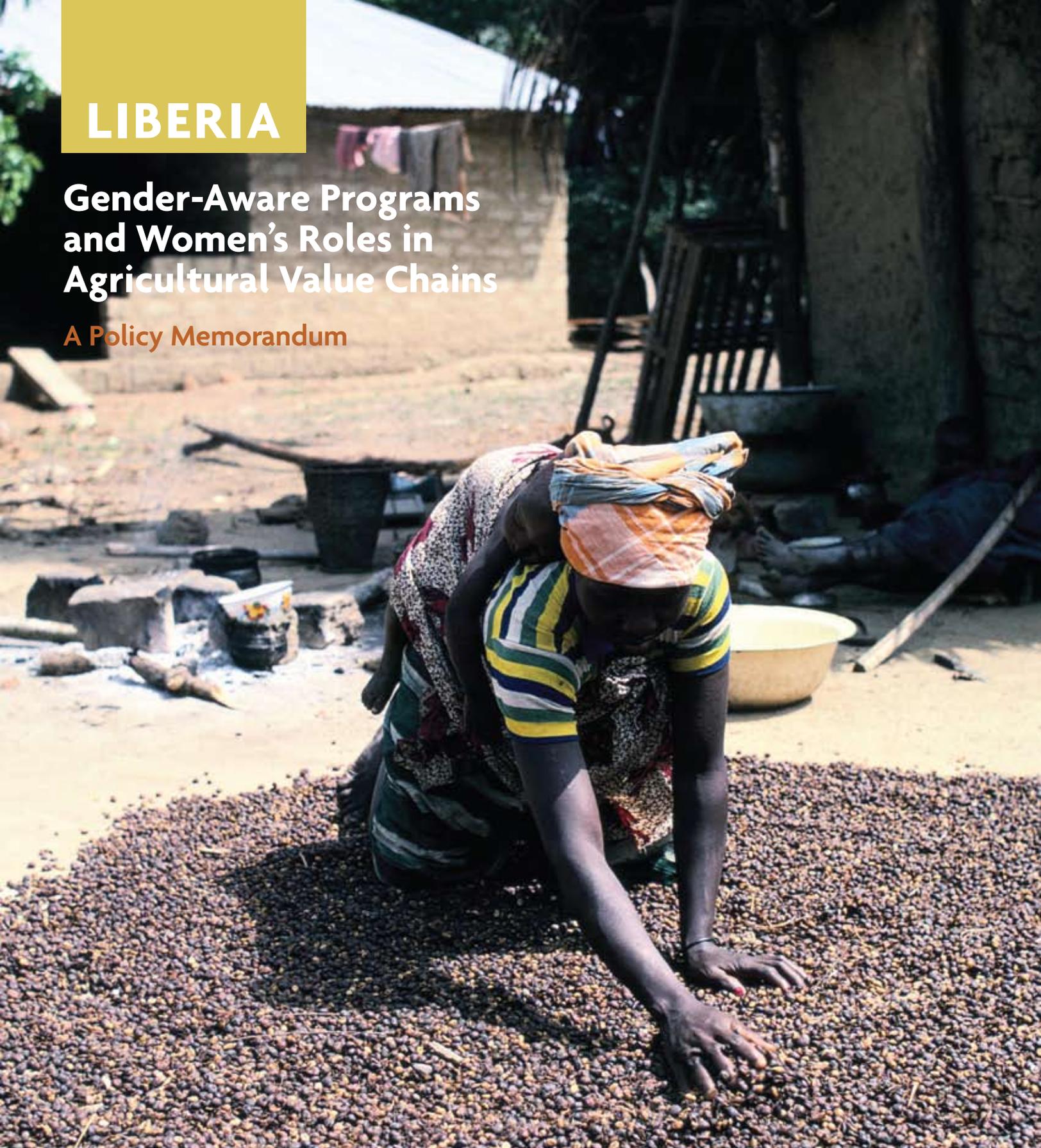


LIBERIA

Gender-Aware Programs and Women's Roles in Agricultural Value Chains

A Policy Memorandum



Prepared by the World Bank's Gender and Development Group (PRMGE)
in collaboration with the Ministry of Gender and Development of Liberia (MOGD)



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List of Acronyms

AIDP	Agriculture and Infrastructure Development Project	LISGIS	Liberian Institute of Statistics and Geo-Information Services
BIA	Benefit Incidence Analysis	LPMC	Liberia Produce Marketing Corporation
CARI	Central Agricultural Research Institute	LPPC	Liberia Palm Products Corporation
CAAS-Lib	Comprehensive Assessment of the Agricultural Sector–Liberia	ME	Marketing Extension
CFSNS	Comprehensive Food Security and Nutrition Survey	MOA	Ministry of Agriculture
CWIQ	Core Welfare Indicators Questionnaire	MOIA	Ministry of Internal Affairs
DHS	Demographic and Health Survey	MOPEA	Ministry of Planning and Economic Affairs
DTIS	Diagnostic Trade Integration Study	MOGD	Ministry of Gender and Development
FAO	Food and Agriculture Organization	MPW	Ministry of Public Works
FAPS	Food and Agriculture Policy and Strategy	NGO	Non-Governmental Organization
FFS	Farmer Field Schools	NIC	National Investment Commission
FBO	Farmer-Based Organization	PER	Public Expenditure Review
GCWG	Ganta-Concern Women’s Group	PRS	Poverty Reduction Strategy
GOL	Government of Liberia	P4P	Purchase for Progress
IFAD	International Fund for Agricultural Development	RBI	Results-Based Initiative
IITA	International Institute of Tropical Agriculture	SSGAS	Small-Scale Gender and Agriculture Survey
JP-FSN	Joint Program–Food Security and Nutrition	UN	United Nations
LCCC	Liberia Cocoa and Coffee Corporation	UNDP	United Nations Development Program
		UNIFEM	United Nations Fund for Women
		UNMIL	United Nations Mission in Liberia
		WFP	World Food Program
		WB	World Bank

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Executive Summary

Women comprise over half of the agriculture labor force and about two-thirds of the trade and commerce labor force in Liberia. Their role in agriculture is important, particularly in food crops, where they are reported to produce over half of the output; their production of cash crops is limited. Access to resources and markets is also significantly constrained—across the population—but women, because of their multiple economic and domestic activities, are particularly affected. Policies and programs designed to revitalize the rural economy, including its agricultural production, processing and marketing, should take into account the role of women and women’s groups.

This Policy Memorandum provides policy advice to the government of Liberia (GOL) in an effort to mainstream gender issues in policies, programs, and projects supporting agricultural production and value-chain development. It is organized as follows.

- Section I reviews women’s roles in Liberian agriculture and agricultural value chains, drawing on a variety of data sources, including the 2007 Core Welfare Indicator Questionnaire Survey (CWIQ) and the two rounds of the Comprehensive Food Security and Nutrition Survey (CFSNS, 2006 and 2008). It also gives an overview of the agricultural sector in Liberia.
- Section II uses the same sources to analyze key constraints faced by women as agricultural producers and in value-adding activities, as well as key crop-specific issues in cassava, rice, and tree crops.
- Section III reviews the engagement of the GOL in gender-aware agriculture programs and recommends some key general principles to support gender-aware interventions, and specific recommendations aimed at supporting women as agricultural producers and increasing access to, and better efficiency in, value addition.

- Section IV discusses the institutional issues that need to be considered to support the design, implementation and monitoring of interventions.
- Finally, Section V discusses the availability and the role of appropriate gender aware data as the basis for policy programming and monitoring of interventions.

KEY POLICY MESSAGES

- Women farmers play a key role in Liberia’s agriculture sector and agricultural value chains.
- Overall, agricultural value chains face enormous challenges, but paying attention to women’s constraints is particularly important.
- Government interventions need to focus on women’s key constraints and diverse opportunities, and ensure solutions are sustainable over the long term.
- Success in interventions to address gender issues in agriculture and value chains will require well-defined institutional roles and mandates, better technical and program implementation capacity, and effective coordination.
- Improved gender-aware data collection is key for evidence-based policy design, implementation, monitoring, and evaluation.

Women farmers play a key role in Liberia’s agriculture sector and value chains

The success and sustainability of Liberia’s economic recovery require the full engagement of all key players in the rural economy, especially women in the agriculture sector. Evidence from the 2007 Core Welfare Indicators Questionnaire (CWIQ) survey indicates that women constitute over half of the labor force in

agriculture, the sector that employs most of the country's labor force overall, predominantly in smallholder agriculture, and about two-thirds of the labor force in trade and commerce. Women are reported to produce over half of the output in food crops. Their access to cash crops, however, is quite limited. There is also a certain degree of gender specialization in agricultural field activities, with men dominating seemingly all tasks in the major cash crops. In food crops, despite women's dominance for most of the crop season, that is, planting, weeding, and harvesting, men are in charge of brushing, felling, clearing, and fencing. Policies and programs designed to revitalize the rural economy, including its agricultural production, processing, and marketing functions, should take into account the role of women and women's groups in agricultural production and trading. Given the substantial work burden that women face because of responsibilities in economic and domestic tasks, investments to increase farm-level productivity can help increase women's economic contribution overall and maximize household welfare.

Overall, agricultural value chains face enormous challenges, but paying attention to women's constraints is particularly important

Generally, agriculture-related value chains are affected by a multitude of constraints that apply to all players, irrespective of gender. Because of their productive and reproductive roles in the household, community and the economy, these constraints are a particular burden for women. This memorandum reviews the general and crop-specific constraints.

The constraints faced by women engaged in agricultural production affect household food and nutrition security and their ability to generate income

Several constraints to growth in agricultural production, particularly among women, can be highlighted. First, lack of access to agricultural production inputs and technology limits farmers' ability to increase productivity in all crops. Second, access to land, control

over it, and land-tenure security are more limited among women in Liberia resulting in less ability to invest in agriculture and expand beyond subsistence level. Third, lack of readily available household labor and inability to hire prevent farmers from expanding beyond subsistence level in food crops and in venturing into cash crops, which are typically more demanding. Fourth, provision of extension services to farmers is extremely limited because of an aging, outdated, and underfunded extension system that has very poor coverage and limited ability to effectively reach farmers. The prevalence of high illiteracy rates among women makes them less effectively reachable through conventional means. Fifth, the availability of finance is extremely limited among agricultural producers. However, wherever microcredit institutions exist, women are significantly represented, which suggests that improving credit services in rural areas can have a significant impact on business development. Finally, a limitation that is somehow a product of the above constraints is poor access to profitable cash crops, which prevents women farmers from diversifying and limits their prospects for generating cash income. This is a result of the rigid, gender-based division of labor in crop production that results in women's specializing and controlling food crops, and of the fact that many cash crops, particularly tree crops, are grown under vertically coordinated institutional arrangements to which women have limited access.

Women face significant constraints to accessing markets and value-adding opportunities

Despite their major role as food producers, low productivity in agriculture prevents generation of surpluses and limits women's prospects for sustained participation in food markets. Furthermore, a set of constraints specific to post-harvesting can be highlighted. First, poor marketing infrastructure—roads, storage facilities, and market structures—make it difficult for farmers to sell their products in distant markets, to store for long periods to take advantage of higher prices in the hungry season, or simply to retain their products for food security or as a consumption-smoothing strategy. Second, limited information about market opportunities and price levels in various markets limits transparency, prevents competition

among smallholders, and limits the degree of market integration. Third, the lack of marketing support services, finance, and business training for women farmers hinders expansion and market orientation. This is increasingly important as food systems evolve and more stringent quality standards are required in value chains. Finally, women farmers lack access to value-adding opportunities through processing of crops. Improving women’s access to value-adding technologies (processing, packaging, storage) and market opportunities for processed products would be important both for relieving pressure on labor allocation in the household and for promoting value addition and income diversification. In Liberia, this is particularly important for rice and cassava, but opportunities need to be explored for other crops.

Government interventions need to focus on women’s key constraints and diverse opportunities, with a focus on long-term sustainability

The Government of Liberia recognizes the importance of gender issues in agriculture and aims to effectively address the challenges in the context of the Poverty Reduction Strategy. Several initiatives are currently in place to address agriculture and rural development issues, but efforts need to be strengthened to ensure successful gender mainstreaming in implementation. In general, most of these projects do not have an explicit gender mainstreaming strategy. One exception is the Joint Program on Food Security and Nutrition (JP-FSN), which is specifically focused on addressing gender issues. To enhance the ability of programs such as the JP-FSN to address the main challenges faced by women, emphasis needs to be placed on good practices in implementing those interventions and scaling them up.

This policy memorandum proposes a set of five general principles, and recommends specific actions to support interventions in agriculture production, processing, and marketing.

Five Principles to Support Interventions

- **Interventions need to be demand-driven and engage the private sector.** As the country transitions from conflict to development, it is important to find ways to make interventions more sustainable by ensuring that women’s interests are taken into account and can be met and sustained, and by recognizing that it is crucial to strengthen the participation of private sector firms whenever possible. All programs need to be clearly sustainable and have a workable exit strategy.
- **Promote crop and income diversification.** To be able to sustain food and nutrition security and raise crop income, it is important that rural households grow multiple crops and ensure that productivity gains in the farm are achieved. While some crops will contribute to meeting food and nutrition security needs, others need to be included to support women farmers’ market orientation for income generation.
- **Look for viable opportunities in tree crop sectors.** It is important to develop a better understanding of the barriers to access to contract farming opportunities in tree crops and to identify actions to increase women’s profitable participation. As a way to preserve household food security, contract farming arrangements need to include support to food crop production to participating farmers through technology packages, including seeds and chemical inputs, where appropriate.
- **Target capacity building for women through farmer-based organizations, with potential to spill benefits over to individuals.** The scale needed to generate sustainability is important in any intervention. While joint production and direct support to women groups are crucial, knowledge transmission that allows individual agents to increase their productivity needs to be encouraged. For interventions aimed at adding value through processing, business linkages with male farmers should be encouraged as a way to ensure that scale in processing is achieved and sustained.
- **Identify and promote strategies for scaling up.** The relevance of some interventions is unquestionable

on economic grounds, for example, provision of seeds and tools and expansion of extension coverage. Practical ways need to be found for quick and sustainable scaling up. For other interventions, such as those that cover various nodes of the value chain simultaneously, an assessment needs to be done to issue recommendations on the best ways to scale up. Specific recommendations to support interventions follow.

Support to Women as Agricultural Producers

In supporting women farmers to improve their productivity and increase production levels, four areas of intervention are prioritized.

- **Seed production and distribution systems.** Promoting and sustaining well-functioning seed production and distribution systems that recognize the roles of women, and their weaknesses and strengths, are crucial for a successful agriculture and a food security support strategy. At the current stage of agricultural development in Liberia, one of the crucial areas of support to agricultural production and sustained food security and crop diversification is the development of seed production and distribution systems. There are two key issues to keep in mind in designing seed interventions: (1) understanding the nature of the demand for seed for specific crops is important to determine the appropriate supply response, and (2) as formal and informal seed systems may focus on different crops and varieties, and even serve different clienteles, interventions need to see these two systems as complementary and take advantage of their relative strengths.
- **Access to cash crops.** For long-term, sustained income growth for women, it will be important to increase women's access to cash crops by encouraging private sector partnerships and policy incentives and by addressing key constraints to access and performance. Finding ways to improve women's access to outgrower schemes will be important in order to maximize their share of the benefits of growth over the long term.
- **Gender-aware extension** is the key vehicle through which the role of women in agriculture can be

transformed with positive impacts on access to, and performance in, profitable opportunities. For this to happen, extension interventions need to:

- Consider women as economic agents who operate in productive and commercial areas, and acknowledge their current and potential roles in the rural economy—as producers of food for both subsistence and sale, as well as producers of food crops and processors of agricultural products.
- Adjust extension packages to reflect women's specific needs and use methods of delivery that fit those needs. In addition to diversifying packages, it is important to take into account the specific issues that may contribute to the different abilities of men and women to successfully access and utilize extension information.
- Maintain Farmer Field Schools (FFS) as the cornerstone of successful gender-aware extension delivery. In this context, the continued work with farmer-based organizations (FBOs) and existing implementing partners will be important.
- Strengthen women's participation and representation in FBOs and make sure women farmers are increasingly represented in instructional and decision-making roles and as first-line extension agents. This increased participation will help ensure that women's concerns are sustainably taken into account in the implementation of extension programs relying on FFS.
- Ensure sustainable knowledge dissemination by using farmer-trainers and informal communication through peer farmers.
- **Access, ownership, and control over land.** Improving women's access, ownership, and control over land will potentially contribute to greater investments in the land and increased productivity and welfare. Women have a disadvantage in access, ownership and control over land resources. From what is known at this point, some practical actions can be recommended.
- There is a need for better dissemination of the existing laws among the rural population to expand benefits from the changes already enacted in the law; and

- To allow women to plot larger areas of land, efforts are necessary to reduce the burden of household chores by improving access to water and firewood, and improving access to productivity-enhancing technologies

Support Access to, and Better Efficiency in, Value Addition

Taking advantage of opportunities to participate in value chains through value-adding strategies is an important way to ensure that women farmers benefit from economic growth. To date, interventions in Liberia have focused primarily on strengthening women’s participation in marketing and processing cassava and rice. This note highlights aspects that can also be considered in identifying opportunities and maximizing the benefits of participation in other value chains. There are three major ways in which opportunities for value addition may be expanded.

- **Upgrading women’s roles in value chains to include processing and marketing roles that may have not previously been a major strength for women.** This is essentially the case of rice and cassava in Liberia, where value addition is being pursued. In supporting this expansion of women’s roles, it is important to bear in mind the multiple constraints or limitations that prevented them from participating in the first place. Thus, support should include access to technology, post-harvesting, including storage, handling and book-keeping, and market linkages.
- **Market information needs to be developed in a gender-sensitive way to allow women farmers to take full advantage of emerging and growing opportunities.** A potentially viable option lies with the cassava crop, from which a wide range of differentiated products can be produced, and markets for them found. Opportunities for other agricultural products need to be explored, as well. If women farmers are given access to technologies and market linkages, they may extract important benefits in those niches.
- **Increasing efficiency in established interactions in the value chains, by facilitating access to technologies, training, and markets.** This efficiency can be achieved by financing the initial stages of value-addition strategies, when affordability is a determining factor in

women’s access to technologies and markets. In other cases, organizational and marketing capacity may be needed, which may require setting up groups and training programs to address key issues. Such efforts should include facilitating linkages among farmers’ groups and wholesalers and processors.

Generally, to maximize the likelihood of participation and benefits, it will be important to address issues of infrastructure, storage technology, market information, and access to finance. Specifically, there are three areas to be tackled.

- **To establish and maintain marketing infrastructure, and disseminate storage technology, work needs to be done in three areas.** (i) rehabilitation of strategically targeted farm-to-market roads through incentive systems such as cash or seeds for work involving women, (ii) rehabilitation of market sites in strategic locations where wholesale trade is more likely to be profitable, and (iii) improving storage technology at various levels—commercial and household.
- **To take full advantage of emerging and growing opportunities, market information needs to be developed in a gender-sensitive way to allow women farmers.** Printed bulletins can be effective among formal trading firms in urban areas. For more informal urban and rural producers and traders, including women’s trading networks, the use of radio will be more appropriate. The increase in cell phone use can also be exploited for information dissemination.
- **To be sustainable, access to finance needs to accompany, or even follow, the resolution of more fundamental constraints that affect production, processing, and marketing.**

Support Development of Farmer-Based Organizations

Support for collective action is at the core of the interventions. Successful and sustainable support here requires providing the necessary technical support while promoting a business- and market-orientated culture. Significant efforts are being made to support women’s groups; these need to use existing structures and address gender-specific needs. For example, first, support needs to be based on a solid value-

chain analysis—through a gender lens—that identifies and influences links among the supported groups and other key players in the value chains. Second, to reduce transaction costs and increase economies of scale, support needs to be provided to a network of women’s groups, whenever possible, not to isolated groups. Third, support to women farmers to engage in chain partnerships needs to be comprehensive and multi-faceted, providing assistance in

- technical production capacity,
- access to and control of physical assets, and control of financial assets,
- dedicated market channels for women, in both input and output markets, and
- capacity development to strengthen self-esteem and leadership capabilities.

Interventions need to focus on strengthening women’s roles in partnerships, and their profit and market orientation. Who bears the costs of the organizational development that enables women’s farming groups to become economically sustainable needs to be addressed. It is recommended that development partners, NGOs, and government institutions coordinate with farmers’ groups and other value chain participants on a viable sustainability and exit strategy.

Successful interventions to address gender issues in agriculture and value chains will require well-defined institutional roles, better capacity, and good coordination

These elements will be crucial in order to sustainably maximize the ability to support interventions that address gender issues in agricultural and rural development programs and policies.

Clear institutional vision, roles and mandates

A clear definition of the vision and roles of participating institutions, and avoiding overlaps, are an important efficiency requirement. Clarity on the distribution of responsibilities between central and local-level government institutions, and on outsourcing to

the private sector and community organizations, are integral the institutional framework that underpins an effective agriculture sector strategy.

Institutional roles need to be well defined in interventions supporting women, as do responsibilities for data generation and sharing and information dissemination. In this context, the mandates and roles of the following agencies need to be fully understood and pursued for maximum impact.

- The Ministry of Agriculture (MOA), as the main implementing agency, plays a central role in this framework of institutions. It also compiles and maintains relevant sector information necessary for the overall evaluation of sector performance, including intrasector budget allocations relevant to gender-aware benefit incidence analysis.
- The Ministry of Planning and Economic Affairs (MPEA) has a key role in the collection of data for monitoring the Poverty Reduction Strategy (PRS), including for agriculture and rural development strategic actions. For data collection to facilitate gender-aware programming in the agricultural sector, the MOA, through its planning and its monitoring and evaluation (M&E), statistics unit, should bear primary responsibility for the design of sector surveys. A key role in data collection also is played by the Liberian Institute of Statistics and Geo Information Services (LISGIS), the official government statistics and data collection agency.
- The Ministry of Gender and Development (MOGD) has an important advisory and coordination role to play in agriculture sector issues relating to empowerment of women. Under the PRS, it has primary responsibility for coordinating the gender cross-cutting themes, which include liaison on agriculture as an essential part of the economic revitalization pillar.

Given the large number of technical agriculture organizations, the question of the appropriate role for MOGD in this technical area becomes relevant. In this context, and for efficiency purposes, the MOGD should not play an implementation role per se. Instead, it should focus its efforts on playing a coordination

and advisory role to ensure that the proposed efforts are gender-sensitive and that sufficient gender analysis and programming capacity are present in the participating institutions.

Emphasis is needed on technical and implementation capacity

Capacity building in the areas of policy, programming, and monitoring of gender issues in agriculture and rural development initiatives is necessary to encourage the development of skills commensurate with respective institutional mandates and roles. Capacity-building efforts need to focus on enhancing the implementation of programs that are currently planned, as well as on programs designed to meet PRS-specific targets. The MOGD and MOA should be the primary targets of these efforts, especially in the areas outlined below.

- **Ministry of Gender and Development (MOGD).** Specific areas to be targeted include skills to guide overall policy dialogue, coordinate the integration of gender issues in the context of agriculture and rural development programs, and ensure that gender-disaggregated monitoring and evaluation are adequately integrated in programs. Initial emphasis needs to focus on capacity at the central level, to ensure effective interaction and proactivity with other relevant institutions. At decentralized levels, it will also be important to ensure that MOGD County Gender Officers are adequately versed in the analytical and programmatic aspects of the links between gender and agriculture issues outlined in this memorandum.
- **Ministry of Agriculture (MOA).** As the main government agency responsible for agriculture policy, the MOA needs strong capacities in research and extension, and in successfully designing, implementing, and monitoring gender-sensitive programs. This capacity is needed at both the central and decentralized levels. There are two areas to be targeted. First, the Planning and Monitoring and Evaluation Department should contribute to the integration of gender issues in agriculture sector development strategy, and ensure quality gender-disaggregated data collection and analysis. As the PRS and the Liberia Food and Agriculture Policy and Strategy

(FAPS) already incorporate gender considerations, the MOA needs to be staffed with personnel capable of pushing forward that agenda in these programs. This capacity should permit coherent development of an M & E system that includes consistent and effective collection of gender-disaggregated data over time in the context of the agricultural surveys, and targeted gender analysis of gender issues in the sector. Second, the Central Agricultural Research Institute (CARI) and the Agricultural Extension Service also need improved gender-aware capacity building to better identify and disseminate technologies that address gender-relevant constraints. In the process of rebuilding its research and extension capacity, it will be important to incorporate gender considerations ranging from the composition of trainers and trainees to the content of programs that should include gender-sensitive targeting at the decentralized level. Extension staff needs training and sensitization to understand the importance of gender issues and to effectively communicate implementation strategies, and must build integrate these with their technical capacity to implement them. CARI’s ability to develop and modify agricultural and agroprocessing technologies that can be adequately accessed by women needs to be strengthened.

Improved coordination and information sharing among relevant institutions

Given the multiplicity of central- and county-level institutions involved—in program design and implementation, evaluation, data collection, and information dissemination—institutional coordination is needed, especially to ensure efficient delivery of services. It will be important that appropriate coordination mechanisms are agreed for each intervention. Among the key issues to be considered are institutional leadership roles and information-sharing mechanisms. The establishment of leadership roles helps avoid duplication of efforts and leads to effective delivery. Thus, for example, for collection of gender-disaggregated data, the respective roles of the MOA Planning Unit and LISGIS need to be specified, and, together with MOGD, all three institutions need to agree on appropriate channels for information sharing.

Improved gender-aware data collection is key for evidence-based policy design, implementation, monitoring, and evaluation

Effective gender-aware policies and programs and the monitoring and evaluation of their impacts depend on the availability of data at different levels. Relevant data can be produced for specific projects focused on specific monitoring indicators. More importantly, such data need to be generated in the broader context of the national statistical system's data collection activities—which typically generate indicators to be tracked over time and are normally representative at both subnational and national levels. Thus, the more deliberate the emphasis on disaggregating data by gender at different levels, the more likely gender-aware data will become consistently and systematically available.

In Liberia, there are significant gaps in the availability of gender-disaggregated data in agriculture and food security

The most relevant issues requiring measurement and adequate gender-disaggregated data are missing or inadequate include

- access to land and land tenure security,
- access to formal and informal finance,
- access to and use of extension services and market information,
- access to agricultural tools and use of agricultural and agroprocessing technologies,
- individual access to and ownership of means of information and communication technologies,
- sector labor-force participation and participation in agricultural and nonagricultural wage labor markets,
- gender division of labor between food and cash

crops,

- individual decision making in terms of crop choice, technology adoption, and cash spending,
- time use by agricultural activity, and
- intra-household resource allocation.

These gaps are the result of the absence of regularly scheduled specialty surveys and the gender-neutral (hence inappropriate) design of such instruments. It should be highlighted that the lack of data on use of publicly provided or subsidized services constrains the ability to conduct gender-disaggregated benefit- incidence analysis of agriculture sector spending.

Most of the data needed for gender-aware sector policy can be collected in comprehensive agricultural and rural surveys, but opportunities MUST be sought to gather relevant complementary data

There must be interaction among the institutions responsible for surveys, the Ministry of Agriculture, and the Ministry of Gender and Development, to ensure integration of relevant gender issues in data collection and subsequent analytical efforts. In addition, meaningful and comprehensive gender analysis of the rural economy requires agricultural and rural surveys to collect multi-level, multi-sector, and multi-period data.

It is important to track the gender of beneficiaries and providers of agricultural services and support programs as part of PRS monitoring

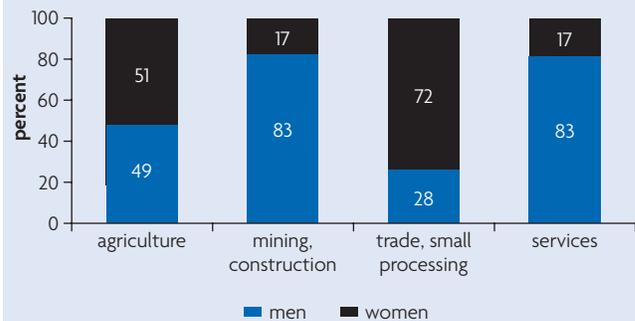
As women tend to organize around local farmers' organizations receiving recovery support, collecting information on these groups will require strengthening the PRS monitoring systems that track the beneficiaries of agriculture support programs. Tracking the gender of service providers, including public-sector extension workers, is also an important way to assess the extent to which gender issues are being systematically mainstreamed in the sector.

Women Farmers Play a Key Role in Liberia's Agriculture Sector

The success and sustainability of Liberia's economic recovery require the full engagement of all key players in the rural economy, especially the agriculture sector. The 2008 PRS recognizes the importance of the agriculture sector in revitalizing the Liberian economy. Evidence from the 2007 Core Welfare Indicators Questionnaire (CWIQ) survey indicates that women constitute over half of the labor force in agriculture, a sector that employs most of the country's labor force, predominantly in smallholder agriculture, and about two-thirds of the labor force in trade and commerce. Women are significantly underrepresented in mining, construction and services (figure 1). Most of the employment in rural areas is either in smallholder agriculture or in informal nonagriculture sectors (predominantly trading and small-scale processing), in which women outnumber men 51 to 49 percent and 56 to 44 percent, respectively. In high-profile, higher-paying, but smaller sectors, such as public and government services, cooperatives, and formal nonagriculture, men have much greater access (figure 2). These findings are consistent with previous evidence suggesting that while the majority of the population engages in agriculture, twice as many women as men (50 percent versus 25 percent) diversify into agroprocessing activities (Small Scale Gender and Agriculture Survey 2007). Women also carry out a higher proportion of the trade in rural areas, and women's associations and informal networks play a very important role in linking rural and urban areas (World Bank 2007b; GOL 2007). This suggests that policies and programs designed to revitalize the rural economy, including agricultural production, processing, and marketing functions, should take into account the role of women and women's groups in agricultural production and trading, a task that, given the evidenced informality, may be particularly challenging.

Women's role in agriculture is important, particularly in food crops, but generally there is a pattern of

Figure 1: Main Activity, by Gender of Individual Adults (percent of individual adults)



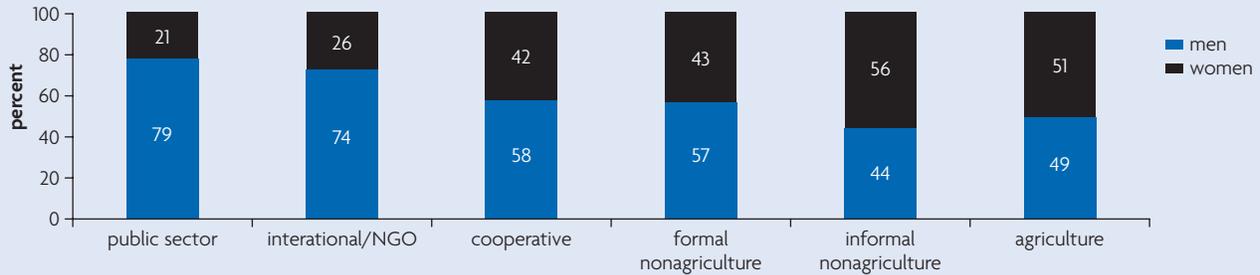
Source: CWIQ (2007).

division of labor that needs to be considered in any strategy to transform domestic agriculture. In addition to representing over half of the labor force in the agriculture sector, women are reported to produce over 60 percent of the agricultural output. They constitute a large segment of the labor force, particularly in the production of food crops (CFSNS 2006), where they represent 55 percent of the labor in noncommunal fields. Women's access to cash crops is considerably more limited, accounting for just over one-third of the labor (CFSNS 2006) [figure 3 – panel (a)]. An assessment of gender-specific roles in field activities (Ministry of Agriculture 2001), indicated that men are dominant in seemingly all tasks in major cash crops, and in food crops. Though women are dominant for most of the crop season, responsible for planting, weeding and harvesting, men are in charge of brushing, felling, clearing, and fencing—activities that require strength or skills that are not common among women [figure 3, panel (b)]. These data indicate a certain degree of gender specialization in crop production.

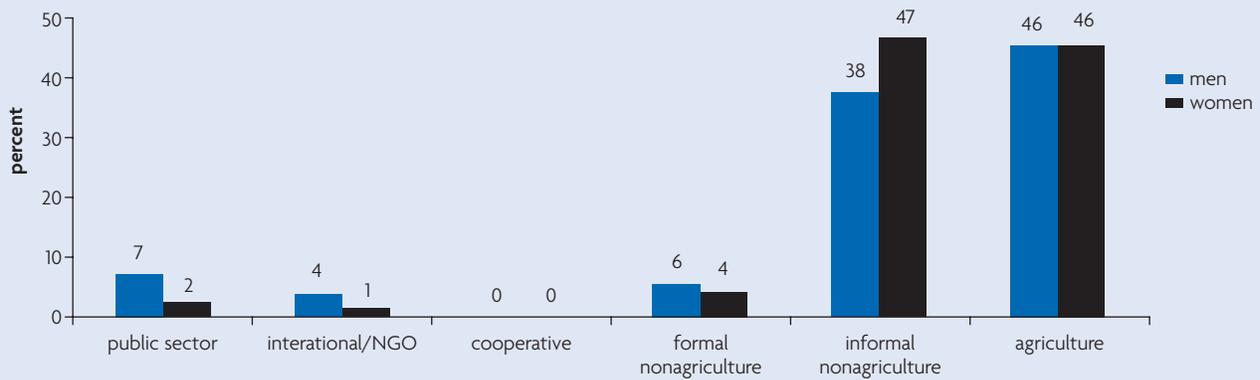
Women's economic contributions in Liberia can have important positive effects for household welfare and poverty reduction if investments are made

Figure 2: Sector of Employment, by Gender of Individual Adults (percent of individual adults)

(a) Gender within Sector of Employment



(b) Gender across Sectors of Employment



Source: CWIQ (2007).

in increasing farm-level productivity. Women-earned income in Liberia plays an important role in ensuring household welfare: it is spent on basic needs—food and education, for example—in higher proportions than male-earned income (GOL, UN in CFSNS 2006). Increased income-generating opportunities for women can have spillover effects in ensuring food security in the short term if it is used to improve education and nutrition outcomes, thereby contributing to break households’ poverty cycle. However, research by Glick and Sahn (1998) suggests that in some parts of Africa, when women work outside the home in income-generating activities, the household may reap more income only at the expense of the health of its young children. This indicates that it is important to increase women’s

output per unit of time worked at the farm. This will increase cash income from work while releasing time that can then be devoted to child care at home (World Bank, 2009b).

AGRICULTURAL SUBSECTORS IN LIBERIA: RELEVANCE FOR RURAL HOUSEHOLDS

Broadly defined, the agricultural sector comprises subsectors including food crops, cash crops, livestock, fishing, and forestry. In this section, taking the agricultural sector broadly, we look at the importance of crops, livestock, and fishing in rural households. Where data allow, we also look at the relative importance of men and women working in the sector, using

household-level data (FSNS 2008)—the only data available. In our analysis, we use the concept of gender dominance as an alternative and complement to the common approach of gender of headship.¹

Many Liberian households in rural areas grow some food crops. Among households that are female-dominated, there is a greater likelihood of growing those crops. Data from the 2008 CFSN indicate that about 85 percent of households in rural areas grow at least one food crop. The crops most grown are, in order of importance, rice (74 percent), pepper (65 percent), cassava (62 percent), okra (58 percent), bitter balls, and greens or leaves (57 percent). Overall, the proportion of food-crop growers is higher among female-dominated households (87 percent) than in male-dominated (81 percent) or gender-balanced households (86 percent). With little variation, this pattern is observed in individual food crops.

Rice is the key staple in Liberia. It is grown by over two-thirds of the population—mostly in female-dominated households. Currently grown by over 74 percent of Liberians, rice is the key staple crop in the country (CFSNS 2008). Among female-dominated households, 78 percent grow rice, while only 69 percent of male-dominated households do so.

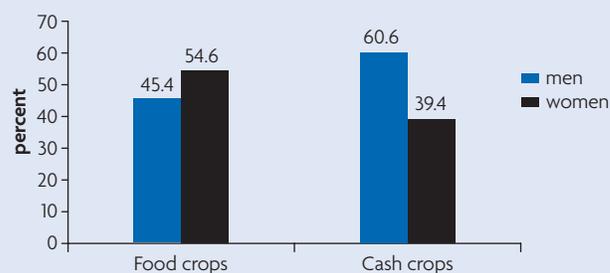
A significant amount of production takes place in the uplands.² A key production-level issue is the

1. Given the criticism associated with the simple use of self-reported female and male headship, we look at an alternative, complementary household level breakdown—gender dominance. This approach divides households into three groups: male-dominated, female-dominated, and gender-balanced. A male-dominated household is one in which there are more male than female adults (15–59 years of age). A female-dominated household has more female than male adults. Households with equal number of male and female adults are classified as gender-balanced. While the data indicate that only about 20 percent of rural households are headed by a female, the distribution of households by gender dominance is more balanced: about 25 percent male-dominated, 23 percent female-dominated and the remaining 52 percent gender-balanced. Overall, while female headship is relatively more common in female-dominated than in male dominated households, in both cases male headship predominates.

2. Data from the CFSNS (2006) indicate that 63 percent of households fully relied on upland rice techniques, while 17 percent opted for swampland; 21 percent used a mixture of both, although upland was also more common in this group.

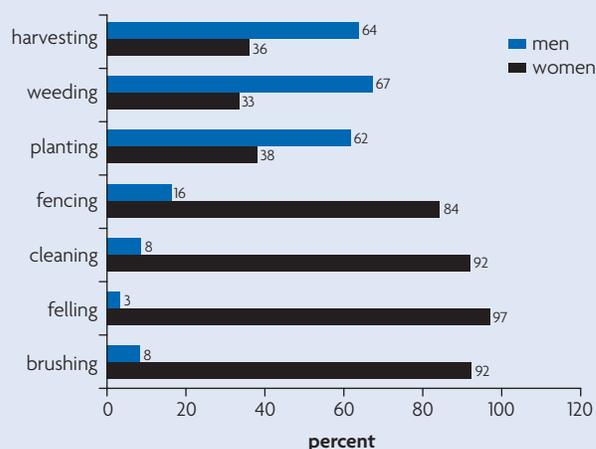
Figure 3: Gender Division of Labor in Food and Cash Crops

(a) Food Crops and Cash Crops, by Gender



Source: Food Security and Nutrition Survey (2006).

(b) Gender Division of Labor in Food Crops



Source: Ministry of Agriculture (2001).

great unused potential of producing in lowlands and swamps, where cultivation has proven to be more efficient and generates much higher yields.

Understanding and addressing the constraints faced by women rice farmers is important to promoting their expansion into more efficient modes of cultivation. One constraint is the under-use of fertilizers in rice production; incentives for farmers to use it are minimal because they are subsistence-oriented, not market-oriented—only about 7 percent of household production is sold, and the proportion of households that sell is only around 8.9 percent (9.3

percent in male-dominated households and 8.4 percent in female-dominated households). In contrast, 68 percent of the households, evenly distributed between male- and female-dominated, consume some of what they produce, and 23 percent retain some seeds. Female-dominated households tend to have slightly more months of rice stock (5.2) than male-dominated households (4.6).

Another constraint faced by rice farmers is the extremely low level of technical support received from public and private extension services. While the absence of support services by private institutions is understandable on economic grounds, public sector support is absolutely essential for meaningful progress. However, if yields increase and surplus becomes available, there will still be problems of storage and inability to process locally. Therefore, addressing post-harvesting issues is also important if growth in the sector is to be sustainable.³

Cassava is the second most important food crop in the country, with annual production estimated at 250,000 tons (CAAS-Lib 2007). It is grown by a high proportion of rural households, but marketed by only a relatively small number. Cassava is grown by about 62 percent of the population. About 53 percent of self-reporting female-headed households produce the crop and more than 62 percent of households dominated by female adults do so. The advantages of cassava are that it can be planted year-round; the time of harvest is not critical; and it can be stored in the ground for long periods. It is therefore very important for food contingency, especially before the rice harvest. It is often planted as a follow-on crop after upland rice is harvested. Cassava leaves are also an important vegetable for household consumption. Cassava is usually intercropped with maize and sometimes with sweet potato and pepper. Intercropping, however, creates competition for nutrients, which can be detrimental for growth, leading to tubers that are small and may be broken when harvested, reducing shelf life. Most cassava (about 60 percent of households) is produced for own consumption. According to CFSNS 2008, only about 22 percent of households report selling fresh cassava, and 17 percent report selling processed cassava.

Among the most binding constraints for women farming cassava is the lack of adequate tools for field

clearing, land preparation, and weeding. These are crucial where male labor is scarce and difficult or impossible to hire. Field production practices, including the timing of field activities and planting techniques, are also important determinants of yield differentials. Despite the advantage of being storable in the ground for a long time, the lack of local demand for raw cassava is a serious constraint, as losses can still occur if harvest does not take place in a timely way. Adequate storage before any processing are lacking and likely to lead to losses. Because cassava has a very high water content, it has a low value-to-weight profile, making transportation costs another serious constraint to accessing distant markets unless scale is achieved in production and marketing. Therefore, access to processing and marketing opportunities becomes a very important element in making the cassava subsector profitable for women. In terms of value addition, there are also missed opportunities arising from lack of knowledge about product differentiation and alternative uses of byproducts that could maximize market opportunities both inside and outside of the country.

Tree crops (rubber, cocoa, and coffee) make a very important contribution to the Liberian economy, accounting for 22 percent of GDP (2005) and representing significant export earnings. Rubber currently accounts for almost 90 percent of total exports³ and is a major source of formal employment, with approximately 18,500 workers on commercial rubber farms (CAAS-Lib 2007).

Nimba, Bong, and Lofa counties account for most of the tree crop production. These are grown in a range of production models: smallholder farms that produce food and export crops (predominantly coffee and cocoa, and more recently, rubber), plus oil palm (both for home consumption and for the market) and to a lesser extent coconut; commercial farms, including parastatal corporations such as Liberia Produce Marketing Corporation (LPMC), Liberia Cocoa and Coffee Corporation (LCCC), and Liberia Palm Products Corporation (LPPC); and foreign-owned concession plantations that produce rubber (CAAS-Lib

3. Timber exports, which made up 50–60 percent of the total exports until the early 2000s, have been eliminated due to sanctions.

2007). Data from the CFSNS (2008) on the broadly defined tree crop sector (beyond rubber, cocoa, coffee, and palm oil) indicate that about 64 percent of rural households grow at least one tree crop. The most common are, in order of importance (percent of households growing): banana (51 percent); pineapple (22 percent); cocoa (17 percent); kola nuts and paw-paw (15 percent); rubber and citrus (13 percent); palm oil (12 percent); and mangoes and coffee (10 percent). When compared to food crops, the difference in incidence between male- and female-headed households is larger here—67 percent to 53 percent—reflecting the predominance of male control.

Tree crops play a potentially important role in rural income generation in Liberia. As recovery takes hold and this sector becomes increasingly important in the country's economy, it will be important to promote actions aimed at reducing the barriers to access that women face. As plantation and outgrower schemes are the dominant forms of institutional organization in tree crop sectors, recovery strategies will need to pay special attention to women's participants to ensure increased access and a better share of the benefits of participation.

The livestock sector accounts for only an estimated 14 percent of agricultural GDP—far below its potential. The Food and Agriculture Organization (FAO) estimates suggest that there is slow growth in aggregate livestock numbers. The major livestock product chains are cattle meat, poultry, swine, and animal health (CAAS-Lib 2007). Household-based livestock farmers dominate, as was the case before the war. Data from the CFSNS (2008) indicate that at the household level, most households rear chickens and very little else. In effect, the proportion of households rearing livestock is, in order of importance: chicken (58 percent), goats (10 percent), ducks (9 percent), pigs (5 percent), sheep (4 percent), and cattle (1 percent). While diversification into livestock herding appears slightly more common among male-headed households, there is no particular dominance in diversification into herding when we compare male- with female-dominated households. Historically, traditional farmers use local, less productive animal breeds and basic techniques, have access to few inputs, and receive very few or no government support services. As rural incomes grow

and infrastructure is improved, opportunities should be sought to maximize growth in this sector, particularly in poultry and its value chains. Support to women's groups in agricultural production should take into account the potential of diversification into this subsector and women's integration into value chains.

Liberia's fisheries sector includes an established marine fishery involving industrial and artisanal fishing activities, an exclusively artisanal inland fishery, and aquaculture practiced in rural areas through fishpond culture. Fisheries provide about 3 percent of GDP. While small, this sector is locally important for communities with access to fisheries resources, providing employment for about 37,000 fishers and processors, and also has an important nutritional contribution in terms of protein intake. Before the war, most of the industrial fishing companies had adequate processing facilities and were exporting frozen crustaceans (shrimp) and small quantities of various frozen fish to Belgium, Greece, the UK, and the USA. Fish distribution and marketing from the coastal area to the interior of the country was through a system of depots and agents, but this activity ceased because of civil strife and the poor condition of the roads (CAAS-Lib 2007).

Artisanal fishery is estimated to provide a livelihood for about 33,120 fulltime producers and processors in both marine and inland waters. According to the CAAS-Lib (2007) about 61 percent of those are Liberian and 60 percent of the Liberians are women. The Liberians are mainly Kru and the foreigners are mainly Fanti and Popoe who migrated to Liberia from Benin, Ghana, and Cote d'Ivoire, with recent additions of Gambian and Senegalese fishers in Cape Mount County (marine waters). Malian and Fulani fishers operate in inland areas. According to the CFSNS (2008), 62 percent of rural households practice some kind of fishing. The most common types, in order of importance (percent of household practicing each type), are creek (50 percent), river (19 percent), swamp (5 percent), pond or lake (3 percent), ocean (0.5 percent), lagoon (0.3 percent), and artificial fish pond (0.2 percent).

Boosting artisanal fishery is likely to have the most immediate impact and will benefit a large number of Liberians, particularly women, who dominate fish marketing. At this point, fishing activity is

undermined by high operational costs, including fishing inputs (nets, related equipment and materials, outboard motors, fuel), in part because of high import duties on these items. Improved coordination among fishers can help secure economies of scale in purchasing these items. The provision and utilization of basic

fisheries infrastructures, such as fish handling and processing areas, storage facilities for processed products, potable water supply, ice and cold storage facilities, is lacking. Hygiene is poor, with frequent microbial contamination (CAAS-Lib 2007).

Overall, Agricultural Value Chains Face Enormous Challenges, But Paying Attention to Women’s Constraints is Particularly Important

Agriculture and agricultural value chains in Liberia face enormous constraints that affect men and women alike, but women are particularly hard hit and deserve special attention. Because of their productive and reproductive roles in the household, the community and the economy, women’s experiences of these constraints—which affect the recovery of domestic agriculture and agricultural value chains—are of particular significance. Here, we review general and crop-specific constraints in the context of the agricultural value chain, focusing initially on agricultural production and in value-adding activities. The presentation and the subsequent sections follow the conceptual framework illustrated in figure 4.

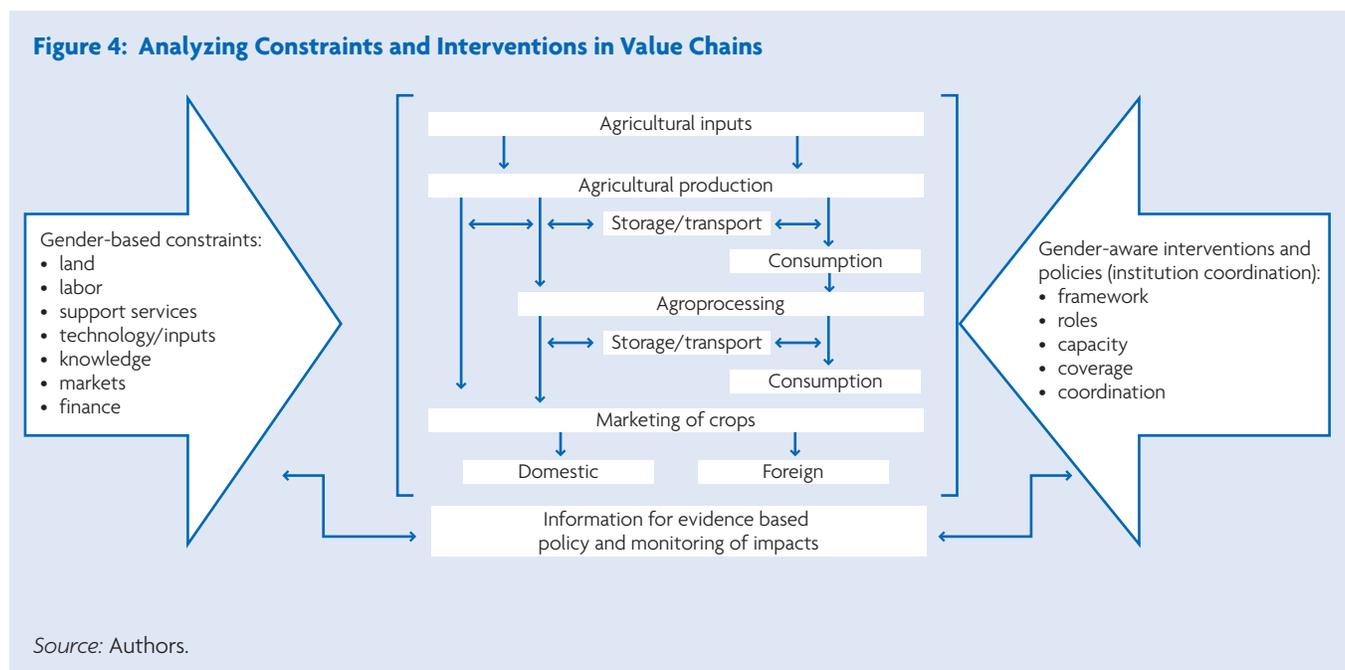
CONSTRAINTS FACED BY WOMEN AGRICULTURAL PRODUCERS

The constraints faced by women engaged in agricultural production affect household food and nutrition

security and their ability to generate income. As stated earlier, these constraints generally also affect male farmers. However, several key constraints to growth in agricultural production, particularly among women, can be highlighted, including

- access to production inputs and technology,
- access to land and land tenure security,
- ready access to labor resources,
- access to extension education and services,
- access to finance, and
- access to cash-crop opportunities.

Production inputs and technology. Widespread lack of access to production inputs and technologies limits farmers’ ability to increase productivity of all crops. Data from the CFSNS (2006 and 2008) indicate that despite progress over the past 2 years, women are still disadvantaged in the ownership of agricultural tools (65 and 49 percent in 2006 and 75 and 72 percent



in 2008) and use of productivity enhancing inputs. Women’s disadvantages are also found in access to quality seeds, with 13 percent of male-headed households and only 8 percent of female-headed households having access in 2006. By 2008, overall access had improved significantly, but women continued to fall behind men—65 of men and 58 percent of women had access (figure 5). Female farmers’ limited access to inputs and technologies makes them particularly vulnerable and less capable of benefiting from opportunities for growth. Generating and sustaining progress in access will therefore be beneficial for gender-balanced growth in the sector.

Access to land, control of land, and land tenure security. These are limited among women in Liberia—they own less land and hold fewer titles than men. Despite improvements in access to farming land by men and women in recent years, gender disparities in the amount of land that can be accessed and the degree of land tenure security appear to be lingering constraints. Comparative data from the CFSNS (2006 and 2008) indicate that the share of rural households with access to land has increased from 66 to 86 percent, with the gap between men and women shrinking but still persisting, from 68 and 56 percent in 2006, to 89 and 85 in 2008 [figure 6, panel a]. In terms of ownership and title holding, in 2006 only 16 percent of women owned land, compared to 33 percent of men; only 11 percent of women held a title compared to 20 percent

of men (CFSNS 2006) [figure 6, panel b]. By 2008, male-headed households accessed twice the amount of land accessed by female-headed households (8.1 acres to 3.9 acres) and cultivated a greater share as well (table 1). The persistence of this reality derives from a combination of economic, legal, and cultural factors (World Bank, 2007c). Despite amendments to the inheritance law that bring about a much greater gender balance by giving wives the right to a third of their husband’s property and equal rights to sons and daughters, enforcement seems to be weak and public knowledge very limited. These two limitations impede effective implementation and inhibit achievement of gender balance. Community norms and customary arrangements also continue to restrict women and favor men in access to community land (World Bank, 2007c). Evidence from other countries suggests that limited control over land and weaker tenure security

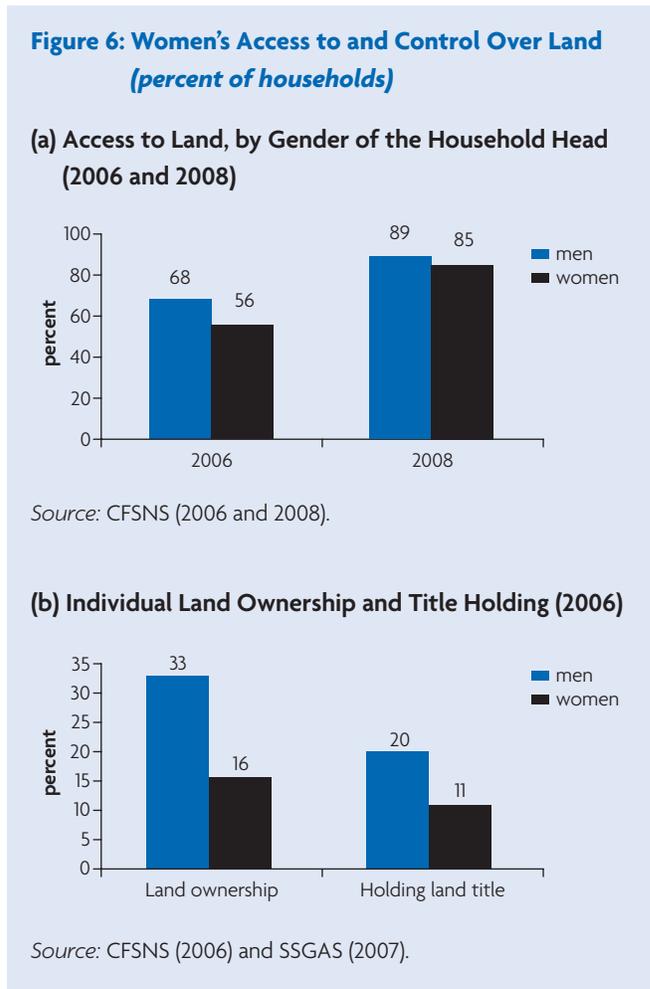
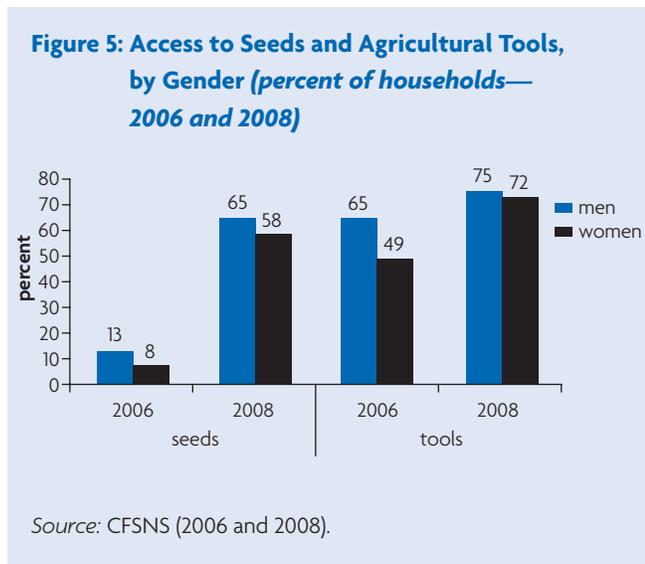


Table 1: Availability of Land and Labor in Rural Households (2008)

Access to Land and Labor	Gender of Household Head		All Households
	Male	Female	
<i>Land access and use</i>			
Households with access to land (percent)	89.3	84.9	88.5
Total area accessed (acres)	8.1	3.9	7.4
Area cultivated (percent)	51.2	45.9	50.3
Area cultivated (acres)	4.1	1.8	3.7
<i>Availability of household labor</i>			
Number of working age adults (15–59)	2.6	2.0	2.5
Number of male working age adults	1.4	0.8	1.3
Number of female working age adults	1.2	1.2	1.2
<i>Area available and cultivated per adult</i>			
Area available per adult (acres)	3.1	1.9	2.9
Area cultivated per adult (acres)	1.6	0.9	1.5

Source: CFSNS (2008).

reduce women's ability to invest in agriculture and expand beyond subsistence levels.

Availability of and access to productive labor resources. Lack of readily available household labor and inability to hire labor are crucial elements in an extensive expansion path that addresses the technology constraint. These prevent farmers from expanding beyond subsistence levels in food crops and from venturing into cash crops that are typically more demanding. Women-led farms and female-headed households typically have fewer economically active members—on average 2.0 adults, mostly female (1.2 females and 0.8 males) compared to 2.6 adults, mostly male (1.4 males and 1.2 females) in male-headed households (table 1). They also lack resources to hire additional labor to meet their farm's labor needs. The combination of smaller areas and labor scarcity results in relatively smaller areas cultivated per adult in female-headed households: 0.9 acres per adult compared to 1.6 acres per adult among male-headed households.

Access to extension services and education. Provision of extension services to farmers is extremely limited due to an aging, outdated, and underfunded extension

system with very poor coverage and limited ability to effectively reach farmers. For women farmers in particular, the prevalence of high illiteracy rates makes them harder to target through conventional means. Pre-war extension efforts for women were focused on nutrition and food security and neglected the commercial aspect of agriculture, an area of increasing importance in the post-war reconstruction efforts (UNMIL 2004).

Access to finance. For agricultural producers in rural Liberia, availability of finance is extremely limited. In most communities, even in urban areas, credit facilities are virtually nonexistent. Most credit is available through traditional community sources, for example, borrowing from friends or susu-clubs (World Bank 2007c). Evidence has indicated, however, that wherever microcredit institutions exist, women are significantly represented, which suggests that improving credit services in rural areas can have a significant impact on business development. Under current circumstances in Liberia, this is a second-order constraint that can be adequately addressed only as more basic constraints are overcome and the system becomes increasingly

more productive and market oriented—whereupon high returns can lead to likely high payback rates.

Lack of access to cash crops. A limitation that is a product of the above constraints is poor access to profitable cash crops. This prevents farmers from diversifying and limits their prospects for generating cash income. Two gender disadvantages converge here. On one hand, the rigid, gender-based division of labor in crop production results in women specializing in and controlling food crops, while men control cash crops and specialize in specific field tasks. On the other hand, many cash crops, particularly tree crops, are grown under vertically coordinated institutional arrangements to which women typically have limited access. This is the case with rubber and oil palm grown predominantly under plantation arrangements, and coffee grown under outgrower schemes.

CONSTRAINTS FACED BY WOMEN IN VALUE-ADDING ACTIVITIES

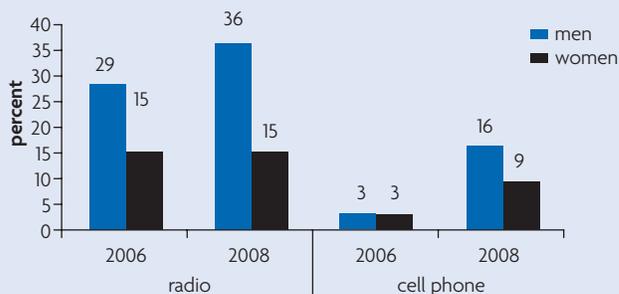
Women face two major constraints in accessing food markets and value-adding opportunities. First, despite women’s major role as food producers, their low productivity in agriculture prevents the generation of production surpluses and the prospects for sustained participation in food markets. Second, more generally, there is a set of constraints specific to post-harvesting.

Marketing infrastructure. Poor marketing infrastructure—roads, storage facilities, and market structures—make it difficult for farmers to sell their products in distant markets, to store produce for long periods to take advantage of higher prices in the hungry season, and to simply retain produce for food security or a consumption-smoothing strategy. As a result, farmers are forced to sell at harvest, when prices are low, and to face higher prices for imported substitutes to meet consumption needs later in the season. The lack of storage capacity causes substantial losses, estimated at 45 percent for cereals (Ministry of Agriculture 2006). The absence of well-established market structures (wholesale and retail) is an additional serious obstacle to boosting rural trade. While men and women are both affected by these constraints, this is likely a more

important potential income source for women than for men because on average, men can access cash opportunities more easily, particularly in the form of wage jobs off the farm, to make up for lost crop income.

Market information and access to communications devices that increase the likelihood of inclusion. Limited information about market opportunities and price levels in different markets limits transparency, prevents competition among smallholders, and reduces the degree of market integration in general. It is important to note that generating appropriate market information requires means that are likely to increase gender equality in access and use. For example, given the high illiteracy rates mentioned earlier, radio messages in local languages are more equitably accessible to both men and women than printed information requiring literacy. However, recent data indicate that between 2006 and 2008, radio ownership in Liberia increased from 28 to 36 percent among rural male-headed households, but has stagnated at about 15 percent for female-headed households. Cell phone ownership, which has enabled new channels for sharing market information in other countries, increased from 3 percent among both male and female-headed households in 2006 to 16 percent among male and 9 percent among female-headed households in 2008 (figure 7). Efforts to increase the availability of data on market opportunities should be complemented with education campaigns and a strategy to increase the ownership of communication devices among female farmers.

Figure 7: Access to Communication Devices, by Gender (percent of rural households)



Source: CFSNS (2006 and 2008).

Market support services, finance, and business training. The lack of marketing support services, finance, and business training for women farmers hinders expansion and market orientation. This is increasingly important as food systems evolve and more stringent quality standards are required throughout the value chains. As noted above, finance is an important aspect: As the economy becomes more diversified and oriented to markets, sustainable finance initiatives will become that much more important. It is imperative that innovative ways to deal with this issue be considered.

Opportunities for value-addition to crops. Women farmers lack access to opportunities to add value to crops through processing. There are two dimensions to this constraint. First, women generally engage in labor using technologies with high opportunity costs for their time because access to more capital-intensive technologies is very limited. Second, the relatively low quality of processed foods and the small scale on which processing can occur limit the ability of households to increase incomes through commercialization. Improving women's access to value-adding technologies (processing, packaging, storage) and market opportunities

for processed products become, therefore, important both in relieving pressure on labor allocation in the household and in promoting value addition and income diversification. In Liberia, this is particularly important for rice and cassava (see below), but opportunities need to be explored for other crops as well, through creative partnerships and initiatives.

As a result of these constraints, women are less able to invest in agriculture and to enter those agricultural subsectors and value chains with growth potential. The Diagnostic Trade Integration Study (DTIS) identified cash crops and agribusiness for export products such as rubber, palm oil, and other tree crops as sectors in which Liberia has a comparative advantage (World Bank 2009c)—sectors traditionally dominated by men. This is why, while in the long run it will be important to focus on women in cash crops, this policy memorandum focuses mainly on food crops and the more general and fundamental constraints that women farmers in Liberia face. Overcoming some of these more common constraints in the short term will allow women to more successfully participate in more profitable sectors in the medium to long term.

Government Interventions Need to Focus on Women's Key Constraints and Diverse Opportunities, and on Long-Term Sustainability

CURRENT RESPONSES TO WOMEN'S CHALLENGES IN THE CONTEXT OF THE PRS

The 2008 Poverty Reduction Strategy (PRS) recognizes the importance of the agricultural sector in the economy and the need to address gender issues in program implementation. In order to rebuild production and marketing capacity among smallholders, the PRS focuses on supporting provision of inputs, services, and marketing infrastructure through farmer-based organizations, including women's groups. The PRS underscores the importance of creating an enabling environment to support and expand women's roles and strengthen their contribution as a means to revitalizing the economy. This is to be accomplished by focusing on increasing their productivity and capacity; supporting and expanding their role in value chains; increasing their participation in nontraditional segments of the economy; and strengthening capacity for gender and economic policy analysis and formulation in key government institutions.

Several initiatives are currently in place to address gender issues in agriculture and rural development, but efforts need to be strengthened to ensure successful gender mainstreaming in implementation. The portfolio of predominantly donor-supported projects in the Ministry of Agriculture includes: food crops and productivity; value addition (post-harvesting); capacity building (institutional development); food crisis response; and tree crops. There are also projects in fisheries and livestock. Some other projects, such as the World Bank Agriculture and Infrastructure Development Project (AIDP), have important linkages with agriculture and rural development. In general, most of these projects do not have an explicit gender mainstreaming strategy. One exception is the program discussed below.

THE JOINT PROGRAM ON FOOD SECURITY AND NUTRITION (JP-FSN).

The Joint Program on Food Security and Nutrition (JP-FSN) is a comprehensive program that focuses on food security and nutrition and broader rural development issues in the context of the PRS, including addressing gender issues. The JP-FSN is implemented by the Ministry of Gender and Development (MOGD) and the Ministry of Agriculture (MOA), with technical assistance from the United Nations agencies. It recognizes the importance of taking the gender dimensions of food insecurity into account. A specific work plan for strengthening the gender mainstreaming dimensions of this program has been outlined in consultation with the MOGD, the MOA, and United Nations partners including the United Nations Development Program (UNDP), the Food and Agriculture Organization (FAO), the United Nations Development Fund for Women (UNIFEM), and the World Food Program (WFP). Specific funding and technical support is being provided to ensure that gender issues are effectively mainstreamed in this program. Interventions aimed at enhancing women's economic empowerment are selected from the program components, notably on institutional strengthening and support to women's production capacity and access to markets.

The activities under the JP-FSN are well suited to address some of the fundamental constraints faced by women in agriculture in Liberia. Activities oriented toward women focus on two components: (1) support to national leadership and coordination; and (2) support to women farmers for access to markets and production factors. Activities related to the first component are aimed at strengthening institutional capacity to address women's issues and improve monitoring and evaluation systems in the Ministry of Gender

and Ministry of Agriculture. The second component includes activities aimed at supporting (a) agriculture and food security, (b) increased access to markets, (c) access to processing and storage, and (d) development of farmer-based organizations. Table 2 provides a brief description of the activities included in the second component of the project, aimed at supporting production and post-harvesting.

The JP-FSN program implementation is a collaborative undertaking among the government of Liberia's Ministry of Agriculture, Ministry of Gender and Development, and development partners, particularly UN agencies. Essentially, support is provided to women's groups in Nimba, Lofa, and Bong counties. At

the agricultural production level, support in provision of basic inputs and technical assistance is provided by the Food and Agriculture Organization (FAO). In agroprocessing, it is anticipated that the FAO will also assist in supporting women's groups in rice mills and cassava graters, and provide technical training. In post-harvesting storage and marketing, UNDP will support markets rehabilitation and construction of drying floors and primary storage structures. The WFP, through links with its food distribution program, will help strengthen capabilities to produce quality food that can be successfully marketed. This approach will help increase women's marketing skills and increase the likelihood of future successful participation in

Table 2: Description of the Joint Program—Food Security and Nutrition

JP-FSN Component	Description
Agricultural (crop, livestock, and fish) production and food security	These activities focus on promoting food production diversification and increasing the ability of households to produce protein-rich foods, such as beans and peanuts, as well as fish and livestock products, by establishing poultry houses and fish ponds. Additional interventions are aimed at addressing low agricultural productivity issues by training women in seed production technology and management, fertilizer use, and management of field activities.
Access to agricultural markets	Efforts to improve farmers' access to markets are focused on improving agricultural marketing facilities (market structures), linking women to markets through local purchases of food under food assistance programs (for example, school feeding) managed by the WFP, for example, P4P (Purchase for Progress), and training women groups in business and marketing skills.
Access to processing and storage	These activities seek to address the lack of access to processing and storage facilities and the lack of knowledge in post-harvesting management by providing processing equipment for cassava and rice and training in their use. Construction of storage facilities for women-grown products is also under consideration.
Development of farmer-based organizations	Interventions in the JP-FSN are focused on women's groups as a way to minimize transactions costs, maximize impacts, and make interventions sustainable over the long run. The main interventions consist of training in organizational development and promoting the establishment of links and integration with other activities in the program. As interventions under the program are organized around women farmer groups, this component is of particularly important relevance.

Source: JP-FSN Project Document.

open food markets. The activities under the JP-FSN are being implemented sequentially.⁴

To enhance the JP-FSN’s ability to address the main challenges faced by women, emphasis needs to be placed on following good practices in implementing those interventions and scaling up. The JP-FSN interventions are very relevant to the key pressing constraints women face in agriculture and rural development in Liberia. Several key principles can be followed to help maximize their positive effects—including learning from successful current and past interventions to scale up efforts.

GENERAL PRINCIPLES AND SPECIFIC RECOMMENDATIONS TO SUPPORT INTERVENTIONS

Agriculture and rural development interventions under the PRS need to address the constraints faced by women, considering the efforts already underway with the implementation of the JP-FSN. The purpose of such intensified efforts is to fill the gaps in mainstreaming gender issues in agricultural and rural development activities. This policy note proposes a set of five general principles, and recommends specific actions to support interventions in agriculture production, processing, and marketing (box 1 summarizes the key points).

FIVE PRINCIPLES TO SUPPORT INTERVENTIONS

First, be demand-driven and engage the private sector. Liberia’s post-conflict environment is characterized by the failure of virtually all markets: inputs, products, labor, and credit. As this keeps interventions from being completely driven by market forces, support from NGOs and projects are necessary in the early stages. As the country transitions from conflict to development, it is important to find ways to make interventions more sustainable. First, it is critical that

4. It has so far been focused on the distribution of seeds and agricultural tools, and some extension assistance to women’s groups. Activities are also taking place, in coordination with WFP and FAO, linking women’s groups with food assistance programs and identifying viable cassava processing technologies and cassava product development.

women’s needs are taken into account and can be met in a sustainable way—not with one-off or temporary solutions. Second, strengthening the participation of private sector firms whenever possible will be crucial. Fostering women’s entrepreneurship is important for sustainability as well. Many roles can be sustainably performed by women’s businesses. All programs need to have clear sustainability and exit strategies; building women’s capacities and engaging the private sector more broadly are crucial in this process.

Second, promote crop and income diversification. To sustain food and nutrition security and raise crop income and ensure farm productivity gains are achieved, rural households must plant a variety of crops. Some will contribute to meeting food and nutrition security needs; others must be included to bolster women farmers’ market orientation. In each instance, a careful assessment needs to be made to find the best possible crop combination. Adding value through processing and moving away from crops grown solely to mitigate risk should also be encouraged. Women face heavy time demands because they have to deal with multiple household tasks. Any income diversification that increases demand on them for household labor must be coupled with efforts that also reduce the burden of other domestic tasks, particularly daycare for children, fetching water and firewood, and so on. A successful initiative that reduces the time women spend on these chores will make income diversification strategies more likely to succeed.

Third, look for viable opportunities in tree crop sectors. As women have not traditionally been active in tree sectors, developing a better understanding of the barriers to access to contract farming, for example, should be given top priority as a means to identify actions needed to allow women to increase their participation in a profitable way. The PRS suggests that all concessions be subject to mandatory contract farming as the predominant institutional arrangement. If that requirement can be enforced, or at least promoted as an overall strategy to maximize small-holder participation, it would be advisable to consider an affirmative action policy to ensure that a specified subset of contract farmers be women. In addition, to preserve household food security, contract farming arrangements need to include support to participating

Box 1: General Principles and Recommendations for Supporting Interventions in Value Chains

General Principles

- Sustainable interventions need to be demand-driven and to engage the private sector.
- Increasing farm productivity, reducing women's burdens, and promoting income diversification are crucial.
- Improving women's access to cash crops is fundamental to sustaining gains in the long term.
- Support to women's groups needs to recognize the strengths of individual men and women.
- Scaling up successful programs and initiatives will ensure broad-based benefits for rural women.

Specific Recommendations

Women as Agricultural Producers

Seed production and security

- Identify the right seed-supply response
- Use formal as well as informal systems
- Promote women-based seed multiplication and seed bank technology

Improved access to cash crops

- Provide incentives for private sector to work with women in outgrower schemes
- Encourage public-private partnerships to address constraints that limit participation

Provision of gender-aware extension

- Consider roles of women as producers and market participants
- Use extension packages and delivery methods that meet women's needs
- Rely on Farmer Field Schools (FFS) methodology, in coordination with FBOs for extension delivery, with:
 - Women's participation and representation
 - Reliance on farmer-trainers and informal communications (peer farmers)

Improve access and land tenure

- Promote information on women's rights to own land
- Support production in larger areas through promoting productivity-enhancing technologies and reduction of the burden of household chores

Women in Value-Adding Activities

Finding relevant and profitable opportunities

- Promote roles as processors and marketers
- Find new products and women-friendly technological processes
- Promote business training to strengthen management skills, profit and market orientation
- Facilitate links of farmers' groups with wholesalers and processors

Establishment of marketing infrastructure

- Rehabilitation of farm-to-market roads through incentive systems such as cash or seeds for work involving women
- Gender-aware storage technology: construction and dissemination
- Strategic establishment of market structures with women-friendly service facilities

Market information

- Establish a market information system collecting and sharing data on product availability and prices
- Educational campaign on accessing and using market information (radio, cell phone, and so on)

Improve access to finance

- Promote savings and credit clubs among women's groups engaged in marketing
- Promote access to formal credit by well-established associations

Supporting the Development of Farmer-Based Organizations

Sustainable support for women to be successful players in value chains needs to

- be based on solid value-chain analysis, through gender lenses,
- preferably, provide support to a network of women's groups, not isolated groups,
- be comprehensive and multi-faceted, especially in
 - technical production capacity,

- access and control of financial and physical assets,
- dedicated market access to women, and
- capacity development to strengthen self-esteem and leadership capabilities
- be focused on assistance that strengthens market orientation and profit motivation, and
- addresses the issue organizational development costs and have sustainability and exit strategies.

Source: Authors.

farmers for food crop production through technology packages, including seeds and chemical inputs where appropriate. As in other African countries, important technology spillovers to nonparticipants in contract farming schemes are likely to occur (Benfica 2006; Arndt et al. 2009), generating broad-based benefits.

Fourth, target capacity building for women through farmer-based organizations. The scale needed to generate sustainable agricultural business units is important in any intervention aimed at supporting women farmers, processors, and traders. While joint production and direct support to women’s groups is an important aspect of such interventions, knowledge transmission that allows individual households to increase their productivity in individual fields (sometimes farmed jointly with males) needs to be encouraged and be made a crucial intervention component.⁵ In fact, increased household food production has a direct contribution to own-food security, and when surpluses are generated, marketing them through farmer groups helps increase scale and reduce transaction costs, with mutual benefits to individual farmers and farmer associations alike. For interventions aimed at adding value through processing, for example, business linkages with male farmers should be encouraged as a way to ensure that scale in processing is achieved and sustained.

Finally, identify and promote strategies for scaling up. The relevance of some interventions is unquestionable on economic grounds. An example is the provision of seeds and tools and expansion of extension coverage at this stage of development. For such interventions, ways need to be found for rapid scale-up—to the extent possible, through private sector engagement. For other interventions, such as those that are integrated, covering various nodes of the value chain simultaneously, an assessment must be done and recommendations issued on the best ways to scale up. One example of such initiatives is the Pilot project,

5. This principle is crucial, as it is widely known that women play an important role as agents in family crop production, both in individual fields and in adding to the labor in male-dominated or /controlled fields. Allowing increased knowledge to fit meet the needs of those family-based production units, will be crucial to increase productivity and overall household welfare.

a Results Based Initiative (RBI) implemented by UNIFEM and the ICRW in Nimba County under a partial grant from the World Bank’s Development Grant Facility (DGF). The initiative supports women from the Ganta Concern Women’s Group (GCWG) in production and processing of cassava for sale in the local market and eventually beyond. This initiative targets different nodes of the value chain and multiple aspects in each, ranging from crop production, cassava processing technologies, enterprise management, commodity storage, and marketing. If successful, pilot initiatives like this can be scaled up.

MAXIMIZING INTERVENTION IMPACTS

This section highlights key areas where special attention is needed to maximize the types of intervention contemplated in the JP-FSN—and their potential to be incorporated in other programs or initiatives. The focus is limited to selected aspects of interventions supporting women’s agricultural production and value addition, and relying primarily on supporting collective action. It draws on lessons learned from best practices proven effective in other countries (see boxes 2 and 3).

Issues on institutional coordination and capacity are discussed in the next section. Following are specific recommendations to support interventions.

SUPPORT TO WOMEN AS AGRICULTURAL PRODUCERS

In supporting women farmers to improve their productivity and increase production levels, four areas of intervention are prioritized:

- Sustainable provision of productivity-enhancing inputs and means of production, particularly high-yielding seeds, agrochemicals, and tools;
- Improved access to cash crops;
- Effective delivery of extension messages for knowledge and technology dissemination; and
- Improved access to land and tenure security. As agriculture becomes more commercialized, finance plays a more prominent role as well.

Promoting and sustaining well-functioning seed production and distribution systems that recognize the roles, weaknesses, and strengths of women farmers are crucial aspects of a successful agriculture and food security support strategy. At the current stage of agricultural development in Liberia, one of the crucial areas of support to agricultural production and sustained food security and crops diversification is the development of seed production and distribution systems. Seed security (sustained access to reliable supplies of quality seed) is an important component of food security and crop diversification. As women are important food producers in Liberia, seed security is a matter of high priority. There are two important issues to keep in mind in designing seed interventions:

^a *Understanding the nature of the demand for seed for specific crops is important to determine the appropriate seed-supply response.* For instance, if farmers are searching for new varieties, the solution will entail the introduction of new seeds; if men and women are already purchasing hybrid

seeds, strengthening the commercial supply can be the response; if seed is available but there are quality and management problems, then the solution requires specialized seed enterprise or extension advice to improve seed management at the farm level.

^a *As formal and informal seed systems may focus on different crops and varieties, and even serve different clienteles, interventions need to see them as complementary and take advantage of their relative strengths.* Women farmers can make important contributions to the growth of small-scale seed enterprises. Experience from Malawi (box 2) indicates that if interventions are well targeted, they can maximize the benefits to women. Furthermore, the formal seed system can improve the quality and functioning of the food system by implementing capacity-building activities that address the needs of both men and women—for example, by strengthening community seed banks, and improving selection and storage (see experiences from Brazil and India in box 2). To be sustainable, seed

Box 2: Sustainable Seed Production and Distribution

Small-scale seed production enterprises

The formation of small-scale seed enterprises—that is, farmer seed enterprises—meets two objectives: to distribute and promote sustainable, modern crop varieties and to establish a regular source of “clean” traditional or new varieties of seed. Experience indicates that a certain level of resources (such as labor and land) is required to manage farmer seed enterprises successfully—a requirement that could exclude or discourage women from participating. Some alternative strategies may be better suited to the limited resources controlled by the poor, including women.

ActionAid's 1995 Malawi Smallholder Seed Development Project uses two seed production strategies. First, less-poor farmers are encouraged to produce certified seed and operate independently, though they still face marketing problems that need to be addressed. Second, poorer farmers (many of whom are women) are organized into community groups to produce and distribute seed on a communal basis, using group revolving funds. The project's concentration on the poorest households has ensured that many more group participants are women, who also perceive greater advantages in belonging to groups than men do. About 70 percent of group members overall are women, and over 80 percent of the groups are composed entirely of women. Women's groups are better organized and their revolving grants for seed production have higher repayment rates than those of men's groups. Women get higher seed yields, generate better savings, and sustain more cohesive groups. The second strategy has provided encouraging evidence that women's skills and scarce resources can be mobilized to strengthen seed systems and enhance family seed and food security.

(continued)

Box 2: Continued

Promoting Community Seed Banks

Community seed banks help meet the complementary goals of improving local food security and recognizing and maintaining the contributions of local crop diversity. Traditional seed varieties frequently cannot be obtained in the market. Instead, rural people exchange seed within their villages or with people from neighboring villages. These exchanges are important for seed supply and diffusion. Establishing a community seed bank empowers local people to select and multiply seed of traditional crops and varieties of their choice. By facilitating access to seed, especially among women, seed banks often encourage and sustain cultivation of traditional varieties and household seed security. Two examples of community seed banks follow.

- In Paraiba, Brazil, frequent droughts and farmers' small landholdings often prevent families from producing enough grain to use as food and also save as seed for next year's crop. Genetic diversity has also been eroded by the preference for commercial rather than local seed. Commercial varieties are grown to meet market demands and also used distributed by government programs. Community seed banks help to reverse this trend through collective efforts to grow and supply seed. In addition to conserving biodiversity, the banks help farmers become or remain self-reliant by supporting the timely provision of seed.
- In Jeypore, India, interested households contribute a specific quantity of seed to the community seed bank. Seed is mixed with powdered neem (*Azadirachta indica*) and karanja (*Pongamia pinnata*) leaves to protect it against pests while stored. The village committee selects the seed bank management committee of three men and three women, who share responsibilities. About 200 farmers (men and women) are actively involved in the program. The seed bank primarily stores seed of 15 traditional paddy cultivars, along with some millet, oilseed, and vegetable varieties. The bank records the names and quantities of seed required by needy farm families and distributes it. The involvement of women has strengthened both the bank and the overall seed exchange system. The women perform vital tasks such as periodically monitoring seed quality. In 2000, about 700 kilograms of seed were handled.

Apart from their impact on food security, seed banks can improve socioeconomic conditions in rural communities, especially the status of women. By establishing self-help groups to operate seed banks, women can become more active in decision making and more self-confident, and can communicate more easily with government officials or outsiders. Men can become more supportive of women, and conflict between men and women can be reduced.

Source: World Bank, IFAD, FAO (2008)

interventions need to be supported by a seed policy that creates a framework allowing public and private resources to be used to meet specific demands while fostering an enabling environment for the synergistic development of formal and informal seed systems. Such an environment includes issues such as secure land tenure rights for women farmers and improved access to resources and technologies that women require as producers.

For long-term, sustained income growth among women, it will be important to increase their access to cash crops by encouraging private sector partnerships and policy incentives and by addressing constraints to access and performance. As indicated earlier, women lack access to cash crop production opportunities. In part, this limitation can be attributed to other constraints that women face, such as more limited access to land and technology, and cultural norms that may prevent

them from engaging in plantation and out-grower schemes—the institutional arrangements most often associated with cash crops. Under the PRS, expansion of these schemes has been identified as a top priority. Finding ways to improve women's access to them will be important in order to maximize their share of the benefits of growth over the long run. From a policy standpoint, there are several ways to meet this goal. First, in the short run, government can provide incentives (fiscal, for example) to encourage large-scale private sector growers and processors to contract women's groups, and evaluate their performance compared to traditional, mostly male-dominated schemes. Second, special efforts can be undertaken to address the human capacity constraints faced by women that limit access and performance in these sectors. Some of these can be implemented through well-established extension interventions, as outlined below.

Gender-aware extension is the key vehicle through which the role of women in agriculture can be transformed with positive impacts on access to, and performance in, profitable opportunities. For that to happen, extension interventions need to focus on some key issues.

- *Consider the roles of women as economic agents who operate in productive and commercial areas.* It is important to recognize women's current and potential roles in the rural economy—as producers of food for both subsistence and sale and as producers of food crops and processors of agricultural products. That said, extension messages for both men and women need to focus on crop production as well as other activities that help strengthen their market participation in crops and beyond. For example, in addition to improving planting techniques and the use of productivity-enhancing technologies, information on accessing market information (radio, cell phones, and so on), and on storage techniques, financial literacy, processing technologies, and more will be key to maximizing economic benefits for rural women.
- *Adjust extension packages to reflect women-specific needs and use methods of delivery that fit*

those needs. In addition to ensuring a diversified package, it is important to recognize the specific issues that may contribute to men's and women's different abilities to successfully access and utilize extension information. For example, certain types of messages can be delivered at the household site, while others will be better delivered in central fields. The gender of the extension agent also can influence receptivity in many contexts (Saito and Spurling 1993), and local norms may be important in still other contexts. Increasing the number of female agents to work with female farmers is important. Where this is not possible, training male agents in gender-specific issues relevant and important for female farmers is necessary.

- *Farmer Field Schools (FFS) will be the cornerstone of successful gender-sensitive extension delivery.* Farmer Field Schools are already an effective model and methodology for participatory extension in Liberia. Their continued work with farmer-based organizations (FBOs) and implementing partners will be important. Furthermore, expanding the set of gender-sensitive messages in extension packages (informed by agricultural research), and finding formal and informal mechanisms to expand coverage will be critical to enhancing their effectiveness and expanding their reach to all potential beneficiaries. Actions may include the following.
 - *Strengthening women's participation and representation in FBOs.* Female farmers' participation in FBOs can be broadened. Efforts also need to be made to ensure that women farmers are increasingly represented in instructional and decision-making roles and as first-line extension agents.⁶ This increased participation will help ensure that women farmers' concerns are sustainably taken into account in the implementation of extension programs relying on FFS.

6. Women's representation has been successfully ensured in other programs, for example, through District Committees (UNDP Community Based Reintegration and Recovery Program) and Project Management Committees set up by the Liberian Agency for Community Empowerment.

- *Sustainable knowledge dissemination—use of farmer trainers and informal communication through peer farmers.* In a resource-constrained environment, promoting FFS as an extension approach that achieves significant coverage over a long period of time while relying on official/formal trainers may together constitute a tremendous fiscal challenge. Such an approach has been proven to be a non-sustainable proposition (Quizon and Feder 2001). In Liberia, it will be critical that the system relies continuously on farmer-trainers, that is, FFS graduates who in turn train other farmers in their respective areas, and on informal communication among farmers. Evidence from other countries (Rogers 1983; Benfica 2006) suggests that in the case of specific technological innovations, such as high-yielding grain varieties or use of readily available fertilizers, key knowledge on using the technology is shared through informal farmer-to-farmer communications.

Improving women’s access, ownership, and control over land (security of tenure) can potentially contribute to greater investments in the land and increased productivity and welfare. Women have a disadvantage in access to, ownership of, and control over land resources in Liberia. As indicated earlier, the root causes are economic, demographic, and cultural. Gender analysis of land issues is needed to develop a better understanding of those disadvantages in order to address them. However, from what is currently known, some practical actions can be recommended. First, there is a need among the rural population for better dissemination and knowledge of current laws to expand on the benefits already in place. Second, some of the impediments to planting larger areas are lack of labor to perform both household and agricultural duties and lack of technology. This indicates that efforts to reduce the burden of household chores by improving access to water, electricity, and firewood, and improving access to productivity-enhancing technologies, are a necessary factor in increasing women’s use of larger plots of land. The rationale is that if other access problems are less severe, or are reduced or eliminated, increased

land and labor productivity in the household will result in welfare gains.

SUPPORT TO INCREASED ACCESS TO AND BETTER EFFICIENCY IN VALUE ADDITION

Taking advantage of opportunities to participate in value chains through value-adding strategies is an important way to ensure that women farmers benefit from economic growth. As indicated earlier, a key set of the interventions under the JP-FSN is aimed at strengthening women’s participation in value chains through marketing and processing. Such interventions target primarily the cassava and rice subsectors. While these appear to be the most logical sectors to tackle in Liberia at this point, this policy memorandum highlights aspects that can also be considered in identifying opportunities and maximizing benefits of participation in other value chains. There are three major ways to expand opportunities for value addition.

- Upgrade women’s roles in value chains to include processing and marketing roles that previously may not have been a major strength for women in the chain. This is essentially the case for rice and cassava in Liberia, where value addition is being pursued. In supporting this expansion of women’s roles, it is important to bear in mind the multiple constraints or limitations that prevented them from participating in the first place. Designing support programs that address such issues is therefore essential. These typically include access to technology and meeting post-harvesting needs—including storage, handling and bookkeeping, and market linkages.
- Develop new products to become active members of new value chains or participate in market niches for differentiated products in current value chains. Opportunities of this sort need to be explored. A potentially viable option lies in the cassava crop, where a wide range of differentiated products can be produced and markets can be found. Opportunities in other agricultural products need to be exploited. If women farmers are given access to technologies and market linkages, they may extract important benefits in those niches.

Box 3: Supporting Agricultural Value-Adding—Good practice examples

Developing Rice Products in the Philippines

In the Philippines, rice production by hand was labor-intensive and time-consuming for women. Raw material was limited, because the glutinous rice varieties that women grew produced poor yields and little land was devoted to cultivating it. In addition, sales of glutinous rice contributed only marginally to household income, so it was not a high priority for plant breeders. After talking with women farmers, the Women in Rice Farming Systems project developed a study that included both formal surveys and household- and market-based action learning with women and men farmers. The results demonstrated the importance of glutinous rice—sold in its processed form as a specialty product. It provided a high percentage of women's incomes, enabling them to fulfill their responsibilities for key household inputs and food management. A new, early-maturing, higher-yielding variety was developed that compared favorably in taste and eating quality with local varieties, and de-hulling machinery was developed in collaboration with the women processors. This equipment improved labor efficiency and reduced the drudgery involved in hand pounding. The value-added gross return was 70 percent.

Improving Olive Oil Production and Direct Marketing to Consumers

Women entrepreneurs in Chefchaouen, Morocco, traditionally produced olive oil using highly labor-intensive, unsafe methods that resulted in substantial losses of oil. Once the oil was bottled, the women waited for customers to come to their door. The olive oil was highly acidic and posed potential long-term health risks to consumers. UNIDO introduced a mechanical olive oil production unit using locally available technology. Women producers learned to harvest the olives, produce healthful oil, and control its quality and acidity. Training sessions helped them improve their marketing skills. The women are now building facilities where they will install new equipment. They have been assisted in purchasing packaging materials, registering trademarks, and preparing labels and promotional materials, and they are selling their oil from kiosks in town instead of from their homes. A strong network of local support institutions has been built up with the backing of the Ministry of Industry, Commerce, and Communications, as well as a network of trainers in production technology and in business management and marketing. In total, UNIDO has taught over 300 women and 50 men to produce better, safer, olive oil that commands a higher price. Productivity has increased by up to 40 percent. Five other groups joined the first association, resulting in a federation and the natural development of a cluster. Selling through kiosks in town has helped sales increase by at least 85 percent. Overall earnings have as much as doubled.

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- Finally, increase efficiency in established interactions in the value chains by facilitating access to technologies, training, and markets. Such efficiency can be gained by financing the initial stages of value-adding strategies, when affordability is a determining factor for women's access to technologies and markets. In other cases, organizational and marketing capacity may be needed; these may require setting up groups and supporting training efforts to address the key issues. Such efforts should also include facilitation of linkages among farmers groups, wholesalers, and processors.

Gaining and sustaining such efficiency through interventions aimed at reducing the various constraints faced by women is the ultimate goal of programs and policies. Box 3 presents examples of interventions in the Philippines and Morocco where interventions helped women significantly improve their benefits within value chains. It also describes the Six-Step Market Extension Tool originally used in Bangladesh, which can play an important role in interventions in Liberia.

Establishment, maintenance of marketing infrastructure, and dissemination of storage technology. As noted earlier, Liberia's infrastructure, including roads,

Box 3: Continued***The Six-Step Marketing Extension Tool***

The marketing extension (ME) process is about raising incomes through education and subsequent complementary services. ME interventions include marketing education (creating a better understanding of the process, the market and its demand, products, and terms of services); coordinating (mobilizing groups, organizing events, and launching processes); and forging business linkages (introducing buyers and sellers and facilitating new trading relationships). The ME process works with CBOs (community-based organizations). The six steps in the process are designed to empower community members to identify market opportunities and plan how to exploit them:

- Analysis of resources, including embedded skills, resources and equipment, existing marketing arrangements, and knowledge;
- Selection of target products by conducting cost studies, analyzing alternative markets, and selecting location(s) for market research;
- Market research—a task force holds discussions with traders on potential products in terms of prices, quantities, quality, and market opportunities;
- Analysis of research findings on potential profitability of alternative products;
- Product choice(s)—the strategic selection of products for marketing development; and
- An action plan that clearly delineates activities, responsibilities, and timing for the selected products, setting out what will be done, when, and by whom.

Source: World Bank, IFAD, FAO (2008).

storage, and marketplaces present serious limitations that undermine the development of value chains. While the challenges are enormous, well-targeted efforts can deliver significant payoffs, especially if rebuilding efforts are made in the context of gender-friendly interventions that will generate cash income in the short term and create conducive conditions for trade and sustainable rural incomes in the medium to long term. Work needs to be done in three key areas: (1) rehabilitation of strategically targeted farm-to-market roads through incentive systems such as cash or seeds for work involving women. (2) rehabilitation of market sites in strategic locations where assembling (wholesale) trade is more likely to be profitable. This effort needs to be well coordinated with the existing women's groups, and facilities need to accommodate women's needs for day care, water, and sanitation facilities. (3) improving storage technology at both commercial and household levels. The process needs to emphasize appropriate technology, skills, and knowledge sharing on their use and maintenance.

Market information needs to be developed in a gender-sensitive way to allow women farmers to take full advantage of emerging and growing opportunities. Information is one of the key constraints for market development in general. Simple systems that provide regular information about product availability and market prices across space, as well as information on transport costs and prospective buyers, make a tremendous difference to individual farmers and farmers' groups in rural markets. The medium or media of delivery and the regularity with which it is released are key. Use of printed bulletins can be effective at the upper levels of the chains, particularly among formal trading firms in urban areas. For the more informal urban and rural producers and traders, including the women's trading networks, the use of radio for information dissemination will be more appropriate, especially if it is done in local languages and timed to coincide with known large audience hours. The increase in cell phone use can also be exploited for the purpose of information dissemination.

To be sustainable, access to finance needs to accompany, or even follow, the resolution of more fundamental constraints that affect production, processing, and marketing. While finance is commonly referred to as one of the major barriers to women's effective and profitable engagement in agriculture and trade in Liberia (World Bank, 2009b, GOL and UN in CFSNS 2006), more fundamental constraints that affect returns can be an obstacle to sustainable credit provision. It is therefore advisable that finance interventions be integrated into broader intervention contexts where farmers are clearly oriented to the market, and not made in an isolated fashion. In effect, well-established farmers' groups with clear linkages to markets and better management capabilities should have facilitated access to formal credit; for less-established groups and individuals, efforts need to focus on overcoming more fundamental constraints while relying on more informal sources of finance, such as indigenous savings and credit clubs.

SUPPORTING THE DEVELOPMENT OF FARMER-BASED ORGANIZATIONS

Successful and sustainable support to collective action requires providing the necessary technical support while promoting a business- and market-oriented culture. Support to women's farmer groups is at the core of the

JP-FSN. Significant efforts are being made to support these groups, many of which are well rooted in the collective action culture of Liberian women and integrated in the context of nationwide efforts (Ministry of Gender and Development 2008). Efforts need to take advantage of these structures. In order for interventions to be successful and sustainable, some key gender issues need to be considered.

- Support needs to be based on a solid value-chain analysis—through a gender lens—that identifies and influences the flow from supported groups to other key players in the value chains. This approach requires proven ability in women's groups to cooperate with and understand the requirements and needs of other players.
- To reduce transaction costs and increase economies of scale, support needs to be provided whenever possible to a network of women's groups, not to isolated groups. The network approach is more effective. It broadens reach, and possibly the per-unit costs of delivering products, and enhances the potential for networks to become effective conduits of information, as well.
- Support to women farmers to engage in chain partnerships needs to be comprehensive and multifaceted, providing key support in (i) technical production capacity, (ii) access and control of

Box 4: Collective Action and Market Linkages for Women Farmers

Milk Collection in Bosnia and Herzegovina

A women's producer association, established in 2003 in Tesanj, Bosnia and Herzegovina, provides members with a milk collection network to help them to market surplus milk. The purpose was to secure markets for milk products and increase members' household incomes. Subsequently the producer association started to help members access credit and equipment. The women purchased more animals from the Livestock and Rural Finance Development Project credit line to increase their production. The project empowered these traditional milk producers to become more active within their communities, make greater financial contributions to their households, and thus improve their family and community positions. Women's active membership in the producer association enabled them to improve their knowledge of, and skills in, livestock production and marketing. Marketing milk created new jobs, increased incomes for rural men and women, and increased livestock production. Today, the producer association's vision is to expand activities and marketing to vegetable production and processing, thus providing services to a larger number of agricultural producers.

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Box 4: Continued***Upgrading Women’s Poultry Farming in Afghanistan***

Income generation and food security are critical concerns in Afghanistan, where women have experienced discrimination and exclusion from access to public resources for many years. Village poultry production is a culturally acceptable practice for women that addresses household food security and income generation. Poultry provide scarce animal protein and can be sold or bartered to generate income. The Rebuilding Agricultural Markets Program and Food and Agriculture Organization sponsored a project that developed an innovative organizational structure enabling village women to receive training in poultry production, obtain production inputs, and access markets on a sustainable basis. A network of women links village producers, through district Poultry Producer Groups, to the provincial center, where there is a technical resource base that supplies inputs and market opportunities. By November 2005, the 3-year project had trained 21,364 women in poultry management and organized 850 producer groups. The training and organizational development have helped women increase their household income; about 2,545,281 eggs are produced each month, valued at an estimated \$311,032 (which comes to \$20 per producer per month). Project results demonstrate that village women can be organized into an effective marketing network that links women poultry producers to urban markets.

Chain Partnerships with Women Coffee Growers in Nicaragua and Peru

Located in Jinotega, where 65 percent of Nicaragua’s coffee is grown, a fair trade and organically certified coffee growers’ cooperative (the Sociedad de Pequeños Productores Exportadoras y Compradores de Café SA [SOPPEXCCA]), has received special recognition for a program called Las Hermanas (“The Sisters”) coffee. This coffee is grown entirely by the cooperative’s 148 women (its total membership numbers 450). In 2006, Peet’s Coffee featured Las Hermanas in retail stores across the United States. SOPPEXCCA is led by a woman and has been critical to helping its affiliated women farmers gain titles to land and to produce, manage, and market their own coffee. To promote income diversification, SOPPEXCCA also introduced its coffee farmers to organic honey production for sale in local markets. It has also facilitated a primary education campaign and constructed or repaired many local schools.

Café Femenino is a women-owned brand of coffee grown in northern Peru and sold in U.S. and Canada as fair trade. Its goal is to foster change in the socioeconomic order. Their coffee is supplied free to local women’s shelters in Canada through Women in Crisis. Its Café Femenino Foundation helps improve local perceptions of women’s role by supporting programs and projects that generate income that women control. Forums focus on building self-esteem and leadership. With the help of organic and fair trade premiums, much progress has been made to improve conditions in coffee-growing areas, including better nutrition, improved sanitation, new wet-processing mills, and many miles of new roads.

Sources: Gender in Agriculture Sourcebook, World Bank, IFAD, FAO (2008).

- physical assets and control of financial assets, (iii) dedicated market channels for women (box 4) in both input and output markets, and (iv) capacity development to strengthen self-esteem and leadership capabilities.
- Interventions need to focus on strengthening women’s roles in partnerships, and their profit and market orientation.
- The issue needs to be addressed of who bears the costs of organizational development that enables women’s farming groups to become economically sustainable. It is recommended that development partners, NGOs and government institutions coordinate with farmers’ groups and other value chain participants on a viable sustainability and exit strategy.

Success in Addressing Gender Issues in Agriculture will Require Well-Defined Institutional Roles, Better Capacity, and Good Coordination

In order to sustainably maximize the ability to support interventions that address gender issues in agricultural and rural development programs and policies, emphasis on the institutional framework is critical. This requires clarity on institutional roles and mandates, emphasis on technical and implementation capacity, and improved coordination and information sharing among relevant institutions. These three areas need to be developed concomitantly in order to support the design, implementation, and monitoring of a sustainable set of interventions. The discussion below, focused on each of these three areas, aligns with the recommendations in the previous section.

INSTITUTIONAL ROLES AND MANDATES

As interventions in the agriculture sector involve a wide range of institutions at the central and county levels, having a clear definition of the vision and roles of individual institutions and avoiding overlaps is an important efficiency requirement. There needs to be a clear definition of the roles of the agriculture sector institutions that play both core and supporting functions, and of those of the international and private sector institutions with which they interact. Clarity on issues of distribution of responsibility between central and local government institutions, and of responsibilities outsourced to the private sector and community organizations, is an integral part of the institutional framework that underpins an effective agriculture sector strategy.

Institutional roles need to be well defined in supporting women as producers and value chain participants, as well as in generating data, sharing and disseminating information. Regarding the two specific recommendations in the previous section (support to women in agricultural production or post-harvest

processing and value addition), it is clear in tables 3 and 4 that many institutions are relevant.

The Ministry of Agriculture (MOA) plays a central role in this framework of institutions. It also compiles and maintains other information necessary for the overall evaluation of sector performance, including intrasector budget allocations relevant to the gender-aware benefit incidence analysis discussed earlier. Another important government agency is the Ministry of Planning and Economic Affairs (MPEA), which also has a key role in collecting data for monitoring the PRS in all areas, a number which are focused on agriculture and rural development. Regarding collection of gender-disaggregated data in the agricultural sector, it is noteworthy that the MOA, through its Planning and M&E statistics unit, should be the primary institution responsible for the design of sector surveys. A key role in data collection is also played by LISGIS as the official data collection agency. Tables 3 and 4 summarize, across the main areas, the responsible institutions and their respective roles.

The Ministry of Gender and Development has an important advisory and coordination role to play in agriculture sector issues relating to women's empowerment. Given the large number of agriculture organizations, the question of the appropriate role for MOGD in this technical area becomes relevant. As the government agency charged with advising government on all matters affecting the advancement of women, MOGD's role in supporting the role of women in the agriculture sector, as part of the overall poverty reduction effort, is potentially significant. The MOGD should not directly participate in the implementation of gender-relevant programs, but, instead, play a coordination and advisory role to ensure that the proposed efforts are gender sensitive and that enough capacity is available in participating institutions.

Table 3: The Role of Institutions in Supporting Women as Agricultural Producers

Areas	Responsible Institutions	Institutional Roles
Seed production and security	CARI	Development of technologies including new seed varieties, whose development takes into account gender roles in the farming sector.
	MOA-Extension	Experimentation with and dissemination of technologies to farmers, using models that promote broad-based access for men and women.
	FAO	Technical support and sharing of lessons from experiences worldwide.
	FBOs	Organizing farmers in groups for seed production and multiplication (community) seed banks.
	MOGD	Promoting and supporting gender integration in the farmer-based models for seed production and multiplication, including support to field supervision at the county level.
	Private input suppliers	Supply of commercial seed and other inputs.
Improved access to cash crops	Private concessions	Contract farmers for outgrower schemes, including women farmer groups.
	MOA-Extension	Partner with private sector in delivering extensions to farmer groups in technologies relevant to their success in cash crops and tree crops.
	Ministry of Finance	Assessment of the feasibility of fiscal incentives designed to prompt concessions to give special preference for contracting with women groups in cash or tree crops.
	National Investment Commission (NIC)	Work with new investors and concessions to influence, through an incentive system, their propensity to work with women farmers.
	MOGD	Support the MOA and ensure that best efforts are made to integrate gender considerations.
Provision of gender-aware extension services	CARI	Delivery of improved seed varieties and other productivity-enhancing production and post-harvesting technologies that are gender-sensitive.
	Extension-MOA/FFS	Organization and execution of gender-sensitive delivery of gender-sensitive extension packages of services using Farmer Field Schools (FFS) model.
	NGO Partners	Supporting the onsite delivery of gender-sensitive technology packages to farmers.
	FAO	Technical support and sharing of lessons from experiences worldwide, and support to capacity building to other institutions engaged in service delivery.
	FBOs	Organizing participating farmers in FBOs to reduce transaction costs and ensure that scaling up can be accelerated.
	MOGD	Support the MOA and ensure that best efforts are made to integrate gender considerations.
Improved access and land tenure	MOA and Land Commission	Dissemination of current laws on inheritance to the rural population to increase their knowledge of the legal rights to which women are entitled (one-third of the land owned by the husband) and of equal inheritance rights for sons and daughters.
	FBOs	Helping disseminate the law among its members to ensure that they benefit.
	Civil society and NGOs	Advocating for women farmers’ rights.
	MOGD	Supporting the Ministry of Agriculture in this process to ensure that gender considerations are adequately integrated.

Source: Authors.

Table 4: The Role of Institutions in Supporting Women in Post-Harvesting and Value Addition

Areas	Responsible Institutions	Institutional Roles
Finding relevant and profitable opportunities	WFP	Connecting with farmers to supply quality food to “food aid” programs, including school meals; identifying appropriate and sustainable processing technologies for women.
	MOCI	Supporting business registration processes for trade and industry, as well as for domestic suppliers of machinery.
	FAO and IITA	Dissemination of processing technologies and local capacity building in their use and maintenance.
	FBOs	Organizing farmers in interventions to ensure sustainable access to markets.
	MOA and CARI	Identifying appropriate post-harvesting and processing technologies to be disseminated to farmers, including women’s groups.
	Private sector	Partnering with smallholder farmers in contracting schemes that strengthen their linkages to markets (traders); provide processing equipment and maintenance services (industrial equipment producers); and buy agricultural production for value addition in processing (processors).
	MOGD	Interacting with all institutions to ensure that gender considerations are at the core of interventions.
Establishment of marketing infrastructure	MOA	Identification of agricultural surplus areas and prioritization of farm-to-market roads; provision of seeds for payment in seed for work programs.
	MPW	Management of farm-to-market road rehabilitation through food-, seed-, and cash-for-work programs.
	WFP	Storage technology identification and dissemination, provision of technical assistance and scaling up of efforts.
	UNDP	Supporting the construction of drying floors and primary storage structures; rehabilitation of markets.
	FBOs	Organizing farmers in groups to participate in schemes related to infrastructure investments (food-, seed-, and cash-for-work).
Market information	MOA	Leading the establishment of a system for crop market information with adequate coverage of market transaction levels and locations.
	MOCI	Supporting the extension of the market information system to processed products; supporting data collection and dissemination.
	LISGIS	Providing technical support in data collection, management, and dissemination.
	FAO	Providing technical support and capacity building in setting up sustainable market information systems.
	Cellular networks	Setting up messaging system for sharing market information among cell phone users.
	Radio broadcasters	Broadcasting of market information at the most appropriate times and creating relevant programs addressing agricultural marketing issues.
Improved access to finance	Microfinance institutions	Making credit available to farmers through alliances with women FBOs.
	FBOs	Organizing farmers in groups to promote access group lending using peer pressure.
	Private concession—input credit	Engagement in outgrower schemes to provide input credit to farmers, including groups involving women farmers, and extending to the provision of finance where appropriate.

Source: Authors.

INSTITUTIONAL TECHNICAL AND IMPLEMENTATION CAPACITY

Building institutional capacity in the areas of policy, programming, and monitoring of gender issues in agriculture and rural development is necessary to encourage development of skills commensurate with respective institutional mandates. Capacity-building needs to focus on supporting the implementation of programs that are currently planned, as well as on programs designed to meet PRS-specific targets in agriculture and rural development in the context of the economic recovery pillar. Given their important mandates, the Ministries of Gender and Development and Agriculture should be the primary targets of capacity building efforts.

The Ministry of Gender and Development needs to strengthen its capacity and knowledge of gender issues in agriculture. Specific areas to be targeted include skills to guide the policy dialogue, to coordinate the integration of gender issues into agriculture and rural development programs, and to ensure that gender-disaggregated monitoring and evaluation are adequately integrated into programs. While the MOGD has a sufficiently diverse structure, with units designed to deal with issues such as Women's Empowerment and Monitoring and Evaluation (under Planning and Administration), and Policy Research (under Research and Technical Services), there is no unit or team within the ministry with specific focus on agriculture issues. The importance of the agriculture sector in the economy as a whole, and in the livelihoods of women in agriculture-producing areas, requires the ministry to dedicate qualified staff resources to oversee gender issues in agricultural programs. Initial emphasis needs to focus on capacity at the central level, to ensure effective interaction and proactivity with other relevant institutions, particularly the Ministry of Agriculture and subordinated institutions. It will also be important to ensure that at the decentralized level, MOGD County Gender Officers are adequately versed in gender and agriculture issues, as activities in the sector will remain important for years to come.

The Ministry of Agriculture also needs skills to contribute on a continuous basis to the design, implementation,

and monitoring of gender-aware programs in agriculture and rural development. As the main implementing government agency of agriculture programs, the MOA needs strong capacity to successfully design, implement, and monitor programs that acknowledge and address gender disparities in the sector. This capacity is necessary at the central as well as decentralized level levels, including in research and extension functions.

The MOA's Planning and Monitoring and Evaluation unit can contribute to integrating gender issues in the agricultural sector development strategy, and ensure the collection and analysis of gender-disaggregated data. The Department of Planning at the Ministry of Agriculture needs to strengthen its capacity in the area of gender analysis, planning, and programming. As the PRS and the FAPS already incorporate gender considerations, the department needs qualified staff with gender analysis skills to assist with program implementation. Capacity building efforts will also contribute to improving the collection of gender-relevant agriculture sector data and improve the MOA's analytical capacity in this area. As the ministry rebuilds its Monitoring and Evaluation Information Systems (World Bank, 2009a), this improved capacity should enable collection of gender-disaggregated data over time (as part of agricultural surveys), and targeted analysis of gender issues in the sector. These capacity-creation efforts should be coordinated with the Liberia Institute of Statistics and Geo-Information Services (LISGIS), ultimately responsible for the regular collection of data.

The Central Agricultural Research Institute (CARI) and the Agricultural Extension Service, MOA's technical and service delivery arms, also need to be targeted with gender-aware capacity building to better identify and disseminate gender-sensitive technologies. As previously mentioned, extension and research will play a critical role in the successful implementation of the agriculture, food security, and rural development programs prioritized in the PRS. While rebuilding capacity in these services, it will be important to incorporate gender considerations ranging from the composition of trainers and trainees to actual program content at both national and decentralized levels. Extension

staff needs training in the importance of gender issues and effective communication of the implementation strategy to complement their technical skills (World Bank, 2007c). As previously noted, the Farmer Field Schools model will play a key role in this process. Therefore, gender analysis capacity and gender awareness will have to extend to concerned stakeholders. For example, there is a need to strengthen CARI's ability to develop and adjust agricultural and agro-processing technologies to improve access by women. Efforts to develop its ability to use gender-sensitive product development processes can be strengthened by exchanges of experiences with other, similar countries. To ensure success, training programs for CARI personnel have to be well coordinated with those for extension staff responsible for disseminating the research products to farmers.

INSTITUTIONAL COORDINATION

Given the multiplicity of institutions at both central and county levels involved—in program design, implementation and evaluation, in data collection and information dissemination—institutional coordination is essential to ensure the efficient delivery of services. How well the knowledge is used and the designated roles are played will depend on how effective the coordination among the involved institutions is. It will therefore be important that appropriate coordination mechanisms are agreed upon for each of the designed interventions. Among the key issues to be considered are institutional leadership roles and information sharing mechanisms. Specificity in establishing institutional leadership roles contributes to avoiding duplication of efforts and to maximizing effectiveness in delivering services. Thus, for example, as far as collection of gender-disaggregated data is concerned, the respective

roles of the MOA Planning Unit and LISGIS need to be clarified, and, together with MOGD, all three institutions need to agree on appropriate channels for information sharing.

The Joint Program—Food Security and Nutrition illustrates the importance of the clarity of mandates, institutional capacity, and collaboration and coordination. Under this project, implementation is undertaken collaboratively by the government of Liberia (MOA and MOGD), and development partners, particularly United Nations agencies. Support is provided to women's groups in Nimba, Lofa, and Bong Counties. At the agricultural production level, support to provision of basic inputs and technical assistance is provided by the Food and Agriculture Organization (FAO). In agroprocessing, it is anticipated that FAO will also provide assistance to support women's groups through the provision of tools and labor-saving devices (rice mills, cassava graters), combined with technical training. In post-harvesting storage and marketing, support will be provided by United Nations Development Program (UNDP) in the construction of drying floors and primary storage structures, and in rehabilitation of markets. Efforts to strengthen capabilities in producing quality food that can be successfully marketed will be undertaken by the World Food Program (WFP) through links with its food distribution program. This support is intended to help increase women's marketing skills and increase the likelihood of future successful participation in open food markets. In addition, the program involves staff from the decentralized extension services of the Ministry of Agriculture and the County Gender Officers. The current implementation of the JP-FSN presents a good opportunity to review institutional roles, identify gaps, and strengthen coordination efforts in this and other programs.

Improved Gender-Aware Data Collection is Key for Evidence-based Policy Design, Implementation, Monitoring, and Evaluation

Effective gender-aware policies and programs in agriculture and food security, and monitoring and evaluating their impacts, depend on the availability of data at different levels. Analysis in the previous section has demonstrated the inadequacy of recent data to fully characterize the gender dimensions of the agricultural sector. This limitation makes it difficult to get a full account of the roles of women and men in agriculture and their contributions to food and nutrition security, agricultural and rural income growth, and poverty reduction.

DATA REQUIREMENTS FOR EFFECTIVE IMPLEMENTATION

What are the data needed to formulate better gender-aware policies and programs in the medium to long term? Relevant data can be produced in the context of specific projects that focus on specific monitoring indicators. These data need to be more sustainably generated in the broader context of the national statistical system's planned data collection activities. These activities typically generate indicators to be tracked over time and are normally representative at the sub-national and national levels. The more sensitivity there is to gender issues at different levels, the more likely gender-disaggregated data will become consistently and systematically available.

There are significant gaps in the availability of gender-disaggregated data in agriculture and food security. Liberia's 2007 Gender Needs Assessment identified major gaps in the availability of gender-aware agriculture and food security data, access to key services and resources, labor markets, entrepreneurship, and education (World Bank, 2007a). In this note, we focus specifically on data for agriculture, food security, and rural livelihoods policy making. The most relevant issues for which measurement is required and adequate

gender-disaggregated data are missing or inadequate include the following:

- Access to land and land tenure security, particularly individual title holding and size of land area owned and cultivated by crop;
- Access to formal and informal finance;
- Access to and use of extension services and market information;
- Access to agricultural tools and use of agricultural and agroprocessing technologies;
- Individual access to and ownership of information/communication technology;
- Sector labor force participation and participation in agricultural and nonagricultural wage labor markets;
- Adequate estimates of the gender division of labor between food and cash crops;
- Individual decision making in terms of crop choice, technology adoption, and cash spending in farming households;
- Gender differences in time use for different agriculture activities; and
- Intrahousehold resource allocation.

These gaps arise from the lack of regularly held specialty surveys, and more importantly, from the inappropriate design of such instruments when they are held. This is a missed opportunity. Table 5 summarizes the essential information required for each issue and identifies the most recent sources. The table indicates where data collection efforts need to be improved to ensure better evidence on women's roles and the gender impacts of interventions.

Lack of data on the use of publicly provided or subsidized services constrains the ability to conduct gender-disaggregated benefit incidence analysis of agriculture sector spending. The structure of public spending in

Table 5: Data Sources for Agriculture and Related Issues in Liberia

Area	Type of Information	Latest Sources	Degree of Completeness and Content Issues
Access to land, control of land, and land tenure security	Access to land	CFSNS 2006 CFSNS 2008	<ul style="list-style-type: none"> Lacks field level data and individual responsibilities at that level
	Land ownership	CFSNS 2006 CWIQ 2007	<ul style="list-style-type: none"> Lacks field and individual ownership details
	Title holding	CFSNS 2006	<ul style="list-style-type: none"> Needs clarity beyond the household level—data on individual title holder
Finance	Area owned and cultivated	CFSNS 2008 CWIQ 2007 AG Survey 2008	<ul style="list-style-type: none"> Not assessed at field/crop level, or with links to individuals in the household Agricultural Survey 2008 only collects area cultivated and covers few crops (rice and cassava)
	Access to formal finance	SSGAS 2007	<ul style="list-style-type: none"> Not covered in many surveys, well attempted in this small survey; needs to be collected at individual level
	Access to informal finance	SSGAS 2007	<ul style="list-style-type: none"> Provides information on expenditures by gender of the head, but not on allocation of finance
Allocation of finance	None		<ul style="list-style-type: none"> Not collected systematically
Extension	Use of extension services	None	<ul style="list-style-type: none"> Not collected systematically
Tools and technology	Ownership and use of agricultural tools	CFSNS 2006	<ul style="list-style-type: none"> Collects detailed data on tools but 2008 survey lacks disaggregated tools data No individual ownership/use recorded
Asset ownership	Use of chemical inputs	AG Survey 2008 CWIQ 2007	<ul style="list-style-type: none"> Information only available for rice; important to collect data on more crops
	Household assets	CWIQ 2007	<ul style="list-style-type: none"> Detailed account of assets, but ownership recorded only at the household level
Labor force	Individual level information on occupation and timer use data	CWIQ 2007	<ul style="list-style-type: none"> Identifies main jobs and activities, but lacks detailed time-use data
Intrahousehold behavior	Individual level data on ownership of assets, land, responsibilities and decision making	CWIQ 2007 CFSNS 2006	<ul style="list-style-type: none"> Surveys identify individual members and record key characteristics, but not ask detailed questions on ownership, individual income, and allocations and decision making in general CFSNS 2008 fails to collect complete household roster information
Agricultural production information	Agricultural production data, preferably at the field level, to allow for productivity estimates by crop	CWIQ 2007 AG Survey 2008	<ul style="list-style-type: none"> CWIQ collects data on home consumption and sales of household production that can indirectly be used to estimate production, but no field-specific information collected AG Survey 2008 is limited to the collection of data on cassava and rice production
Consumption data	Household consumption expenditure data and spending decisions in the household	CWIQ 2007	<ul style="list-style-type: none"> Detailed household consumption data collected for the household as a whole. No individual-level data collected for spending and consumption patterns

Note: Agricultural Survey 2001 not included. We did not manage to get a copy of the questionnaire.

Source: Various household survey questionnaires.

agriculture is important in determining the impact of sector efforts on women farmers. Each dollar invested in the sector will affect male and female farmers differently, depending on the extent to which each group uses the agricultural public goods and services provided or subsidized. Sector-disaggregated expenditure data (by region and type of expenditure) and household-level survey data on individual use (incidence and intensity) of public goods and services by gender provides that assessment. This use of benefit incidence analysis (BIA) is important in assessing the public sector spending patterns most likely to address the constraints on women farmers—optimizing the allocation and maximizing the impact of additional

public resources on household food security, agricultural growth, and poverty reduction (see box 5). BIA is an important input to sector Public Expenditure Reviews (PER). Data on use of publicly-provided or subsidized inputs and services should be collected at household-, crop-, and field- levels to assess the gender impacts of public sector spending patterns, which will help inform fiscal policy.

Most of the data needed for gender-aware agriculture sector policy can be systematically collected in comprehensive agricultural and rural surveys, but opportunities need to be sought to gather relevant complementary data in other surveys as well. Comprehensive agricultural surveys that can be regularly

Box 5: Gender-Disaggregated Benefit Incidence Analysis of Agricultural Public Spending

Benefit incidence analysis (BIA) is a standard analytical tool for assessing how public spending is allocated and who benefits from it among men and women. It consists of linking information on subsidies and transfers from the public sector with the distributional profile of utilization of such public goods or services by users. In the agriculture sector, it is generally related to spending in research, extension, and subsidies on productivity-enhancing inputs. Depending on the data available, gender-disaggregated benefit incidence analysis can take many forms, from simple comparisons between male and female beneficiaries to more complete and sophisticated econometric analysis. This tool is very important to sensitize policy makers to gender inequalities as well as provide valuable information to guide them in making effective use of public resources—an important task in a country like Liberia that is transitioning from conflict to growth and development. Complementary analysis can highlight the causes of those inequalities and inform recommendations on how to address them. The benefit incidence is calculated in three steps.

- Estimate of the unit cost of providing a particular service (or subsidy on inputs), calculated as the total amount of the reported public spending divided by the total number of units provided.
- Computation of the number of units consumed by smallholders who are identified as users, multiplied by the unit costs.
- Aggregate estimates of benefit incidence obtained for the various groups on the basis of variables such as gender of the recipient, welfare status, and the like, with results presented on a percentage basis to illustrate the distribution of benefits.

Agricultural Extension in Cambodia. BIA of publicly-provided extension services showed that women make up the great majority of farmers in Cambodia, but are a minority among beneficiaries of public services in extension, accounting for only about 20–30 percent of extension program benefits. Agricultural extension and research programs do not focus on the activities of women farmers, even though men and women specialize in different production tasks. Analysis has found that safety concerns prevent women from accessing extension services that often require traveling to district centers, and the predominantly male extension staff finds face-to-face communication with women difficult. As a result, men were found to benefit disproportionately from the government-provided extension services. This analysis contributed to creating better follow-up and the development of realistic gender-disaggregated targets for reaching beneficiaries of agricultural extension.

Sources: World Bank 2001; Schneider 2008; Ruiz Abril & Ofosu-Amaah 2009.

held are the backbone of a good agriculture data collection and analysis system aimed at supporting policy and programming. However, there are opportunities to collect gender-sensitive data on household expenditures and nutrition issues using other standardized instruments, including the Core Welfare Indicators Questionnaire (CWIQ), the Comprehensive Food Security and Nutrition Survey (CFSNS), and the Demographic and Health Survey (DHS). While these tend to be standardized surveys, efforts should be made to ensure that their design allows for rich gender content to complement knowledge generated by the agricultural surveys. Whenever possible this can be done using samples or sub-samples that overlap across surveys. Continued interaction among the institutions responsible for those surveys, the Ministry of Agriculture and the Ministry of Gender and Development, is essential to ensure the integration of such issues in data collection and subsequent analytical efforts.

Meaningful and comprehensive gender analysis of the rural economy requires that agricultural and rural surveys use multi-level, multi-sector, and multi-period data collection approaches. The following approaches should be taken into account for comprehensive data collection that ensures that appropriate and relevant data are generated to capture the different dimensions of women's participation and benefits, and the impact of their participation on the economy.

Multilevel data. Data collection efforts (surveys) need to gather information on the community, the household, and the individual, and on fields and crops, as well.

- Community surveys should include information on the gender aspects of community leadership, social and economic networks (such as associations), and customs and norms, including those related to inheritance in land access. Information on the availability of infrastructure and key economic information, market prices, for example, is also important.
- At the household level, in order to improve understanding of intrahousehold dynamics, surveys need to look beyond the household as the unit of observation, and focus on individual-level data.

Relevant issues to focus on include women's use of agricultural technology, access to irrigated land, access to credit and services, engagement in cash and food crop production, and the extent to which agricultural decisions are made by men, by women, and jointly. Crop coverage needs to be comprehensive and not limited to rice and cassava, the major crops. These data will provide a better understanding of household involvement in the production and marketing of cash crops and tree crops—crops with long-term prospects, with implications for improved gender balance in agriculture in the future.

Multi-topic data. For a better understanding of the rural economy as a whole, gender-disaggregated data collection needs to be expanded to nonfarm issues, including operation of nonfarm enterprises and engagement in farm and nonfarm wage employment. In essence, it is recommended that data are collected on the time allocated by all household members to all economic activities. Within agriculture, careful labor allocation information should be collected at the crop and field level for individual tasks at all stages of production, value addition, and marketing.

Multi-period data. For a better understanding of the dynamics of the economy, rural agricultural surveys should include a multi-period (panel) dimension, that is, the sample households are periodically revisited to assess how individual households are being affected by policies and programs over time. The inclusion of a panel dimension adds some complexity and cost to the exercise, but evidence from other countries suggests that the additional benefits in terms of resulting richness and usefulness of the findings outweigh those costs.

It is important to track the gender of beneficiaries of agricultural services and support programs as part of PRS monitoring. The PRS monitoring system effectively tracks the beneficiaries of support programs in agriculture and value chain development, assessing seed, fertilizer and livestock distribution, provision of finance, beneficiaries or users of rehabilitated fish ponds and distributed agricultural processing equipment. A substantial amount of gender-disaggregated information

has already been collected; efforts need to be strengthened to maximize this opportunity to obtain data for analysis of the gender impacts of public spending. As women tend to organize around local farmer organizations, it will also be important to strengthen the emphasis on information on these groups as recipients of recovery support. Furthermore, tracking the gender of services providers, including public sector extension workers, is an important way to assess the extent of

gender mainstreaming efforts among both providers and recipients. Continued collaboration between the Ministry of Planning and Economic Affairs (MOPEA), the Ministry of Gender and Development (MOGD), and the Ministry of Agriculture (MOA) will be crucial to improve efforts to collect gender-disaggregated agriculture sector data and to maximize the policy and programmatic benefits of the use of such data.

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