (%)
New jobs	93	n.a.	83
Nonagricultural employment	78	45–85	57
Urban employment	61	40–60	40

Source: Charmes 1998 (updated 2000).

LESSONS LEARNED AND GUIDELINES FOR PRACTITIONERS

Understanding the gendered impact of economic and social policies is critical. The impact of policies on men and women is not the same because men and women are involved in different types of activities, have different ownership of resources, and have different needs in relation to health and education. Recognizing that a single policy prescription for the informal economy would not be able to help improve the conditions of such workers is very important. A good practice should be *participatory and inclusive* and allow for policies to be developed through consultation with informal workers themselves and through consensus of relevant government departments and other appropriate social actors.

Labor laws need to govern informal sector work

A legal framework is an important prerequisite to improve labor conditions; however, it is not sufficient to change

Table 8.7 India: Type of Workers Distributed by Gender

Type of Worker	Gender	Share of Workers, 1999–2000 (%)		
		Rural Sector	Urban Sector	All India
Casual worker	Men	45.98	24.28	37.77
	Women	78.55	38.79	68.54
Self-employed worker	Men	42.01	33.64	38.84
	Women	15.53	21.03	16.92
Employer	Men	1.50	1.45	1.48
	Women	0.49	0.41	0.47
Regular wage/salary earner	Men	10.52	40.63	21.91
	Women	5.42	39.77	14.07
Total	Total men	72.25	82.48	75.81
	Total women	27.75	17.52	24.19
Total	All	100.00	100.00	100.00

Source: Various rounds of National Sample Survey Organisation (NSSO) survey data.

conditions. Thematic Note 2 discusses international, national, and other legal frameworks in detail. Experience in Ghana demonstrates how laws can affect the informal sector. Labor laws there were outdated and fragmented and did not fit with the work conditions guaranteed in Ghana's constitution. However, in 2003 the New Labour Act was negotiated through a tripartite process, involving the government, trade unions, and employers. The act applies to all workers (excluding the armed forces, police, and others). The major objective of the act was to extend important protective elements secured by formal workers to informal workers. It contains special provisions relating to temporary and casual workers that allow them to benefit from the provisions of collective agreements, such as equal pay for work of equal value, access to the same medical provisions available to permanent workers, full minimum wage for all days in attendance, and public holidays (Government of Ghana 2003). Such laws can be examples for other developing countries with growing informal labor forces.

Information technology and skills training for informal workers

In Africa many women entrepreneurs who are traders—ranging from those microtrading in foodstuffs to those doing large-scale import-export trade—are in need of market information and are beginning to use information and communications technologies (ICTs). In Senegal the Grand Coast Fishing Operators Union, an organization of women who market fish and are fish producers, uses ICTs to exchange information on supply and demand between their different locations along the Atlantic coast. The women feel that this tool has improved their competitiveness in the local market. They have a Web site to enable the nearly 7,500 members to promote their produce, monitor export markets, and negotiate prices with overseas buyers before they arrive in Senegal (Hafkin and Taggart 2001).

The Centre for Mass Education in Science, an NGO founded in Bangladesh in 1978, uses a flexible skills training program that leads to immediate income generation. The program is directed at adolescents and youth who cannot afford school and must work. It serves about 20,000 students in 17 rural areas and has a specific gender empowerment program aimed at helping young women fight discrimination and stereotypes and obtain more skilled employment. It identifies and pilots small, untried income-generating activities in villages, including soap and candle making, solar electrification, and computer use (ILO 2002).

ICTs can also be used by informal producers to increase productivity and competitiveness. The National Development Dairy Cooperative in India, whose 10.7 million member-owners produce the major share of processed liquid milk, introduced a computerized system to measure and test the milk that small producers delivered to their local collection centers, reducing perceptions of malfeasance and underpayment. In Samoa, through a computerized system, dairy farmers, many of whom are women, receive immediate payment by using an identification card and save considerable time. In many centers the entire transaction takes no more than 30 seconds from delivery to payment. The system is currently installed at 2,500 milk collection centers, benefiting more than 50,000 dairy farmers (Jhabvala and Kanbur 2002).

Social protection for the informal sector

South Africa has a healthy private pension regime for its population of 40 million. The pension is a vitally important source of household security, plays a role in the promotion of small enterprises, and has a household income-smoothing function: families spend it on "social" items such as children's schooling and transport to health services and use it for agricultural inputs and for small enterprise development. A number of signs of its importance in local and rural economies are visible: major hire purchase firms have changed their collection schedules to coincide with pension days, and clients of a microfinance organization have asked for coordination between pension payment dates and dates of microfinance loan repayments (Chen, Vanek, and Carr 2004).

Although most of the labor force in Costa Rica is not covered by occupationally related social insurance, a voluntary insurance is available for independent workers, own-account workers, and unpaid workers (family workers, housewives, and students). It is aimed at those either who have never contributed to a health or pension plan or who did not do so for long enough to accumulate adequate benefits. To join, families must have a per capita family income that is lower than the basic basket of food products determined by the Statistics Institute. The insurance is funded by the contributions of the state and the individuals who join. This is an interesting example of where a country with a good history of social provision is attempting to adjust in flexible ways to changes in the labor market—in this case the increasing numbers of informal workers (Martínez Franzoni and Mesa-Lago 2003).

Over 90 percent of India's workers are in the informal economy (including agricultural workers), with little, if any, statutory social security (see box 8.4). Most are casual laborers, contract and piece-rate workers, and self-employed, own-account workers. The government of India recently launched the Unorganised Sector Workers' Social Security Scheme on a pilot basis in 50 districts. The scheme provides for three basic protections: old age pension, personal accident insurance, and medical insurance (Lund and Srinivas 2000).

The ILO Work Improvement in Neighbourhood Development (WIND)[2] project in Vietnam is an example for improving health conditions for rural people. ILO WIND is a voluntary, participatory and action-oriented training program that promotes practical improvements in agricultural households through the initiatives of village families. It is currently being adapted to local conditions, translated and pilot-tested in Ethiopia, the Kyrgyz Republic, Moldova, and Senegal.

In Bolivia the Mutual Health Insurance Scheme covers basic health services for its members, half of whom are informal economy workers excluded from other social security systems. The program is run by an NGO and financed through member contributions and grants from development agencies.

In Brazil the Rural Social Insurance Program is a rare Latin American example of state-sponsored social protection for those outside the formal sector. The program is a noncontributory pension and disability program for the rural poor, instituted by the 1988 constitution, which extended basic pension benefits to elderly and disabled people in informal rural employment. It has not only alleviated poverty but has also led to recipients moving from subsistence agriculture to sustainable household production. Ancillary social benefits include increased school enrollment among children in beneficiary households (Lund and Srinivas 2000).

India's welfare funds, many of which are sponsored in the state of Kerala, are also good examples of effective social protection for informal workers. Many funds have been started for informal workers in both agricultural and nonagricultural enterprises, including head-load workers, in 1981; fishermen, 1986; cashew workers, 1988; coir workers and khadi workers,

Box 8.4 India: National Commission for Enterprises in the Unorganized Sector (NCEUS)

One of the major highlights of the Fourth Report of NCEUS (2007) was the official quantification of unorganized or informal workers, defined as those who do not have employment security, work security, and social security. These workers are engaged not only in the unorganized sector but in the organized sector as well.

Examination of the regulatory framework for ensuring minimum conditions of work for unorganized wage workers shows that (1) there is a lack of comprehensive and appropriate regulations in India and (2) even where regulation exists, inadequate and ineffective implementation mechanisms exist. The commission reviewed and analyzed the various perspectives on a comprehensive legislative framework for unorganized wage workers and made appropriate recommendations. The commission established at a very high government practice level the need to make separate policies for informal workers and women workers.

Source: NCEUS 2007.

1989; agricultural workers, 1990; tailors, 1995; beedi workers, 1996; and bamboo workers, 1998. Welfare funds may be contributory or tax based, or a combination thereof. In the tax-based programs, a tax is levied on the production or export of goods. Workers have access through the funds to different types of coverage, some of which may be medical care, education of children, housing expenditures, and other forms of assistance. Coverage varies across the projects; some require cards to access benefits (Subrahmanya 2000).

Approaches have also been developed to address health care for the informal sector. The Indian government has started a health initiative as described in box 8.5. In Chile the Ministry of Health's national program of Occupational Health Surveillance has been underway since 2001 in nine regions of the country, covering basic health, risk prevention, protection of personnel, handling and control of agrochemicals, hazardous waste containers, and expired pesticides. The work is based on a set of standards issued by the ministry that includes suggestions from businesses in the sector. The results from the inspection of 770 farms were delivered in March 2002.

The Occupational Health Commission in Chile has promoted a special program for women seasonal workers that covers five aspects: supervision of occupational health conditions, supervision of pesticide use, health examinations, information on health rights, and training. In the fisheries sector tripartite roundtables have been established in three regions of the country where most women fishery workers are concentrated to reach consensus on measures for improving their working conditions. In this context information workshops have been conducted on occupational health, firms have been inspected, child care centers have been opened, and meetings of women fishery workers have been held.

Box 8.5 India: Health Insurance Plan for Workers in the Unorganized Sector

The government of India has designed a Health Insurance Scheme for the Unorganized Sector Workers to be implemented by the Ministry of Labor and Employment. The eligibility criteria for getting benefits in the program are being planned so that informal workers living below the poverty line would be beneficiaries. Innovatively for India, the beneficiaries will be issued smart cards for the purpose of identification. The in-patient health care insurance benefits would be designed by the respective state governments based on the requirements of the people and geographical area. The regional governments have to incorporate at least the following minimum benefits: coverage of the informal workers and their families (units of five); total sum insured Rs. 30,000 per family per year on a family floater basis; cashless attendance to all covered ailments; hospitalization expenses, taking care of most common illnesses with as few exclusions as possible; all preexisting diseases to be covered; and transportation cost (actual with a maximum limit of Rs. 100 per visit) within an overall limit of Rs. 1,000. The program is not specific to women workers, but the criteria of workers below the poverty line would ensure that many women workers would be covered under this plan.

Source: National Advisory Council, "Draft, The Unorganized Sector Workers' Social Security Bill," Government of India, New Delhi, http://pmindia.nic.in/nac/communication/Draft_Unorganized_Sector_Workers_Bill.pdf.

Networks, organizing, and institutional support

Three networks of informal workers have established good practice standards for organizing and providing support to these workers: Streetnet, Women in Informal Employment: Globalizing and Organizing (WIEGO), and HomeNet. Box 8.6 summarizes relevant information on these groups. These networks have been effective in providing training to informal workers in finance and leadership skills. The organizations disseminate relevant information to members and have had input into legislative processes in various countries. WIEGO has been effective in working with international organizations to raise the profile of workers in the informal sector.

Develop better targeting mechanisms

Women also tend to be concentrated in more vulnerable types of informal employment, in which earnings are very low and unreliable. The average earnings from these types of informal employment are too low, in the absence of other sources of income, to raise households out of poverty (UNIFEM 2005). Identifying households by types is important, between those with primary income from informal work and those with primary income from formal work. In a study conducted for India, poor households were defined by examining household member-level data (National Sample Survey Organisation 1993–94, 1999–2000, 2004–05). The study found that more women belong to poor households with earnings from the informal sector (Sinha and Sangeeta 2000). Targeting such households for specific welfare benefits would benefit poor informal women workers.

Box 8.6 Informal Worker Networks

"At the first international meeting on street vendors, held in Bellagio, Italy in 1995, a group of activists from 11 countries adopted an International Declaration that set forth a plan to promote local and national policies to support and protect the rights of street vendors" (Chen, Vanek, and Carr 2004). For the next several years, they organized regional meetings of street vendors in Asia, Africa, and Latin America and provided support to newly emerging local and national associations of street vendors in several countries. "StreetNet International was formally established in November 2002 and held its first International Congress in March 2004, attended by 58 delegates from 15 organisations, at which an International Council was elected for a three-year term" (Chen, Vanek, and Carr 2004).

WIEGO: Women in Informal Employment: Globalizing and Organizing was established in early 1997 with India's well-known Self-Employed Women's Association (SEWA) as a founding member. Through a consultative planning process, WIEGO identified five priorities for its work: (1) urban policies to promote and protect street vendors, (2) global trade and investment policies to maximize opportunities (and minimize threats) associated with globalization for home-based workers, (3) social protection measures for women informal sector workers, (4) organization of women informal sector workers and their representation in relevant policy-making bodies at all levels, and (5) statistics on the size and contribution of the informal economy. WIEGO now has affiliates in over 25 countries, as well as project partners and activities in more than 12 countries. At the international level WIEGO has been effective at raising the visibility of the informal economy in public policy forums and at working with the ILO and the United Nations (Chen 2004).

HomeNet: Recently the government of India asked representatives of SEWA to participate in the formulation of a national policy on home-based work. HomeNet now has active member organizations in over 25 countries and publishes a newsletter that reaches organizations in more than 130 countries (Chen 2004).

THEMATIC NOTE 2

Labor Rights and Decent Work for Women Agricultural Laborers

Promoting gender equality in legal entitlements relating to agriculture is crucial for two main reasons: first, the empowerment of women is a highly important end in itself, and second, the legal empowerment of women is "essential for the achievement of sustainable development" (Cairo Programme of Action on Population and Development, para. 4.1).

LABOR RIGHTS LEGISLATION: INTERNATIONAL, NATIONAL, AND CUSTOMARY[1]

Agricultural labor rights are mainly determined by labor law, and in particular by two broad groups of norms: those concerning all workers, both men and women (for example, minimum wage, safety and hygiene, and trade union rights), and those specifically concerning women (for example, nondiscrimination, maternity leave, and "protective" legislation).

One of the important challenges for agricultural labor workers has been ensuring the coverage of labor law in the sector. In some countries agricultural workers have been deliberately omitted from the law. For example, in Brazil labor law was differentiated for agricultural and nonagricultural workers, to the considerable disadvantage of agricultural workers, until the dualistic laws were completely repealed in 1988 (FAO 2006). Although in many countries labor laws should extend to agricultural workers, in practice little motivation is present for compliance by many of the agricultural organizations and agribusiness companies. Where there is pressure for compliance, means have frequently been found to circumvent compliance—for example, through third-party contracts. The following sections outline the existing international frameworks, with reference to some national examples.

Relevant international law

The United Nations and ILO have adopted a series of international instruments that provide an international legal framework for the realization of human and labor rights relevant to women agricultural laborers. The right to work without discrimination is recognized in the Universal Declaration on Human Rights (UNDHR, articles 2 and 23), as well as in the International Covenant on Economic, Social and Cultural Rights (ICESCR, articles 2(2) and 6–8) and the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW, article 11). The rights included in these documents are the right to choose freely an occupation, to enjoy a just and favorable remuneration, to work in safe and healthy conditions, and to form and join trade unions. Women have a right to employment opportunities and treatment equal to men, including equal pay for work of equal value. Women also have the right to enjoy special protection during pregnancy and paid maternity leave and the right not to be dismissed on grounds of pregnancy or maternity leave. Among the ILO's conventions, the core labor standards dealing with freedom of association and collective bargaining, nondiscrimination in employment and occupation, and the elimination of forced labor and child labor are recognized internationally as a minimum floor of principles and rights that all countries must respect. In addition, a number of other ILO conventions are relevant for women agricultural laborers. (See table 8.8 for a more complete description of international conventions and covenants.)

Some countries, unfortunately, have not ratified these conventions, and the challenge remains for those that have to implement the adopted legal frameworks through enacting national legislation and appropriate regulations and enforcement mechanisms. Ratified ILO conventions are supervised, and the ILO Committee of Experts plays a role in revealing and removing gender inequalities. These issues are discussed in greater detail below.

Another deficit in the legislative framework is that temporary and casual workers are not explicitly covered by most legislation. Recent changes in approach at the ILO stress

Table 8.8 International Law Governing Rights for Women Agricultural Laborers

International Law	Dates and Articles	Provision
C89 Night Work (Women) Convention (Revised)[a]	1948	Makes provision that women without distinction of age shall not be employed during the night in any public or private industrial undertaking, or in any branch thereof, other than an undertaking in which only members of the same family are employed
ILO Convention 95—Protection of Wages[a]	1949	Makes provision of the partial payment of wages in the form of allowances in kind, considering that such allowances are appropriate for the personal use and benefit of the worker and his family; and the value attributed to such allowances is fair and reasonable
ILO Migration for Employment (Revised) Convention 97	1949	Provides guarantees for lawfully migrant workers, without discrimination on the basis of sex
ILO Equal Remuneration Convention 100	1951	Equal pay for men and women for equal work or work of equal value
ILO Convention 99 Minimum Wage Fixing Machinery (Agriculture) Convention[a]	1951	Creates adequate machinery whereby minimum rates of wages can be fixed for workers employed in the agricultural sector
ILO Maternity Protection (Revised) Convention 183 (103 remains in force in the countries that have ratified it)	1952	Entitles pregnant workers to a maternity leave of at least 12 weeks (with no fewer than 6 weeks after childbirth); allows additional leave in case of late delivery or pregnancy-related illness; prohibits dismissal while on maternity leave; entitles women to medical and cash payments, provided through either compulsory social insurance or public funds; and allows work interruptions for nursing purposes
ILO Discrimination (Employment and Occupation) Convention 111	1958	Prohibits discrimination in both opportunity and treatment and provides for affirmative action
C129 Labour Inspection (Agriculture) Convention[a]	1969	Maintains a system of labor inspection in agriculture
Universal Declaration on Human Rights (UNDHR)	1948, Arts. 2, 23	Right to employment opportunities and treatment equal to men, including equal pay for work of equal value Right to social security in cases of retirement, unemployment sickness, invalidity, and old age
ILO Termination of Employment Convention 158	1982	Prohibits dismissal on grounds of sex, marital status, and absence during maternity leave
Convention on the Elimination of All Forms of Discrimination against Women (CEDAW)	1979, Art. 11	Right to employment opportunities and treatment equal to that of men, including equal pay for work of equal value; principle of nondiscrimination explicitly envisages the elimination of discrimination against women "by any person, organization, or enterprise" Right to social security in cases of retirement, unemployment sickness, invalidity, and old age
International Covenant on Economic, Social and Cultural Rights (ICESCR)	1976, Arts. 2(2), 6–8	Right to employment opportunities and treatment equal to that of men, including equal pay for work of equal value Right to social security in cases of retirement, unemployment sickness, invalidity, and old age
C171 Night Work Convention, 1990[a]	1990	Takes measures to ensure that an alternative to night work is available to women workers, and that the income of the woman worker shall be maintained at a level sufficient for the upkeep of herself and her child in accordance with a suitable standard of living

(*Table continues on the following page*)

Table 8.8 International Law Governing Rights for Women Agricultural Laborers (continued)

International Law	Dates and Articles	Provision
ILO Night Work (Women) (Revised) Convention 89 and Protocol	1948, 1990	Prohibits women's work at night (defined) for some industrial occupations (not for agricultural work; this convention is increasingly seen as discriminatory and not promoted)
ILO Plantations Convention 110 and Protocol	1958, 1982	Protects the labor rights of plantation workers, without discrimination on the basis of sex. *Plantation* is defined, and specific crops are listed, excluding small-scale production Contains guarantees as to recruitment, annual paid leave and weekly rest, compensation for injury, trade unions, and maternity protection

Source: FAO 2006.
[a]Additions from ILO 2006.

that the spirit of the regulations applies to all workers, and particular attention is currently being paid to informal economy workers, implicit in the Decent Work for All declaration. The ILO has developed methods for constructing country profiles based on normative indicators as a tool for progress toward decent work. Country profiles on occupational safety and health are available for many countries (Zarka-Martres and Guichard-Kelly 2005). A recent study of Ethiopia's Poverty Reduction Strategy paper shows that the framework for decent work standards can be applied even to least developed countries (Buckley 2004). Signs are encouraging that some governments, such as Chile and South Africa, are taking steps to incorporate informal workers under labor legislation. Chile established the Program for Women Seasonal Workers in Export Agriculture.[2]

National legal systems, and women's legal status within them, differ greatly from country to country. However, similarities are appearing more and more often across countries. Most constitutions prohibit discrimination based on gender, although the principle might be qualified in some cases to exempt family and customary law. For example, the Kenyan constitution exempts family law and customary law, areas of law that are crucial in shaping women's rights in agriculture. Some constitutions contain an affirmative action clause, and attempts to promote gender equality may be embodied in legislation. In South Africa the Promotion of Equality and Prevention of Unfair Discrimination Act 2000 prohibits unfair discrimination on grounds of gender and sex in both public and private life and envisages affirmative action.

Legislation other than that which directly addresses gender equality can have an impact on women's labor conditions as well. In 1973 the military government of Chile restricted collective bargaining to firm-level unions. Temporary workers are excluded from these unions; as a result, women who are largely employed in these positions have no access to union organizational skills or bargaining power (Barrientos and Barrientos 2002).

Moreover, some national legal systems include plans of action and/or institutional machinery to promote gender equality and the advancement of women. In many cases these instruments were adopted in the aftermath of the Beijing Declaration and Platform for Action. These plans of action have been useful in promoting an institutional framework to negotiate public-private partnerships and support more localized measures to ensure gender equality. In Brazil Councils for Women's Conditions have been established. In Mexico several states have established commissions for the advancement of women. South Africa formed the Commission for Gender Equality to monitor and evaluate laws and make recommendations and established the Equality Review Committee through the Promotion of Equality and Prevention of Unfair Discrimination Act 2000 to monitor the operation of that act.

Customary law

In many developing countries, national laws and policies are little implemented in rural areas. This limited implementation results, on one hand, from a lack of institutional capacity for enforcement, entrenched sociocultural practices, a lack of financial resources, inadequate knowledge of legal rights, and a lack of perceived legitimacy of official rules and

institutions. On the other hand, customary legal systems are commonly applied in much of Africa, in many parts of Asia, and by indigenous communities in Latin America. Customary law is a body of rules basing its legitimacy on "tradition" (FAO 2006). Great diversity is found in customary law resulting from a range of cultural, ecological, social, economic, and political factors. These traditional legal systems may contain rules disadvantageous to women in areas such as income control or asset disposition. The practice of signing wives' wages over to husbands has been largely removed, but other practices may persist. In Latin America women often must ask for their husband's authorization before undertaking a job and quit if their husband tells them to (FAO 1994). On the other hand, some customary law may be more advantageous to women and provide them access to specific rights not protected under civil laws. Customary legal systems evolve over time and can be changed.

Beyond labor law, other norms such as family law and case law are also relevant. For instance, in some countries, family law allows the husband to demand consent for his wife's signature on an employment contract or allows him to terminate the contract (FAO 2006). Women may also be affected by norms founded on religious principles or interpretations. These norms may be applied in countries because they are recognized in the legislation or followed in practice. These norms frequently govern matters such as family relations and inheritance and may affect the existence or exercise of women's rights. However, as with customary law, these norms vary significantly from locality to locality and country to country. These norms are also flexible and change over time.

KEY GENDER ISSUES IN LABOR RIGHTS OF AGRICULTURAL WORKERS

The legal and extralegal frameworks providing social protection and promoting gender equity and decent work conditions for women are proliferating and improving. More countries are enacting legislation, and more forces are creating a demand for better legislative frameworks. However, some issues remain and require continued attention.

Women's access to employment may be restricted by family law norms requiring authorization of the husband. Some of these norms have been challenged through courts and at the local level, but many are still applied in practice. The legal case *Maria Eugenia Morales de Sierra v. Guatemala* challenged the civil code in Guatemala that allowed a husband to oppose the employment of his wife. The case, initiated in 1995, was raised to the Inter-American Commission in 2001 before the state was called to fully comply with international human rights obligations (FAO 2006).

Labor law does not prohibit sex discrimination in all countries. For example, neither Fiji nor Kenya has explicit provisions against sex discrimination (FAO 2006). Frequently where there is a provision, no sanction is recommended. Affirmative action measures are envisaged only in some cases.

Only some countries have adopted legislation addressing sexual harassment in the workplace. Field studies document that this is a major problem affecting women working in plantations and in factories, as in many other workplaces. Discrimination in the workplace or in employment based on sexual orientation is also rarely addressed in developing countries. The prevalence of HIV and AIDS has important labor market implications, some of which may be gender specific. With the growth of HIV prevalence in many countries, particularly in sub-Saharan Africa, the average age of the active labor force is declining, and girls as well as boys are forced into working earlier. Workplace discrimination in the face of HIV and AIDS is a major challenge for labor law (Fenwick, Kalula, and Landau 2007). Southern African Development Community has developed a Code on HIV and AIDS and Employment, which was introduced in 1992. The code emphasizes human rights principles regarding nondiscrimination and confidentiality and provides a series of specific recommendations about how to manage HIV and AIDS in the workplace. In 2001 the ILO developed the Code of Practice on HIV and AIDS and The World of Work.

Provisions exist for maternity protection in many countries. However, the requirements for application of the protection may be very demanding and de jure or de facto exclude women agricultural workers (who are concentrated in seasonal and temporary labor force). Considerable variation is also found in the provisions of maternity leave. In cases where maternity leave is paid by the employer, the cost of women's labor is higher, creating an economic disincentive for their employment.

Most laws and standards apply only to permanent laborers in agricultural and other sectors. Seasonal and temporary laborers, many of them women, are omitted and suffer the worst of labor conditions. Large-scale migration also poses a challenge to the protective capacity of labor law in many countries (Fenwick, Kalula, and Landau 2007). Documented migrants, those who enter a country legally, likely work under favorable conditions; undocumented migrants, the majority, are vulnerable to exploitation and abuse and do not have recourse to the protection afforded by labor laws. The informalization or casualization of work has

increased, resulting in a reduction in the number of permanent full-time employees. In Namibia casualization is most predominant in the construction industry, followed by the fishing, retail, and manufacturing sectors (Klerck 2002). Although casual labor is not new in agriculture, as the agricultural sector matures, the potential for decent work, which increases with the development of most sectors, diminishes with an increase in informal contracts.

Workplace safety and exposure to chemicals are two of the most important areas that require stronger legal protections for all workers within the sector. Although strong international standards have been set, most of which are supported at the national level, these are generally not applied in the agricultural sector. Regulations in these areas are applicable to all persons regardless of age or gender, but recent concern over the potential for increasing birth defects has an added gender dimension to exposure to toxins (see Thematic Note 3 for a more in-depth discussion).

Not all laws support the rights of women to decent work. For example, women's access to some agricultural work may be hindered by "protective" legislation prohibiting women's night work in the agricultural sector. Prohibitions may reduce women's choices while attempting to protect them. Cargill's Sun Valley poultry factory in Thailand has chosen to provide all workers with transport, which enables both men and women to work night shifts and overtime and reduces the risk of nighttime travel. Although this is clearly in the interest of the company, it also provides those employees who desire to work more with safe transit (see Innovative Activity Profile 1). In Yemen laws that protect women from working late hours or require employers to provide child care centers if they employ a certain number of women make it more costly for the private sector to hire women rather than men (World Bank 2005). The ILO Committee of Experts has raised this point with the government of Yemen.

LESSONS LEARNED AND GUIDELINES FOR PRACTITIONERS

Many actors are involved in the process of ensuring gender equity and decent work for men and women in agricultural labor markets. Government plays an important role by enacting laws, extending information and training on laws, and establishing structures for enforcing the laws. National and international NGOs can provide information, train NGOs, and act as watchdogs. Private sector entities such as buyers can assist by developing codes and ensuring that they are applied and that compliance is monitored. Trade unions can negotiate terms of codes and advocate for compliance to existing codes within the country and with firms.

Supporting legal reform

In some countries information about and analysis of labor laws are limited. A recent study of labor laws in southern Africa noted that the very limited information made an evaluation of the coverage difficult (Fenwick, Kalula, and Landau 2007). The lack of information is particularly relevant to sub-Saharan Africa.

Legal reform can be promoted by international organizations, particularly with regard to international conventions and covenants. Dialogue with national leaders on the economic benefits of gender equity in labor markets should be initiated.

In Uganda a Gender Coalition has been created to support the implementation of the International Finance Corporation and World Bank–supported Gender and Growth Assessment (GGA) recommendations. Following lobbying from the coalition, GGA recommendations have been incorporated into four labor reform bills covering employment, occupational safety and health, labor disputes, and labor unions, which were passed in 2006. The Ministry of Finance, acting on GGA recommendations, commissioned new legal drafts of the Companies Act, the Chattels Transfer Act, and other bills (Cutura 2006). The GGA is a tool that can be used to bring information on gender and labor to government, the private sector, and labor organizations. By documenting links to economic growth, the GGA becomes a persuasive tool for change.

Recently legislators in various countries have paid greater attention to gender aspects of labor relevant to agriculture. In South Africa, women farm workers until recently had very little protection. In 1993 legislation on minimum labor standards was extended to agricultural workers. Moreover, the Employment Equity Act of 1998 prohibits direct and indirect unfair discrimination in access and treatment on grounds of gender, sex, pregnancy, marital status, and family responsibility. Where discrimination is alleged, the burden of proof is placed on the employer. The act also provides for affirmative action, including preferential treatment and numerical goals, in establishments employing 50 or more workers (including agricultural employers) (FAO 2006).

Some countries have tackled specific issues that typically concern women workers, especially on plantations. Brazilian Laws 9029 (enacted in 1995) and 9799 (enacted in 1999) prohibit employers from requiring sterilization or

pregnancy certifications or examinations as a condition for employment, and bar employers from conducting intimate examinations of employees. Several countries have adopted specific norms on sexual harassment in the workplace (such as the 1995 Anti-Sexual Harassment Act of the Philippines) that apply equally to farms and plantations. (FAO 2006).

Developments have also come through judicial decisions. In India guidelines on sexual harassment in the workplace were developed by the Supreme Court in *Vishaka v. Rajasthan and Others* (AIR 1997 SC 3011), building on the Indian constitution and the CEDAW. Lawsuits have also been brought by women agricultural workers, although the overall number of these cases remains low. In South Africa case law has been developed under the Extension of Security of Tenure Act of 1997, which protects from eviction persons occupying land with the consent of the land owner, including farm workers. A particularly important case is *Conradie v. Hanekom and Another* (1999 (4) SA 491 [LCC]), in which the South African Land Claims Court set aside an eviction order against two farm workers, husband and wife, employed on the same farm. Having dismissed the husband, the landowner had sought to evict both. The court held that the wife had a right as an employee not to be evicted under the 1997 act, and her eviction order was set aside. The court also held that the act guaranteed to her the right to family life, so that her husband (who after his dismissal was no longer a protected "occupier") had a right to reside on the land as a family member (FAO 2006).

In addition to its traditional strategies for adopting regulations and supervision and providing information about rights, the government of Chile has adopted a program to improve access and working conditions for women, known as Good Labour Practices for Equal Opportunity between Men and Women. This has involved developing a strategy for ongoing dialogue with the private sector. The initiative includes activities for sensitizing the business sector; recognizing firms that adopt good labor practices to promote equal opportunity between men and women; establishing standards for good labor practices; and conducting studies and producing practical guidance for implementing these policies, the contents of which relate to measures inherent to the work process, the reconciliation of occupational and family life, economic measures, and health coverage. Activities include the preparation of model codes of good labor practices in two of the country's major firms; the sponsoring of seminars and joint work with the Foreign Investment Committee, the Chile-United States Chamber of Commerce, and Acción Empresarial, a body that advises its member companies on socially responsible business policies (Government of Chile 2004).

Raising awareness of conditions and rights

Increasing the availability of resources in communities on legal rights and documenting labor conditions that violate existing standards are important avenues for combating gender inequities in the sector. In Latin America examples exist of advocacy and public awareness to increase the awareness of women's issues within the community and nationally. An annual campaign, "Work, yes—but with dignity!" is run by the Maria Elena Cuadro Women's Movement in Nicaragua. The movement also conducted a representative survey of 20 percent of women in the factories to identify actual labor conditions. The results have been effective when used in dialogues with business and government (WID TECH 2003).

Increasing the monitoring of labor conditions can also contribute to an increased awareness of conditions and establish the conditions for change. COVERCO (Commission for the Verification of Corporate Codes of Conduct), an NGO based in Guatemala, has pioneered the effort in advancing independent monitoring of working conditions in Guatemala's garment factories and agricultural export industries. COVERCO monitors conditions and evaluates compliance with standards established in codes of conduct and national and international law. COVERCO has also built a coalition of NGOs engaged in monitoring and assists in the capacity building of these NGOs. A study of conditions of women working in coffee plantations, funded by USAID, was relevant in developing Starbuck's code of conduct for coffee purchases. The government of Chile has engaged private sector companies in several activities to promote the development and adoption of good codes of labor practices. Thematic Note 3 discusses codes of conduct.

Increasing access to legal advice

Increasing women's access to reliable, affordable legal advice is another means of improving their capacity to achieve legislative support. The Beijing Platform for Action called on governments "to ensure access to free or low-cost legal services including legal literacy, especially designed to reach women living in poverty" (para. 61[a]). Legal support might be as simple as locating documentation of marriage in the case of the death of a spouse or facilitating access to identification cards, as was determined in Brazil (in the case of land transfer, but this could apply to pension access) (Guivant 2001). A movement of legal and paralegal NGOs is

integral to improving access to the legal system through training and awareness raising, counseling and legal assistance, individual and public litigation, and representation and advocacy (FAO 2006).

Promoting role of women in institutions that govern women's labor rights

Women need to be involved in areas of government that have control over labor law. Although ministries devoted to women's and children's affairs have been notably marginalized and ineffective in many countries, examples may be identified of change when specific issues are addressed (such as Chile).

Where unions exist, a need is present to promote gender awareness. CEMUJER, an NGO in El Salvador, used a small USAID-funded grant to help women in unions develop leadership skills, assist women already in leadership positions, train women union members in legal rights, and provide legal advice for women (WID TECH 2003).

Where there are no unions, or existing unions do not meet women's needs, other organizations have been instrumental in raising specific issues for action. Women's organizations in Central America have implemented education and capacity-building programs for women working in *maquilas* (factories) (see WID TECH 2003 for examples). The National Fishworkers Forum in southern India has been effective in raising the conditions of migrant women workers in fish-processing plants (Nayak 2005). Both international and national NGOs have become instrumental in raising awareness of gender inequalities and workplace conditions in developing countries. For effective change, development of civil society organizations within relevant countries is a prerequisite.

THEMATIC NOTE 3

Gender and Employment in Labor-Intensive Export Agriculture

Agricultural exports are significant to foreign exchange earnings, employment, and government revenues of the poorest countries. Agriculture accounts for 61 percent of employment and 14 percent of gross domestic product (GDP) in developing countries and an even higher proportion in the least developed countries (85 percent of employment and 36 percent of GDP). Trade in traditional agricultural commodities (such as bananas, coffee, grains, and tea), on which developing countries largely depend, has been beset by adverse world market conditions, restrictive macroeconomic policies, excessive market controls, and political instability. The decline of revenues from these classic export commodities, coupled with trade liberalization and structural adjustment reforms, has prompted many countries to diversify their export portfolios into specialty crops and higher-value agriculture products (floriculture, high-protein meats, horticulture, and processed food products). By 2000 high-value agricultural exports were estimated to account for approximately two-thirds of total agricultural trade (Dolan and Sorby 2003).

The wage labor force in agriculture is highly concentrated in the export sector: large labor forces still exist on plantations growing traditional commodity exports, and in recent years rising numbers of laborers are involved in the production or agroprocessing of high-value commodities. Participation in commodity chains for high-value commodities provides considerable opportunities for growth and poverty reduction. Yet labor conditions under the new export markets echo the frequently degrading conditions found on plantations.

This Thematic Note addresses the labor issues of gender and identifies some of the main features and conditions of work in traditional plantation production and in high-value agriculture export production. Women face similar issues of discrimination in both these areas of employment. Participating in high-value export industries can bring positive consequences for gender equality, but specific challenges such as occupational segregation and environmental health must be addressed to achieve positive outcomes.[1] The Thematic Note also includes a presentation of governance structures that affect export markets including corporate social responsibility, fair trade, and codes of conduct.

TRADITIONAL EXPORT COMMODITIES: PLANTATION AGRICULTURE

Conditions for laborers on plantations remain dire in spite of years of publicity and awareness. Permanent employees have better conditions and wage rates, but the increasingly high proportion of temporary and seasonal labor implies that most laborers are working under poor conditions. As has been highlighted throughout the discussions of the agricultural labor force, women are concentrated in these less stable employment positions and thus suffer the worst conditions.

The concern about child labor has recently brought work conditions on plantations back under scrutiny. Studies on plantation banana production in Ecuador and sugarcane in the Philippines, among others, have highlighted the scale of child labor and the hazards these children face at work, including heat, heavy work, long hours, wounds, and risk of poisoning from pesticides (de Boer 2005; Pier 2002). Gender inequities also persist. Women face violence and sexual harassment. Box 8.7 provides an overview of problems faced by women working on plantations.

Although initiatives by governments, private companies, and NGOs have addressed labor conditions, one of the most serious problems facing companies and their labor forces on these large-scale agricultural plantations is the decline in prices over recent years as demand has stabilized and production has increased. Coffee is one of the most important examples: prices have declined because of new technology that uses lower-quality beans and increased coffee production

Box 8.7 Gender Issues on Plantations

- Discrimination in access to employment, with women concentrated in subordinate and lower-paid jobs in the fields and men in higher positions, particularly as supervisors and headmen
- Discrimination in access to training and vocational courses
- Discrimination in allocation of benefits, such as housing
- Discrimination within trade unions (regarding participation and access to leadership positions)
- Sexual harassment
- Wage differentials, with higher wages for positions typically held by men (such as sugarcane cutters) than for women's positions (such as weeders)

Source: Mbilinyi and Semkafu 1995.

with the entry of Vietnam and growth from crops in Brazil. Coffee prices reached their lowest level in 30 years in 2001. The declining prices limit producers' capacity to improve workers' conditions and cause workers to lose what little negotiating power they had. The world market conditions for tea are similar, although not as drastic as those for coffee.

One of the strategies used to raise the prices of the primary product has been to focus on specialty markets; however, these products count for only a small part of the market. For example, currently the specialty coffee sector accounts for only about 6 to 8 percent of production (World Bank 2007). No studies exist that show whether or not companies entering into specialty production have passed on any of the price premium to workers. See Module 5 for a further discussion of marketing of traditional export crops.

HIGH-VALUE AGRICULTURAL COMMODITIES: AGROPROCESSING INDUSTRIES

For many developing countries, declining revenues from traditional commodities and the opportunities of a globalized market have led to the adoption of high-value agricultural exports. Over the last decade, these exports have generated significant amounts of foreign exchange, contributed to the upgrade of agricultural production skills, and created substantial opportunities for waged employment and self-employment. Women in particular have been able to profit from these new labor market opportunities both as smallholders and as wage employees. However, although high-value agriculture can be an engine of growth for developing countries, and the employment it generates is empowering for women, it is characterized by several shortcomings (Dolan and Sorby 2003).

GOVERNANCE STRUCTURES: CORPORATE SOCIAL RESPONSIBILITY, FAIR TRADE, AND CODE OF CONDUCT

The following sections describe corporate social responsibility, fair trade organizations, codes of conduct, and their gender dimensions.

Corporate social responsibility

The concept of corporate social responsibility is still evolving. However, CSR increasingly refers to the ethical treatment of stakeholders by corporations (Hopkins 2004). CSR covers actions in areas as broad as the environment, health, human rights, governance, corruption, and labor practices. Because CSR has largely grown "up" from stakeholder concerns into corporate actions, the number of international, multinational, and national principles, charters, and codes has proliferated.

CSR initiatives have led to the development of several sets of standards on which companies base codes of conduct (many of these are listed in table 8.9). Some codes have received attention in the development field because of their focus on agricultural producers. The Ethical Trading Initiative, established in the United Kingdom in 1998 as a tripartite forum of NGOs, companies, and trade unions, is one of the largest initiatives. The Fair-Trade Labelling Organisations (FLO) International was established in 1997 as an umbrella organization of 17 national fair trade labeling initiatives.

Fair trade organizations

Fair trade initiatives try to provide better market access and better trading conditions to small-scale farmers. This includes a price premium for producers to be invested in social and environmental improvements and sometimes improved conditions for workers. Fair trade products represent only a small percentage of world agricultural trade; however, in the last 10 years fair trade has emerged as an increasingly popular tool to create markets. In 2005 alone an estimated $100 million was provided to producers and their communities above the conventional price for these goods (Farnworth and Goodman 2006). The yearly growth of fair

Table 8.9 Principles, Charters, and Codes of Practice for Fair Trade, Ethical Trade, and Corporate Social Responsibility Efforts

Initiatives	Date	Main Issues
Governmental- or intergovernmental-led:		
Ethical Trading Initiative (U.K. government and NGO)	London, 1998	Labor practices in trade
European Union Principles	Brussels, 2001; revised 2002	Multistakeholder
International Labour Organization Tripartite Declaration on Transnational Corporations	Geneva, 1977; revised 2000	Employment
Organisation for Economic Co-operation and Development Guidelines	Paris, 1976; revised 1977	Employment, triple bottom line (financial, social, and environmental indicators) indicators
U.S. Model Business Practices	Washington, DC, 1996	Community, corruption, environment, health and safety, labor, law
UN Global Compact	New York, 2000	Human rights, labor, environment
NGO-led:		
Account Ability 1000	London, 1999	Social and ethical "assurance"
Amnesty International HR Guidelines	London, 1998	Human rights and security
Fairtrade Labelling Initiative	FLO established 1997	Market access and trading conditions for small farmers
Global Reporting Initiative	Boston, 1997; revised 2002	Multistakeholder, triple bottom line indicators
ICFTU Code of Practice	Brussels/Geneva, 1997	Labor and trade union issues
SA8000	London, 1998; revised 2002	CSR and labor
Company-led:		
Caux Principles	Minnesota, 1994	Multistakeholder
Fair Labor Association (FLA), United States	California, 1998	Labor practices
Global Sullivan Principles	United States, 1999	External stakeholders
ICC Business Charter for Sustainable Development	Brussels, 1991	Environment, health, and safety
World Economic Forum	Davos/Geneva, 2002	Corporate governance
Trade-union-led:		
ICFTU/ITS Basic Code of Labor Practice	ICFTU/ITS Working Party on MNCs, December 1997	Labor practices

Source: Based on Hopkins 2004.

trade volume has been around 20 percent since 2000, although the products represent only a small percentage of world agricultural trade. The biggest volumes have been reached for bananas and coffee.

The FINE criteria, presented in box 8.8, represent the goals of the fair trade coordination platform. FINE is the informal coordination platform composed of the following representative bodies: FLO (Fair-Trade Labelling Organisations International), IFAT (International Federation for Alternative Trade), NEWS (Network of European World Shops), and EFTA (European Fair-Trade Association) (Develtere and Pollet 2005).

Note that product-specific fair trade standards exist for bananas, cane sugar, coffee, cocoa, cut flowers, fresh fruit, fruit juices, honey, rice, sports balls, tea, and wine. In general, gender issues have been underrepresented in the codes and agreements.

Codes of conduct, gender, and labor conditions

Codes of conduct covering employment conditions of southern producers exporting to European markets mushroomed throughout the 1990s. Over 200 codes related to worker welfare specifically were identified at the beginning

Box 8.8 The FINE Criteria

The key criteria:

- For workers, fair wages, good housing, health and safety standards, and the right to join trade unions
- No child or forced labor
- Programs for environmental sustainability
- For small farmers' cooperatives, a democratic structure that allows members to participate in the cooperative's decision-making process.

Moreover, the trading terms must include the following:

- A price that covers the cost of production
- A social premium to improve the living and working conditions
- Partial advance payment to prevent small producer organizations from falling into debt
- Contracts that allow long-term production planning.

Source: Develtere and Pollet 2005.

of this decade, with over 20 codes applying to agriculture in developing countries (Blowfield 2000). Many companies adopt codes to reduce the risk of negative exposure related to poor employment practices within their supply chain. The large number of codes implies great variability in content: some codes integrate international conventions relating to gender discrimination and inequality, yet other codes make no mention of gender at all. The variability extends to the auditing of codes (Barrientos, Dolan, and Tallontire 2001).

Barrientos, Dolan, and Tallontire (2001) developed a three-level framework for analyzing the gender sensitivity of codes in labor practices. The levels range from those that both men and women confront in employment (for example, collective bargaining, contracts, discrimination, freedom of association, safety and hygiene, wages, and work hours) to broader socioeconomic issues that affect women's ability to access employment types (for example, domestic responsibility, education, gender relations, and social norms and practice). An evaluation of two relevant codes, SA 8000 and ETI, within this framework reveals that although both effectively address issues at Level A, neither is strong in extending coverage to Levels B and C. Neither covers reproductive rights, maternity or paternity leave, or protection for pregnant women or child care.

KEY GENDER ISSUES

The following sections discuss the key gender issues in export agriculture industries.

The informalization of labor in high-value agricultural industries

Labor relationships in these new industries vary considerably. Global poultry production generally employs a permanent labor force. In the cut flower industry, the proportion of the permanent labor force can be as low as 35 percent, although companies in Kenya and Zimbabwe have up to 50 percent permanent workers. However, these examples are exceptional, and great variability exists across companies and countries. In the Colombian cut flower industry, only 16 percent of the workforce is temporary, and workers are generally hired for the full year. But in Ecuador, the temporary labor force is hired on a short-term basis, and contracts are often terminated prior to the date of conversion to permanent status (Dolan and Sorby 2003).

Subcontracting is a dominant feature of the labor force in high-value export crop production. In Colombia companies contract with former supervisors to provide labor for piecework. These laborers are hired for periods as short as two weeks or as long as several months. The lack of a direct relationship between company and employee makes the employee more vulnerable. Across many of the countries recently studied, women are concentrated in the temporary, casual, and seasonal labor forces. In the Chilean fruit industry, women represent 50 percent of temporary laborers but only 5 percent of permanent laborers.

Occupational segregation and wage discrimination

Occupational segregation in plantation agriculture is standard practice. Many of the tasks are divided according to physical strength, but another division is related to the use of equipment. Men are usually accorded jobs that involve training and use of light or heavy equipment. This segregation leaves women in lower-paying positions and provides them with limited upward mobility. Women form the majority of the tea pickers on plantations in Sri Lanka and rarely participate in other occupations. Prior to 1978 women's wages for picking were lower, but now a uniform wage is applied. But women work longer hours for the same wage, and tradition in the

areas studied showed that wages are still frequently turned over to the husband (Wickramasinghe and Cameron n.d.).

Wage disparity results as well from discriminatory undervaluation of the work in occupations in which women are concentrated. Occupational segregation is prevalent in horticultural industries as well, and women are frequently placed in work categories based on perceptions of "women's" attributes and tasks related to domestic work. For example, a strong gender division of labor prevails in production of high-value crops on smallholder farms such as vanilla producers (Kasente and others 2000), the cut flower industry, and poultry production. Women are responsible for the highly labor-intensive tasks of harvesting, planting, processing, and weeding, while men perform activities related to feed production, fumigation, irrigation, precultivation, and slaughter houses. The occupational sectors in which women are concentrated are usually accompanied by the poorest benefit packages and lowest wages, as illustrated in table 8.10, which shows the gap for wage earners in the Kenyan horticulture industry. The wage differences largely reflect job segregation as described earlier. Wage gaps for similar jobs are difficult to calculate with such extreme occupational segregation.

Costs versus benefits

The employment versus empowerment debate is difficult to resolve in the context of high-value agriculture industries. On the one hand, employment can (and does) engender some tangible gains for women, who often obtain access to an independent income stream, increased autonomy, and new social networks. Data also show that certain employment benefits, such as education, health care, and training, bolster women's "human capital" and further women's empowerment. In contrast to their informal income-generating activities, which have long been overlooked, women's participation in waged work also makes them more visible in the economy.

However, women also experience clear costs by working in agroprocessing industries. One set of costs arises from the often poor working conditions and flexible and insecure employment. A second set has to do with the social and economic consequences of the increase in women's time burdens, an increase that affects the health and well-being of women and their families. The extent of these implications varies considerably across industries and countries, but they do signal cause for concern. Nevertheless jobs in these industries provide many women with the best chance they have for improving their lives in a context of limited to nonexistent alternatives.

Occupational health and safety and sexual harassment

One of the most serious problems on large plantations is the lack of adequate protective measures and training related to the use of fertilizers, insecticides, and pesticides. Aerial spraying of bananas in Ecuador exposes all workers, but in activities in which either men or women are concentrated, one gender may be more affected than the other. Crowded conditions in housing, poor sanitation, and drinking water in fields or factories are all cited in studies of plantations.

In the flower, poultry, and vegetable industries, women are most vulnerable to repetitive stress and joint injuries. Rotation of jobs can reduce these injuries, and the poultry industry has introduced this practice (Dolan and Sorby 2003).

Exposure to chemicals during storage, mixing, and spraying is far too common in these industries. Problems arise in particular from the use of pesticides and other chemicals in confined spaces, such as greenhouses and packinghouses, where exposure tends to be high and the workforce is largely women. Effects of chemical exposure can include skin irritation, respiratory problems, nausea, and dizziness. The longer-term effects can be more serious. Some health concerns are specific to women: damage of reproductive organs and damage to unborn children (malformed fetuses, higher instances of miscarriage). Although most countries have established occupational health standards, compliance is variable in the horticulture industries. Some of the harmful exposure is due to inadequate training.

Table 8.10 Kenya: Wages in Horticulture by Skill Level and Gender

	Packinghouse		Farm		All	
Type of Labor	**Men**	**Women**	**Men**	**Women**	**Men**	**Women**
Unskilled	21.00	17.80	12.80	12.60	15.00	14.70
Semiskilled	22.00	23.30	17.00	14.10	17.40	19.40
Skilled	49.00	n.a.	15.30	n.a.	23.80	n.a.

Source: Dolan and Sorby 2003.
Note: Figures in Kenyan shillings; on April 16, 2001, 10 Kenyan shillings equaled $0.12912.

In Uganda evidence suggests that spraying is conducted when workers are unprotected in greenhouses (Dikjstra 2001 in Dolan and Sorby 2003).

Child labor is still evident in many traditional export crop production systems. Children as young as 11 years old work on banana plantations in Ecuador, sugarcane plantations in the Philippines, and tea plantations in Sri Lanka (de Boer 2005; Pier 2002).

Sexual harassment on plantations is widespread. Women are frequently concentrated in menial tasks, such as tea leaf picking, with men supervisors who abuse their positions by requesting sexual favors in exchange for job security, bonuses, or lighter workloads. Studies in many countries have found evidence of sexual harassment in many factories and fields (Dolan and Sorby 2003). Its prevalence is mediated by local gender norms.

GOOD PRACTICES AND LESSONS LEARNED

Several methods may extend social protection to informal workers. A social responsibility matrix outlines the roles of various stakeholders in a global value chain. The social responsibility matrix for the horticulture sectors in Chile and South Africa provided in table 8.11, which was developed by Barrientos and Barrientos (2002), outlines international and state actors, market actors, community actors, and household resources.

International and state actors, such as the ILO and national labor laws, set the legislative framework (details are discussed in Thematic Note 2). For example, Chile has developed a strategy for mainstreaming the gender perspective in the country's major agricultural business organizations through the Public-Private Committee on Women Seasonal Farm Workers.

Social protection from market actors generally protects only workers in the formal market. In Chile social protection is government mandated but privately provided. In both Chile and South Africa low coverage is provided for temporary workers in agriculture from these sources. However, roles are in place for both corporations and unions at this level. One of the significant differences between traditional plantation export crop production and the relatively newer industries focused on high-value export crops is the degree of unionization. Workers on large-scale plantations for crops such as tea and coffee are more likely to have union representation than those companies in cut flowers or vegetables. Several explanations may be given for this imbalance, including the differing ages of the industries, the deliberate sabotage of unions by multinational and national companies, and the predominance of casual, temporary, and seasonal labor in the industry, which is a result of both the nature of the products and management decisions.

A more recent approach can be found through private sector codes of conduct. Initiatives in developed countries—for example, the Fair Trade Initiative and the Equitable Trading Initiative—have raised premiums on prices of commodities for companies that are willing and able to comply with the prescribed standards. Pressure from civil groups and NGOs in industrial countries on buyers has increased the demand for these products.

Codes of conduct have been particularly important in the high-value crops area. The initiative on the part of the

Table 8.11 Chile and South Africa: Social Responsibility Matrix for Informal Workers in Horticulture

Domain	Domestic	International
State	Labor inspectorate Ministries National government	Economic Commission of Latin America and the Caribbean, European Union, International Labour Organization, International Social Security Association, World Health Organization, World Bank
Market	Employers/producers Exporters Labor contractors Private insurance and welfare providers (pensions, health, etc.) Trade unions	Ethical trade initiative Importers Multinational enterprises Supermarkets
Community	Church organizations Community organizations Domestic NGOs Political parties Trade unions	Consumer organizations International NGOs
Household	Extended household	Migrant relatives

Source: Barrientos and Barrientos 2002.

Box 8.9 Uganda Code of Practice

The Uganda Code of Practice for the Horticulture Sector, finalized in 2002, sets down strict guidelines for farmers and managers in occupational safety, worker welfare, discrimination, and equal pay. The code puts the industry ahead of other agricultural sectors in labor standards, while bringing Uganda in line with other flower exporters in the region. An ILO report released in 2000 found that flower farms provided workers accommodation, free tea and lunch, medical care, adequate leave, prompt payment of salaries and salary advances, and the right to leave for the day at 5 P.M.

A study conducted in 2006 by the Canadian International Development Research Centre found that most women employees are hired as permanent workers with full benefits. The report claimed that all workers have contracts and get 60 days of paid maternity leave. They also have a doctor and dispensary where drugs are distributed at very low cost to workers and their families with money raised for a medical fund for operations or for family members who suffer complications. The study also indicated that a fully equipped lab for HIV and malaria testing was being established for floricultural workers.

Source: Asea and Kaija 2000.

horticulture industry in Uganda to provide consistent labor practices through a code of practice is described in box 8.9.

A recent multicountry review of codes of conduct by the Ethical Trading Initiative concluded that the overall impact of these codes was positive, particularly on health and safety, but the effect on important gender issues such as discrimination was minimal (Institute of Development Studies 2007). The greatest concern was that few codes cover temporary workers, and therefore the codes exclude a large proportion of women in many industries (see box 8.10). Codes of conduct are frequently less relevant to informal employment conditions, and they are weak or negligible in their coverage of issues such as equal pay and sex discrimination. Few codes extend to employment-related issues such as reproductive rights, child care provision, or sexual harassment. Reasons for the deficiencies in the application of codes center on the inability of the buyers to enforce principles. Many companies operate in complex value chains, in which suppliers deal with multiple buyers and agents, so any one buyer has limited influence. Communication and monitoring weaknesses also limit the application of the codes of conduct.

Another major problem with codes of conduct is compliance. External and independent monitoring is the surest way of evaluating adherence to the codes, but few industries have initiated these procedures. This has been highlighted in a case study of South Africa that identifies that the labor inspectorate is poorly resourced and lacks the capacity to monitor widely dispersed, isolated farms (Barrientos, Kritzinger, and Roussouw 2004). Private or nonprofit organizations also play an important role in monitoring codes of conduct.[2] Codes of conduct can be advantageous to companies, but a code of conduct is not necessary to motivate a company to implement good labor practices. The case of Cargill's Sun Valley poultry factory in Thailand indicates that good policies lead to high productivity (see Innovative Activity Profile 1).

Access to the fair trade market is also an incentive for corporations to enact equitable labor practices. An example involving a large banana plantation in Ghana shows how a traditional plantation can provide better conditions for the workforce (see box 8.11).

Better work environments can also be achieved through partnerships between private companies, NGOs, and governments. One such example is a cashew nut factory in Mozambique. Established by a private entrepreneur, the government cashew institute and other organizations contributed to the development of a guaranteed loan. A USAID-financed NGO assisted in the design of the factory, and a Dutch NGO, SNV, has assisted with marketing. In 2002 the factory had two cashew plantations with 50 tons of production per year. Workers receive a free meal at work, and according to their contracts they have access to health assistance, paid annual holidays, and severance pay in case of professional illness or work accidents. A trade union has been set up, and a child care facility has been constructed, where women can leave their children if they bring a child care provider with them (Kanji 2004).

GUIDELINES AND RECOMMENDATIONS FOR PRACTITIONERS

Ultimately, standards for decent work and gender equity need to be enacted at the national level, as presented in Thematic Note 2, but initiatives organized by multiple stakeholders within industries, preferably including labor as well as suppliers and buyers, can be an effective intermediate

Box 8.10 Ethical Trading Initiative

The *Ethical Trading Initiative Impact Assessment,* implemented by the Institute of Development Studies in Sussex, found that codes of labor practice were having a positive effect on improving certain "visual issues." The biggest impact was on health and safety, with positive changes found on 20 out of 25 sites. This led to improvements in the lives of workers' families through observance of health and safety at home. For example, banana workers no longer hugged their children while wearing overalls used for pesticide spraying. Other changes were in better adherence to legal minimum wages and documented employment benefits for regular workers. On a Costa Rican banana plantation, women had seen some decline in occupational segregation, although they were not better represented at management levels.

Codes are helping to raise supplier awareness of the need to comply with national regulation. But codes have had little impact on the improvement of "less visual issues," such as freedom of association and no discrimination. No workers at the sites felt more able to join a trade union as a result of codes (although unions had already existed before codes on some sites in the study). Codes had little effect on discrimination in the hiring, training, and promotion of women and migrant workers. Another important finding was that regular and permanent workers were most likely to have benefited from changes resulting from codes. Casual and migrant workers (international or internal) were found in all case study countries, and the use of third-party labor contractors was found in most countries except Vietnam. These workers were least likely to have benefited from the implementation of codes of labor practice, and on many sites they faced significant discrimination.

Source: Institute of Development Studies 2007.

Box 8.11 Access to the Fair Trade Market Can Significantly Improve Working Conditions

The Volta River Estates, Ltd. (VREL) is a Ghanaian-registered commercial plantation that has been producing bananas for the European fair trade market under the Oke label (marketed by Agrofair) since 1996. VREL is the only exporter of bananas from Ghana, in the top 40 Ghanaian companies for both turnover and number of employees, and one of only two initiatives in Ghana serving the fair trade market. The company has 900 full-time workers. VREL meets the social and labor standards established by the Fair Trade Organization and Max Havelaar, and it has increased wages to 30 percent above Ghana's minimum wage. One-third of the fair trade premium is allocated toward meeting environmental standards, and two-thirds is given directly to workers, who choose investments through a premium committee, consisting of two management members and eight worker representatives, all chosen through elections. Bicycles were a recent investment by the company when workers received a particularly large premium. Permanent employees get paid annual and sick leave as well as maternity leave. Only 16 percent of VREL employees are women, partly because of the nature of the work, but mainly because of social and economic constraints. VREL, however, has established a development project and has focused on increasing gender participation. Health care is provided for workers through an on-site clinic, and the company is considering building a hospital.

Source: Mick Blowfield and Stephanie Gallet, "Volta River Estates Fairtrade Bananas Case Study," www.nri.org; www.vrelorganic.com/fairtrade.htm.

step, particularly where multinational companies operate in countries with weak governance. National and intermediate initiatives include the following:

Raise the gender implications of the growth of agroprocessing and production of high-value agricultural exports in global discussions. Multilateral organizations have the opportunity to articulate a strong policy position in international conventions and debates, securing the rights of women working in these industries. The gender implications of high-value agricultural export production could be highlighted and

disseminated in a variety of forums, raising the profile of these issues in policy circles.

Support ratification of international conventions. Following the recommendations in Thematic Note 2, national governments need to be encouraged to ratify ILO conventions. International standards are binding to all countries. The economic and social arguments for applying these standards should be presented at the national level to relevant policy makers. Incorporating informal workers fully under existing labor legislation must be given top priority.

Identify appropriate institutions to educate women on their employment rights, the content of codes, and relevant national regulations. In high-value agriculture women's empowerment requires education and training and must be based on participatory approaches to development. The development community could advocate for the provision of training and educational programs to workers. These programs also could disseminate information on labor standards, social clauses, employment rights, and the content of codes of conduct. Supporting the entry of temporary, casual, and seasonal laborers into labor unions will eventually bring greater awareness of their issues.

Expand codes of conduct. In general, retailers in the United Kingdom and continental Europe have progressed much further than the United States in the application of labor codes. Consequently companies supplying retailers in European markets are more likely to provide better employment conditions and more equitable opportunities to men and women. A wider range of agribusiness companies and large retailers, in the United States and in other major demand markets, could be encouraged to support the introduction and monitoring of codes throughout their supply chains, thereby extending the coverage of labor standards.

Support the inclusion of gender issues in codes of conduct. Several gender issues are not adequately covered in codes of conduct addressing labor conditions in developing countries. Policies against sexual harassment must be given more importance, especially training across companies. Codes are not effective if workers are not aware of the principles in the codes.

Ensure temporary workers are covered under codes of conduct. Suppliers are more willing to respond when a critical mass of buyers request codes of labor practices. Collaboration between buyers can help to enforce the message of inclusion of temporary workers. Social auditors need to include casual migrant and contract workers in monitoring and engaging with trade unions and NGOs who are aware of these workers. Local multistakeholder initiatives can play an important role, such as that of the Wine Industry Ethical Trade Association (WIETA) in South Africa. Bringing labor contractors into the dialogue is a more effective means of ensuring improved labor conditions.

Enable local organizations to participate in monitoring of codes of conducts relevant to labor standards. Involvement of civil society organizations should be encouraged in monitoring and auditing labor standards and the social aspects of codes of conduct. This involvement is essential to protect and enhance the working conditions and employment rights of all workers in these industries. A need is also present to establish mechanisms for ongoing and confidential reporting of violations of the code by all groups of workers, including those in less secure and temporary work. For example, Kenya stakeholders in the flower export industry developed their own participatory auditing methodology.[3]

The entry of rural women in developing countries into the industrializing agricultural labor market can expose them to new risks and poor employment conditions, but these jobs can also create new opportunities to raise living standards for the rural poor. Additional work is required in more countries, particularly in Asia, to better understand the role that national and international organizations can have in improving labor relations and reducing gender inequalities. For example, the East Africa Business Summit from Kenya, Tanzania, and Uganda has been held annually since 2002. In 2003 participants resolved to increase their sourcing of inputs from small- and medium-size enterprises, with a target of 25 percent of total inputs (Kivuitu, Yambayamba, and Fox 2005). Gender equity and the links to improved productivity should be raised on the agendas of these and similar meetings.

INNOVATIVE ACTIVITY PROFILE 1

Thailand: Cargill's Labor Improvement Program for Sun Valley Foods

Thailand's relatively low wages afford considerable competitive advantage in labor-intensive industries with low skill requirements. A large number of Western companies have established labor-intensive factories in poultry, shrimp, and other agroprocessing industries. In 1995 Cargill's Thailand division, Sun Valley Foods—the third-largest poultry processor in Thailand, accounting for about 10 percent of the country's exports—began to evaluate human resource management problems. Chief among these was a high voluntary turnover rate among its largely women workforce. In 1995 turnover was 100 percent. There was also a high rate of absenteeism, and although accident and injury rates were low for the industry, room for improvement was identified. In a study for the Gender Agriculture Project for USAID, John Lawler described the strategy Cargill implemented to improve productivity in its Thai poultry business (Lawler and Atmiyanandana 2000). Cargill's strategy was not radical, but it was equitable and family friendly, and it yielded important lessons about the potential of company-led gender-sensitive policies in an industry dominated by women laborers.

What's innovative? Sun Valley management developed a series of initiatives in human resource management, including a range of family-friendly policies as well as cultural and gender-sensitive incentives such as the following:

- Promoting a culture of community and family through training on company values
- Providing some supplementary assistance, such as payment toward hospitalization fees, and reassigning pregnant women to work that was not physically taxing and did not normally require them to work overtime
- Giving financial assistance for the schooling of employees' children, along with some scholarships for students with particularly good grades
- Providing free bus service to and from work, which women particularly viewed as a friendly policy.

Thailand has one of the highest proportions of women working outside the household (47 percent). The Thai government has implemented policies to improve working conditions for women. The current constitution prohibits discrimination, including employment discrimination based on gender. However, legislation to prohibit gender discrimination in the private sector has not been enacted. For example, employers in Thailand often advertise job openings specifically restricted to men or women, depending on the type of job.

Cargill has operated in Thailand since the early 1960s through two companies in addition to Sun Valley. Sun Valley, with a workforce of about 3,900, is a fully integrated poultry business that produces raw chicken that is further processed (skinned, deboned, and so on) before sale. Almost all of the company's output is exported. The processing plant, located in Saraburi, employed 1,500 or more when operating at peak capacity. In the processing plant supervision and work activities were regulated, with teams of 40 to 50 workers headed by a supervisor and one or more assistant supervisors. Employees wore uniforms that were color coded to indicate general job category. Job and work pace were highly routinized, requiring manual dexterity. Because of the care required in production work, individual workers and work groups had a significant impact on productivity, despite the work pace set by assembly line technology. Base pay for production workers was the local minimum wage.

Jobs were highly segregated. Almost all the workers in the feed mill were men, as well as most of the workers involved in

slaughtering animals. In contrast, the vast majority of workers who processed the chickens after slaughter were women.

An analysis of the production facility identified several sources of turnover. Job dissatisfaction led to employees quitting and absenteeism. Family responsibilities were a second cause. Day care did not seem to be such a problem because of the availability of extended family members, but medical care required more time off, and employees frequently ended up quitting to care for family members. Turnover meant that the company was not recovering the training costs of employees. Sun Valley management knew that employees with more than a year of service had double the productivity of employees with only six months of service.

PROGRAM DESCRIPTION AND SPECIFIC ACTIVITIES

Between 1995 and 2000 Sun Valley management determined to turn the employment record around for the company and developed a series of initiatives in human resource management. Those initiatives included a range of family-friendly policies as well as cultural- and gender-sensitive incentives.

The company introduced several programs that linked pay to performance. It initiated performance appraisals to determine annual pay increments and promotion opportunities. Employees were given bonuses for length of service. Annual bonuses were paid to employees based on overall company performance and were larger for longer-term employees. Bonuses were attached to specific indications, such as chicken mortality rates in barns of the grow-out farms. Other bonuses were specifically linked to daily attendance, and Sun Valley paid a special award annually to those with perfect attendance.

The company also promoted a culture of community and family through training on company values. Supervisors were most often women, who were promoted from within the ranks of production workers, which worked well in Thailand's culture. These supervisors could arrange short or even extended leaves of absence without pay to allow an employee to handle family emergencies, such as a sick child or family member; and short-term leave without pay was allowed during the harvest season. These policies enabled employees to take time off for medical and family emergencies but encouraged them to return.

Although maternity leave with pay is required by Thai law, interviewees indicated that other companies and employers discourage workers from using it. Medical care for pregnant workers was covered under the Thai Social Security Act, but Sun Valley provided some supplementary assistance, such as payment toward hospitalization fees. In addition, Sun Valley reassigned pregnant women to work that was not physically taxing and did not normally require them to work overtime.

Sun Valley also provided financial assistance for the schooling of employees' children, along with some scholarships for students with particularly good grades. The company also implemented an educational program to improve literacy and made provisions to allow employees to attend classes several hours per week outside of normal work hours and receive pay. The program served to build ties to the company.

Free bus service was provided to and from work; other companies provided buses but charged for their use. Women in particular viewed this as a friendly policy. Many lived far from the plant and were concerned about their safety traveling alone, particularly at night. Sexual harassment was prohibited in company policies that were widely disseminated, and in interviews women indicated that there were far fewer problems than they had experienced in other companies.

BENEFITS AND IMPACTS

The benefits from the program accrue to both the company and the employees.

Company costs and benefits

Data are not available on the additional costs of these improved human resource programs, but the main categories of costs included wage-related costs, such as bonuses and costs for education programs, transport, and health and safety improvements. The benefits of the programs in terms of increased productivity clearly exceeded the cost outlay.

During and following the period of implementation of these policies, the company continuously met or exceeded its financial performance goals. In 2000 Sun Valley embarked on an ambitious expansion program to increase production capacity by 30 percent. In 2001 the company received Thailand's National Health and Safety Award.

Employee benefits

Employees cited an improved work environment at the company. Sun Valley's policies provided significant economic benefit at the individual and household levels by

reducing the cost of unemployment and the costs of employment search for women who needed to take leave. The education program had both direct and indirect benefits: women expressed considerable benefit from the education program, both as an example to their children and in terms of personal accomplishment. The safety programs and improved transport increased safety and likely reduced the risk of violence for women, benefits that are not easily quantified but are important for well-being.

LESSONS LEARNED AND ISSUES FOR WIDER APPLICABILITY

Several of the lessons learned by Sun Valley can be applied more widely.

The private sector can independently contribute to improved working conditions. The management of Sun Valley was seeking means to address problems affecting the profitability of the company and identified several policies to solve problems of absenteeism and turnover. These strategies might now work in all industries. In fact, in studies of the costs of applying codes of conduct, researchers have indicated that for some companies, especially small companies, compliance costs are onerous (Collinson 2001a, 2001b). The most significant costs tend to be health and safety costs, due to equipment, and the costs of auditing and management systems. Ironically, improving working conditions without certification may be the best option for some companies in which these practices can increase productivity, or in which companies can benefit from the CSR publicity without certification.

Improved work conditions can benefit the corporate bottom line. Improved work conditions can benefit corporations in several ways. The Sun Valley examples illustrate that productivity increases can be substantial. Declines in health expenditures, and a reduction in turnover and absenteeism, are more easily measurable than good worker morale and a positive workplace environment, but all of these factors increase worker productivity. Improved working conditions at Sun Valley increased business sustainability through raising the company's profile within the country. More qualified workers are likely to be drawn to a company with a good reputation, and the national and local business environment should be improved.

There are challenges in relying on voluntary labor standards. Labor market regulation is a blend of specific rules negotiated by parties (either individually or collectively) to an employment relationship and general legislative imperatives that establish baseline entitlements for workers. Voluntary company codes of conduct or employment practices do not rely on an employment contract, legislation, collective agreement, or common law. When the corporation is responsible for the production of norms governing the workplace, there is no minimum standard, no guarantee of consistency, and no monitoring or compliance mechanisms. The current proliferation of company codes of conduct has been criticized for these deficiencies. Where national employment legislation and collective action organizations are weak, however, multinational and transnational corporations may be instrumental in setting standards. These companies, as the Cargill example shows, can establish the economic, financial, and social value of these standards. In addition, in a competitive environment as labor markets tighten, such standards may create additional social benefits as other companies adopt labor standards in order to compete.

NOTES

Overview

The Overview was written by Kristy Cook (Consultant) and reviewed by Nata Duvvury and Catherine Ragasa (Consultants); Eve Crowley, Libor Stloukal, and Paola Termine (FAO); Maria Hartl (IFAD); Sriani Ameratunga, Peter Hurst, Mary Kawar, Susan Maybud, Martin Oelz, and George Politakis (ILO); Ratna M. Sudarshan (Institute of Social Studies Trust); Steve Wiggins (ODI); and Elena Bardasi and Rekha Mehra (World Bank).

1. A summary of these studies is presented in World Bank (2001), appendix 4.
2. See World Bank (2007), articles by D. Elson, G. Standing, and S. Horton, among others.
3. Both of these movements are well documented by nongovernmental and international organizations, including NGOs, research organizations, the United Nations, and trade unions.
4. IFAD, "Experience Sharing from the Rural Development Project for Taourirt-Taforalt in Morocco: Coping with Constraints to Reach Women," www.ifad.org.
5. In India it is legally permissible for children over the age of 14 to work. However, large numbers of children under this age work full time.
6. Guy Blaise Nkamleu, "Children at Risk in the Agricultural Sector in Sub-Saharan Africa: Determinants of Child Labor Participation in the Cocoa Farming of Côte d'Ivoire," paper presented at Sixth Annual Global Development Network Conference, Dakar, Senegal, www.gdnet.org.
7. Cecilia Luttrell and Caroline Moser, "Gender and Social Protection," draft paper for Department for International Development, www.eldis.org/go/topics/resource-guides/

gender/key-issues/gender-and-social-protection&id=22475&type=Document.

8. Specialists at the World Bank define *social protection* as consisting of public interventions "to assist individuals, households and communities in better managing income risks" (Holzmann and Jorgensen 1999). The ILO, on the other hand, sees social protection as defined by basic rights: "Entitlement to benefits that society provides to individuals and households—through public and collective measures—to protect against low or declining living standards arising out of a number of basic risks and deeds" (von Ginneken 2000 as quoted in Barrientos and Barrientos 2002).

Thematic Note 1

This Thematic Note was written by Anushree Sinha (National Council for Applied Research [NCAER]), and Kristy Cook (Consultants), with inputs from Catherine Ragasa (Consultant), and reviewed by Nata Duvvury (Consultant); Maria Hartl (IFAD); Eve Crowley, Libor Stloukal, and Paola Termine (FAO); Sriani Ameratunga, Peter Hurst, Mary Kawar, Susan Maybud, Martin Oelz, and George Politakis (ILO); Ratna M. Sudarshan (Institute of Social Studies Trust); Steve Wiggins (ODI); and Elena Bardasi and Rekha Mehra (World Bank).

1. ILO popularized the notion of the informal sector in the early 1970s and has a long history of contributing to the conceptual and policy debates about the informal economy. Various expert groups, such as the Delhi Group on Informal Sector Statistics, have sought to distinguish between the informal sector and informal employment. The concept of informal employment refers specifically to the activity undertaken by a person as the unit of observation. The term informal employment is used by the ILO Task Force (2002) to mean employment that has no secure contracts, worker benefits, or social protection. The major component of such employment is (a) self-employment in the informal sector and (b) paid employment in informal occupations. The latter could also be in the formal sector, and certain evidence can be found of such employment. Informal workers employed in the formal sector do not get similar wages/benefits as formal workers.

2. See also www.ilo.org/public/english/protection/condtrav/pdf/agri_wind.pdf and www.ilo.org/public/english/protection/condtrav/workcond/agriwork/agricult.htm.

Thematic Note 2

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1. This section is drawn largely from FAO's "Gender and Law: Women's Rights in Agriculture" (FAO 2006).

2. Government of Chile, "Report on the Implementation of the Beijing Platform of Action Presented by the Government of Chile to the United Nations Division for the Advancement of Women. Response to the Questionnaire," April, www.un.org.

Thematic Note 3

This Thematic Note was written by Kristy Cook (Consultant), with inputs from Catherine Ragasa (Consultant) and Hild Rygnestad (World Bank), and reviewed by Nata Duvvury (Consultant); Maria Hartl (IFAD); Eve Crowley, Libor Stloukal, and Paola Termine (FAO); Sriani Ameratunga, Peter Hurst, Mary Kawar, Susan Maybud, Martin Oelz, and George Politakis (ILO); Ratna M. Sudarshan (Institute of Social Studies Trust); Steve Wiggins (ODI); and Elena Bardasi and Rekha Mehra (World Bank).

1. This discussion draws heavily on research by recent authors on nontraditional agricultural exports (see Barrientos, Kabeer, and Hossain 2004; Dolan and Sorby 2003; Tallontire 1999).

2. In England a group of NGOs organized by Christian AID has worked with supermarket chains to ensure that the African women who pick and pack fruits and vegetables are being fairly treated.

3. Ethical Trading Initiative, "Final Report of the ETI Multi-Stakeholder Seminar on Colombia Flower Industry," www.ethicaltrade.org.

Innovative Activity Profile 1

This Innovative Activity Profile was written by Kristy Cook (Consultant) and reviewed by Catherine Ragasa (Consultant); Maria Hartl (IFAD); and Eija Pehu (World Bank). This Profile draws heavily from Lawler and Atmiyanandana (2000).

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