CHAPTER 11

Women's Control over Income: Implications for Women's Empowerment and the Agricultural Sector

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Across Africa, rural transformation is taking place, and agriculture remains a central driver of that transformation. Agricultural production is the most important sector in most African countries, averaging 24 percent of gross domestic product (GDP) for the region. Agribusiness supplies, processing, marketing, and retailing add about 20 percent of GDP (O'Sullivan et al. 2014). Urbanization and rapidly changing consumption patterns have fueled a sharp shift in diets beyond grains into nongrain foods, such as dairy, fish, meat, vegetables, fruit, and tubers, and heavily into processed foods. In any scenario, agriculture will continue to play a greater role than has been the case in other transformations around the world. Although the development literature contains analyses of rural agricultural transformation and what it means for youth, the gender dimensions are lacking. It is critical to ensure that women receive and control an equitable share of the benefits of the rural transformation processes that are occurring in various forms and at various speeds throughout Africa.

One approach in the literature has been to analyze the performance of specific value chains and their contribution to agricultural transformation. The gender dimension, however, is not commonly incorporated into such analysis. A few recent studies have started incorporating a gender analysis and specifically looking at women's contributions to and benefits from value chains, but the evidence is not promising (AfDB 2015; Coles and Mitchell 2011). The analysis shows that women do not get benefits commensurate to their labor contribution from these value chains, and that has implications for the development of the chains, for investments in household food and nutrition security, and for poverty reduction.

In Africa, one also sees continued underinvestment in crops and livestock that are important for women, whereas cash crops and major cereals continue to receive substantial investment (World Bank 2009). With current shifts in urban demand for foods, the changing relative importance of crops to households can lead to a shift in the control over those crops and incomes generated. As market opportunities improve for crops under women's control, there is need to ensure that such shifts are inclusive of women.

Two dimensions of women's control over income are relevant: the first is whether women are remunerated for the labor, and the second is the extent to which they retain some control over their income once they bring it home. We highlight how these two are related.

The chapter starts with a brief description of the changing agricultural landscape and women's roles in agriculture and some of the driving forces of these shifts. We then proceed to make three main points. First, we provide evidence of why control over income by women is important to argue that women should control the income that is being generated from agricultural value chains, especially income generated with their labor and skills. Women's control over income has important implications for their own empowerment, and for reinvestment in crops that are important for women and value chains, food and nutrition security outcomes, and poverty reduction. Second, we analyze household decision making in three African countries and find considerable heterogeneity in patterns of women's control over income. Thus, policy makers should be considerate that patterns vary across the characteristics of the women themselves and the source of income in designing policy to better integrate women into value chains. Lastly, by drawing on analyses of agricultural interventions, we argue that the approaches that governments, development partners, and others use to transform agriculture can be designed to be more inclusive of women and lead to better benefits for women and their households. We conclude with recommendations on what works to ensure women control the income from their labor.

Women's Roles in Agricultural Production and How They Are Changing

Women play a major role in Africa's agricultural economy. They provide close to 50 percent of the labor in agricultural production (FAO 2011). And agriculture is important to African women. Estimates of the proportion of economically active women working in the agricultural sector in Africa south of the Sahara range from 30 to 80 percent (FAO 2011). In some countries, notably Burundi, Rwanda, Malawi, and Burkina Faso, more than 90 percent of economically active women are involved in agriculture. Their roles, however, vary across value chains and across countries. Depending on the country, the rural wage gap between men and women in Africa is estimated to be 15 to 60 percent, indicating that women are more likely to be in lower-paying or temporary agriculture jobs or are unremunerated for the labor they provide on family farms (AfDB 2015).

Although sex-disaggregated data on entrepreneurship in agriculture are scarce, it can be said that, in general, African women are highly entrepreneurial; they own a third of all businesses across Africa and up to a high of 62 percent in Côte d'Ivoire (Global Entrepreneurship Research Association

2017). Yet women entrepreneurs are more likely to be running microenterprises in the informal sector, engaging in low-value-added activities that reap marginal returns. They tend to be entrepreneurs of necessity, rather than opportunity, driven into small business by the lack of alternatives. Most female entrepreneurs are found in the informal sector. In the case of Côte d'Ivoire, only 15 percent of formal-sector firms have a woman as the managing director, while 32 percent have some degree of female ownership. While these data are for all entrepreneurial activities, these patterns are most likely also reflected in agriculture-related enterprises as well.

These dynamics of women's roles in agriculture shift as new markets emerge and smallholder agriculture commercializes. Comprehensive data are not yet available, but several case studies suggest that African food markets have expanded hugely. Reardon (2015) estimates that, between 1970 and 2010, rural–urban food supply chains in Africa moved about five times more food to the proliferating cities and the volume of food purchased in rural markets expanded to eight times the 1970 levels. With these changes, new market trends emerged, such as "supermarketization" and new nodes in the food supply chain (including first- and second-stage processing, packaging, branding, and logistics). Household care work and barriers of access to finance, capital, and information, however, mean that women are less likely to take advantage of these new trends than men.

As incomes grow and diets diversify during structural transformation, the demand for food also shifts from basic staples to horticultural and livestock products. This leads to shifts in overall structures of agricultural production. Such shifts are already visible in some economies, such as Tanzania, South Africa, Cabo Verde, and Senegal, but not in others (IFAD 2016). Given previous underinvestment in crops and livestock managed by women (including horticultural crops and poultry and small livestock), these shifts provide tremendous opportunities for women. Yet if the processes of change are not managed well, women could lose out as men position themselves to serve these new markets with new crops and livestock products. These dynamics are already starting to manifest themselves in the poultry sector and with crops such as indigenous vegetables (IFAD 2016). Those activities were traditionally managed by women and are now starting to be dominated by men.

Migration and climate change also influence the roles of women in agricultural value chains. In Tanzania and other areas of Africa, migration away from the farm to nonagricultural activities has been gender-biased; women remain in agriculture and their labor in agricultural value chains is intensified (Addison and Schnurr 2016; Mbilinyi 2016). At the same time, climate change shocks have caused large and rapid transformations in many agroenvironments. The "climate-smart agriculture" approach builds resilience to climate change while simultaneously diffusing agricultural technologies that increase crop productivity. Yet the differentiated impacts of technological change on women and men may affect productivity and sustainability differently according to gender (Kristjanson et al. 2017; Taylor 2018).

Why Is Women's Control over Income Important?

In broad strokes, we can identify three dimensions in which women's control over income is important. It benefits the women themselves; controlling one's income is a source of empowerment and agency. Second, it benefits their children and families. Finally, when women control the income, it increases their stake in the agricultural sector and increases investment.

Much of the literature analyzing women's control over income has considered how that control affects household decisions. Such work is based on household survey data that asks about men's and women's earnings, who makes household decisions, and the outcomes associated with those decisions, such as household expenditure patterns or investments in children's health and education. Much less work has considered how women's control over income within value chains has directly affected the value chain. In this section, we explore the literature on women's control over income within households and link it to broader issues within value chains.

One initial challenge is to define what is meant by control over income and how to measure it. Conceptually, we mean that women have some say in how the income is used—whether it is saved, invested, or spent on consumption and, if it is invested or spent on consumption goods, which items are purchased. It may be that the woman makes and implements the decisions alone or that she has a say in how the decisions are made within the household. It may be that she has money in a separate purse that she alone controls or that money is pooled and she has a voice in how it is spent.

The Women's Empowerment in Agriculture Index (WEAI) measures the empowerment, agency, and inclusion of women in the agriculture sector and recognizes control over income as a central component of empowerment (Alkire et al. 2013; Malapit et al. 2019). Other studies rely on questions about decision making over income, often asking a woman whether she has control over the income she earns. Questions in empowerment modules often ask who makes

decisions regarding household expenditures, including both major and minor expenditures. In agricultural modules, there may be questions about who controls the output from a particular crop or livestock activity. The structure and content of these questions affects the responses given and measures of decision-making power (Donald et al. 2017).

Women's share of household income has been shown to be positively correlated with better household outcomes. For example, in Ghana, Doss (2001) found that the impact of transitory income shocks to agricultural production varied depending on whose crop was affected.[2] Similar findings in Côte d'Ivoire suggest that household expenditure patterns differ based on whether men or women earn the income (Hoddinott and Haddad 1995). This literature does not always clearly distinguish between income earned and income the woman controls; the implicit assumption tends to be that they are the same. Because of a concern about reverse causality (for example, that those with more bargaining power are able to earn higher incomes), Schultz (1994) demonstrated that unearned income of husbands and wives had different impacts on labor supply and fertility decisions.

As a result of this literature, both conditional cash transfer programs and unconditional cash transfer programs, particularly in Latin America and, more recently, Africa, have targeted women as the recipient. In a systematic review, Baird et al. (2014) find that cash transfers improve schooling outcomes. A review of health outcomes finds that conditional cash transfers have had a positive effect on the use of preventative health services, immunization, and in encouraging healthy behaviors (Ranganathan and Lagarde 2012). More recent reviews find that conditional cash transfers are associated with a decrease in intimate partner violence (Buller et al. 2018) and improvements in child nutrition when appropriately targeted (Manley and Slavchevska 2019).

The third dimension relates to investments in the agriculture sector. Much of the evidence is based on examples of what happens when women do not control the income. Women's lack of control over income can limit improvements in both women's well-being and productivity in the agricultural sector—much in the same way as the gender gap in access to productive resources (Peterman, Behrman, and Quisumbing 2014). Women may choose not to contribute their labor to new opportunities when they do not obtain benefits (Dolan 2001; Koczberski 2007). The agricultural sector as a whole can therefore benefit from women controlling their own income if it induces higher labor supply in the sector.

What Factors Affect Whether Women Control the Income?

The factors affecting women's control over income from agriculture can be characterized into three broad areas: the characteristics of the women themselves, including the households in which they live; the type of crop or livestock; and finally, the characteristics of the market.

In addition to drawing heavily on the literature, we analyze WEAI data from Ghana, Mozambique, and Rwanda[3] to analyze the relationships of control over income with women's characteristics and the source of income. For these three countries, we have data for men as well as women, which facilitates a comparison across sexes. In the sampled household, a primary male and female decision maker were interviewed. Both men and women were asked, "How much input did you have in decisions on the use of income generated from food cropping, cash cropping, livestock, nonfarm enterprises, and wage income?"

We analyze these using an ordered probit model, comparing women who have input into few or no decisions, those who have input into some decisions, and those who have input into most or all decisions. We run the regressions separately for control over each of the types of agricultural income, including food cropping, cash cropping, and livestock.[4] Then, we consider how the pattern of who influences the decisions varies across income source. Finally, we compare women's control over various sources of income with that of men.

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2 For two other examples of the impact of women controlling income from India and China, see Luke and Munshi (2011) and Qian (2008).

3 The datasets used are as follows: Ghana baseline survey (conducted July–August 2012), which includes 4,410 households in the country's Northern Savanna area; Mozambique baseline survey (conducted February–May 2013) comprising 2,864 households across four provinces; and Rwanda interim survey (conducted December 2014–January 2015), which includes 1,066 households across the entire country (excluding Kigali). The graphs are based on the baseline survey data for all three countries, including Rwanda, for which there is a larger number of observations and five gradations of control over income (as opposed to three in the interim survey). We favor the interim survey data in our analysis as it proved easier to match the control-over-income variable with demographic characteristics. We also conducted the analysis for Malawi and Zambia, but since control over income is reported as only "Yes, decisions regarding income" or "No decisions regarding income," we only report the results for Ghana, Rwanda, and Mozambique where we are able to distinguish between "No input into any decisions," "Input into few decisions," "Input into some decisions," "Input into most decisions," and "Input into all decisions." Results for Malawi and Zambia are available on request.

4 Each regression included only the households that reported participation in the given activity. Data were also collected about fishing income, but in all of the countries too few people reported fishing income for appropriate statistical analysis.

Which Women Control Agricultural Income?

Women's control over agricultural income is closely associated with other factors that are related to women's empowerment (Table 11.1). When women identify themselves as the primary decision maker, rather than the spouse of the primary decision maker, they are more likely to have control over income.

Across all three countries, older women consistently have greater control over their income. Programs designed to promote women's control over income should therefore be sensitive to the possibility that younger women may be particularly vulnerable to losing control over their income.

In addition, women with control over resources, specifically land and livestock, are more likely to control income. Women's landownership is consistently correlated with women's greater control over income from food crops and is positively correlated with women's control over income from cash crops in Ghana. This result holds up regardless of whether we consider any landownership[5] or only sole landownership.[6] Similarly, owning any livestock is correlated with greater control over income from livestock in all three countries. The coefficients for individual ownership of land and livestock are consistently positive, and often significant and larger in magnitude than the coefficient on joint ownership.

The Ghana data have information on marital status and demonstrate that women who are single and those who are widowed, divorced, or separated are more likely to report control over income relative to those who are married (the default category).

Lastly, women who are more educated (not shown) are more likely to report that they have input into most or all decisions regarding the various forms of agricultural income.

A number of other domains of women's empowerment are correlated to women's control over income, but the evidence is mixed across sources of income and countries. For example, women's access to credit[7] is negatively related to their control over income from food cropping, cash cropping, and livestock in Ghana. But the relationship is positive for all types of income (except food cropping) in Mozambique and for food cropping, livestock, and nonfarm enterprise income in Rwanda. The coefficients in the Ghana regressions may be explained by reverse causality such that women with higher control over their income have a lower demand for loan products, whether formal or informal. The results for Mozambique and Rwanda imply that in some contexts, access to credit is positively related to control over income. That is, improving women's control over income can enhance their access to credit.

Membership specifically in economic groups (agricultural producer groups, and trade and business associations) and other types of groups (including insurance, civic, and religious groups) is also sometimes related to women's control over income, although the direction of the relationship again differs across income type and context. For example, although there is little indication that women who actively participate in economic groups are more likely to control income, these results mask considerable heterogeneity. In Ghana (and in accordance with the evidence on value chains in fish farming [Naved 2000]), agricultural producer groups are always associated with greater control over income, but this is offset by the negative correlation between trade and business associations and control over income. The negative relationship between other group membership and control over income in the case of livestock income in Mozambique and nonfarm enterprise income in Rwanda may be explained by the detrimental impact of participation in women's groups, which reinforce traditional gender roles. The positive relationship in the case of wage income in Ghana and food cropping and livestock income in Rwanda may be explained by the role of saving and credit associations in enabling women to retain control over their income. In this sense, group membership can be either beneficial or harmful, depending on the specific nature of the group.

Thus, control over income varies across women within rural communities, based on relationships within the household and their education and age. In addition, women's control over income is correlated with other domains of women's empowerment. In our analysis, it is not possible to identify the causal relations, but only to show that they are interrelated and that women who are empowered in some dimensions are more likely to control income from various sources.

5 Defined as joint or individual ownership of land.

6 Not shown.

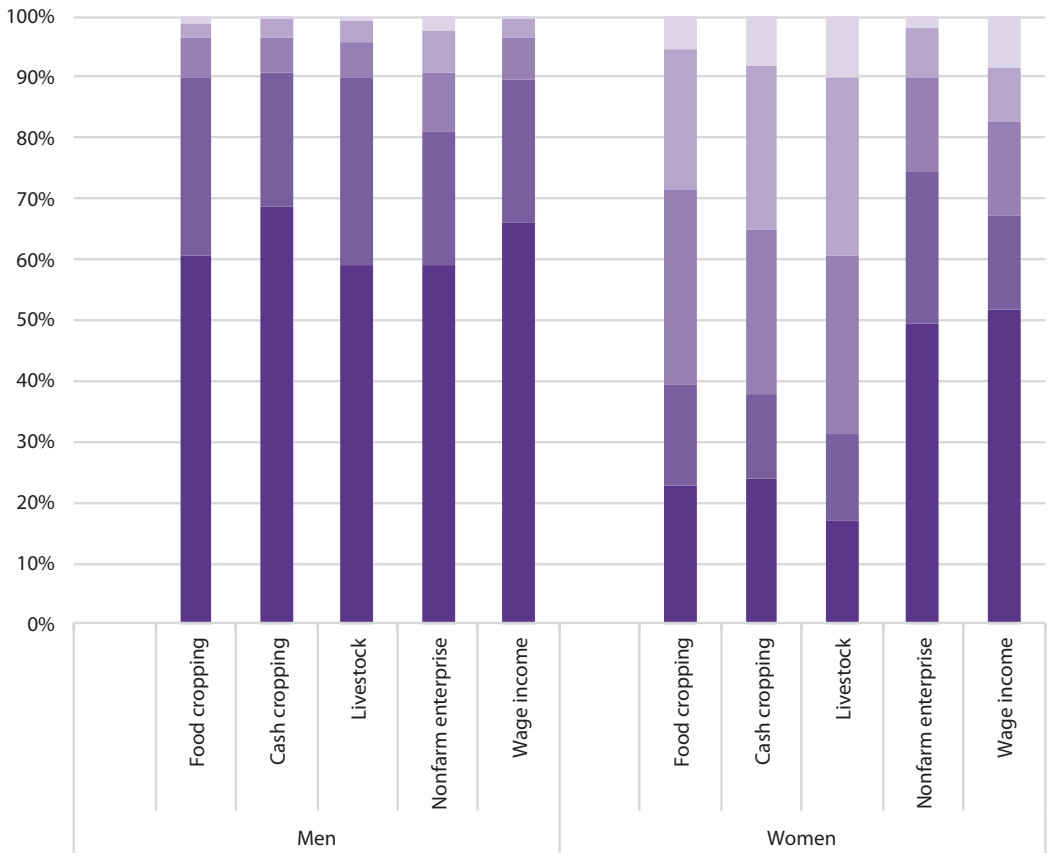
7 Defined as having any sole or joint control over the decision to borrow or the use of a loan from any source of credit, excluding credit from friends or relatives.

TABLE 11.1—WOMEN'S CHARACTERISTICS AND CONTROL OVER HOUSEHOLD INCOME

	Panel A: Ghana					Panel B: Mozambique					Panel C: Rwanda				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
	Food cropping	Cash cropping	Livestock	Nonfarm enterprise	Wage	Food cropping	Cash cropping	Livestock	Nonfarm enterprise	Wage	Food cropping	Cash cropping	Livestock	Nonfarm enterprise	Wage
Relationship to primary respondent															
Spouse	-0.3814***	-0.3052***	-0.2665**	-0.3323**	-0.3505	-0.6873***	-0.9276***	-0.8338***	-0.9731***	-1.0505***	-0.9574***	-1.4877***	-1.3845***	-1.2219***	-1.4946***
Child	4.2762***	4.0974***	5.4508***	4.0508***	omitted	-0.4359	4.6785***	-1.267***	-0.5882	3.7130***	-1.3404***	3.3579***	-0.6528	3.2272***	3.3053***
Other	-0.8188**	-0.2480	-0.5905	-0.8583**	-6.5882***	-0.9908*	-5.6667***	-6.0014***	omitted	-0.7098**	-0.7488***	-0.7517	-1.1043***	3.2441***	3.1507***
Age	0.0097***	0.0092***	0.0074**	0.0104***	0.0131	0.0094***	0.0061	0.0033	0.0132	0.0273***	0.0020	0.0218***	0.0051	0.0179	0.0152*
Marital status															
Single	1.0182***	0.9925**	1.2781***	0.7752	0.4151										
Widowed / divorced / separated	0.6197***	0.6611***	0.8214***	0.2927	0.6465										
Cohabiting	0.4696	0.5533	5.5624***	4.2520***	4.6886***										
Literate	-0.0592	-0.0596	0.1963	0.1982	0.0027	-0.0099	-0.2403	0.1398	0.0598	0.1811	0.2656	-0.2446	0.1787	0.6516*	-0.0005
Access to credit	-0.2712***	-0.3639***	-0.2290*	0.1136	-0.0936	0.0034	0.9406	1.1881**	5.3053***	0.7777*	0.1662*	0.0940	0.2412**	0.3713*	0.0857
Other group membership	-0.0954	-0.0372	-0.0079	-0.0150	0.5109**	0.0693	-0.0544	-0.2676*	0.1162	-0.2018	0.2773**	0.0997	0.2328	-0.5940*	-0.0027
Economic group membership	0.0975	0.0993	0.0378	0.2002*	0.1448	-0.0702	-0.1517	-0.2318	-0.6223	-0.7365*	0.0127	-0.3077	-0.1399	-0.4880*	0.1122
Landownership															
Joint or individual	0.4524***	0.5601***				0.6663***	0.2938				0.3771***	0.1312			
Livestock ownership															
Joint or individual			0.5251***					0.4737**					0.5992***		
Observations	1,629	1,024	1,017	901	179	1,160	299	297	167	171	865	262	653	213	410

Source: Feed the Future Ghana Zone of Influence Baseline Population Based Survey (2012), Feed the Future Mozambique Zone of Influence Baseline Population Based Survey (2013), and Feed the Future Rwanda Zone of Influence Interim Survey (2015).
Note: Each of the columns pertains to a separate ordered probit regression in which the dependent variable takes the value of -1 if the woman reports few or no decisions in the control over the type of income, 0 if the woman reports having input into some decisions, and 1 if the woman reports having input into most or all decisions.

FIGURE 11.1—WOMEN'S AND MEN'S CONTROL OVER INCOME BY INCOME TYPE—GHANA



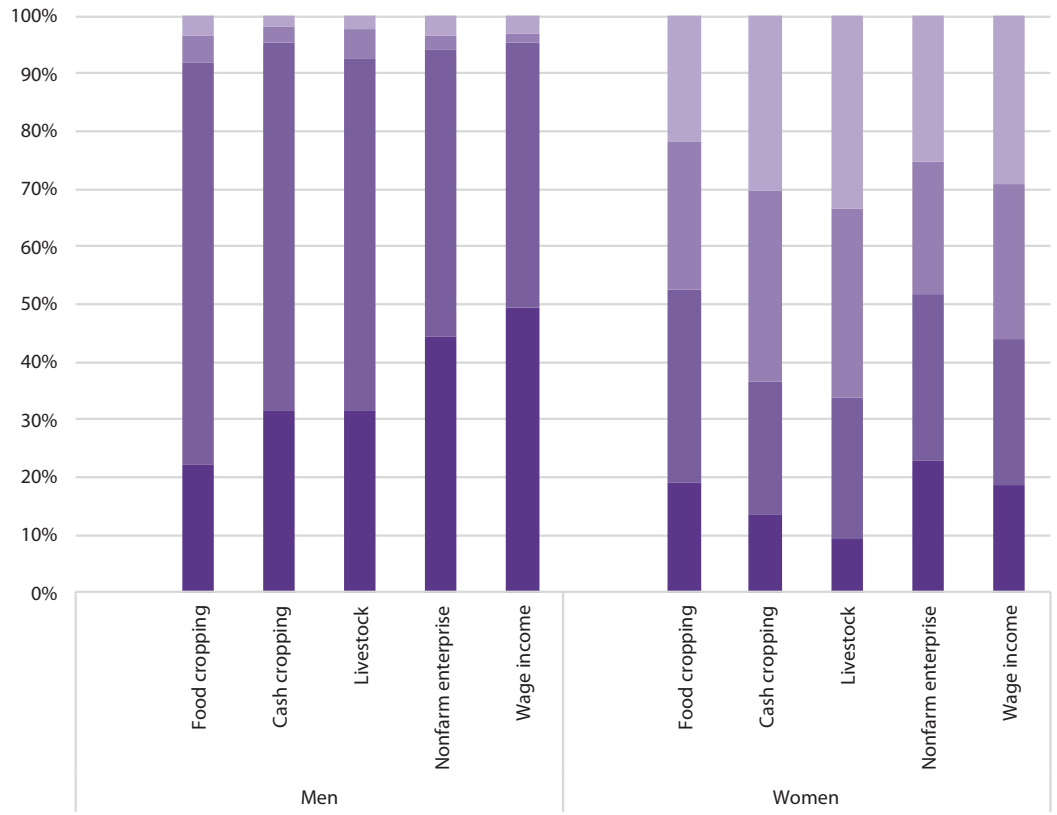
Source: Feed the Future Ghana Zone of Influence Baseline Population Based Survey (2012).

Variation across Types of Agricultural Income

The foregoing discussion clearly indicates that the patterns of women's control over income vary by the source of the income. Figures 11.1 through 11.3 compare women's and men's control over various sources of income by considering their responses to questions about how much input they have into the decisions about the use of income.

Our empirical analyses indicate that the patterns differ somewhat by country. In Ghana, women are most likely to say that they have input into all or most decisions regarding wage and nonfarm income, while in Mozambique, it is nonfarm enterprises and food cropping. In Rwanda, women enjoy high levels of involvement in all or most decisions across types of income but are least likely to report high levels of involvement in cash cropping. In both Ghana and Mozambique, women report the least input into decisions regarding income from livestock.

FIGURE 11.2—WOMEN'S AND MEN'S CONTROL OVER INCOME BY INCOME TYPE—MOZAMBIQUE



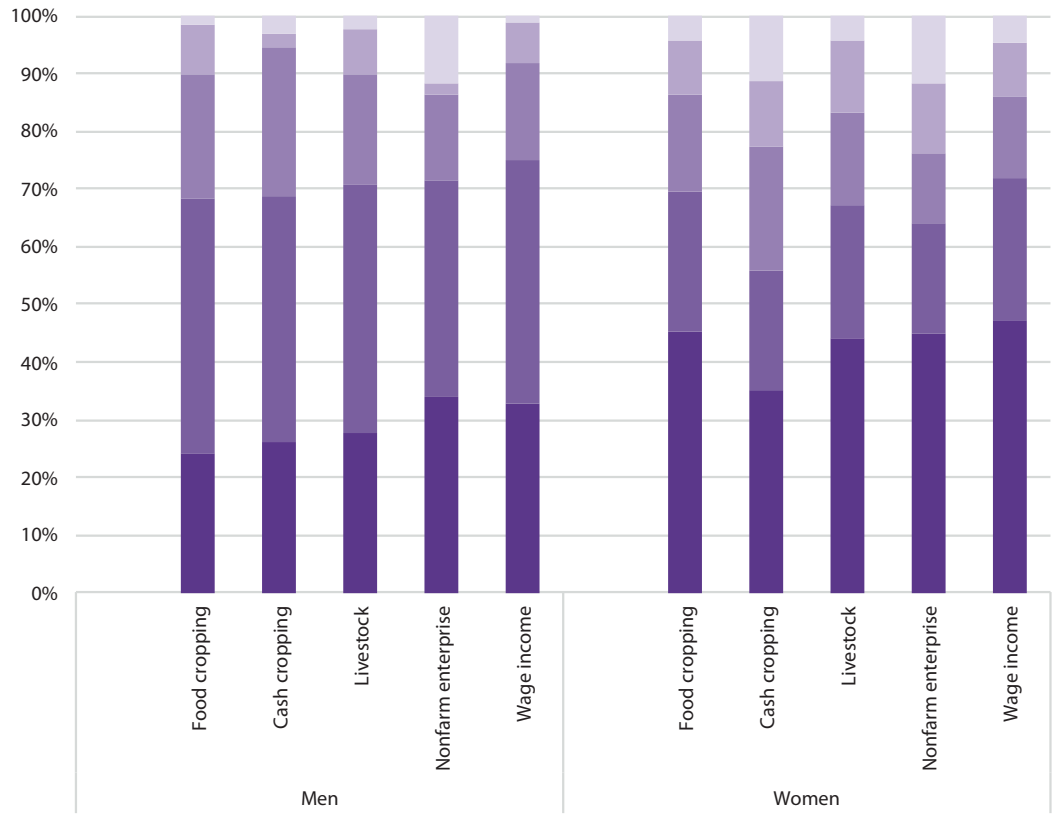
Source: Feed the Future Mozambique Zone of Influence Baseline Population Based Survey (2013).

These data mask important differences across different crops and for different forms of livestock. Unfortunately, the WEAI data do not break this down further to look at particular types of food-cropping income. With the Ghana data, however, we can compare the control over income across households producing different types of crops. In Ghana, women in soya-growing households are more likely to report control over food and cash income than women in rice-growing households, thus supporting the existing literature that crop type is related to control over income (Njuki et al. 2011).

Women consistently report less control over income than do men, regardless of country or source of income. Rwanda is a bit unusual in that women are more likely than men to report that they have input into all decisions, while the most common response from men is that they have input into most decisions.

An extensive literature documents how the characteristics of the crops or livestock affect whether men or women control the income. Some crops and livestock are seen as socially more appropriate for women. These may include home gardens, some staple crops, and small livestock and poultry. They tend to be grown on a smaller scale, often in and around the homestead, and produce lower

FIGURE 11.3—WOMEN'S AND MEN'S CONTROL OVER INCOME BY INCOME TYPE—RWANDA



Source: Feed the Future Rwanda Zone of Influence Baseline Survey (2015). See footnote 2.

revenue. Value chains that involve crops or livestock where the income streams are smaller and more frequent make it easier for women to control the income.

Home gardens are often seen as appropriate forms of agriculture for women. Women may grow a variety of vegetables on a relatively small scale, primarily for home consumption with any excess sold. When the produce is sold, it is often sold in small quantities with low amounts of money changing hands, which makes it easier for women to retain control. Early literature on this subject showed that income from commercial (cash) crops was most often controlled by men (Alarcon 1993; Kennedy and Cogill 1987; Tinker 1979 cited in Kennedy 1994) and was mainly used for nonfood expenditure (Kennedy and Cogill 1987). Even when considering crops such as irrigated vegetables, there may be differences. Njuki et al. (2014) report that women prefer to irrigate leafy vegetables. These can be harvested over time and sold in small quantities. On the other hand, men prefer to irrigate tomatoes, which are sold on a larger scale.

In livestock, Njuki and Sanginga (2013) report that women are more likely to control income from the sale of small livestock compared to large livestock, and from livestock products such as milk compared to sale of the actual livestock. In a study in Tanzania (Njuki and Sanginga 2013), women managed more income

from the sale of small livestock than large livestock. Specifically, they managed 49 percent of income from the sale of chickens and 33 percent of income from the sale of sheep and goats compared to 24 percent of income from the sale of cattle. On management of livestock and their products, women managed 50 percent of the income from the sale of milk, which was much higher than their income share from the sale of cattle (24 percent). According to Ridgewell and Flintan (2007) trading in milk provides women with one of the few available opportunities to control their own money.

Market Characteristics

Finally, the characteristics of the market affect who controls the income. It is not necessarily the case that the person who sells the produce in the market is the one who keeps the revenue, although in many contexts this is the pattern. Thus, when some markets are culturally inappropriate for women, such as markets for large livestock, women may not participate directly in them. It is often difficult for women to sell large livestock directly in the markets, and instead they often rely on a broker to sell their animals. Women then get lower returns from these sales.

Qualitative data from Tanzania show that when men sell bags of grain to warehouses, they keep the revenue, even if the production was done jointly with their wives (Theis et al. 2018). The social norms render this acceptable, and the structure of the market makes it difficult for women to sell without their husbands' involvement.

The distance to and the type of market that a product is sold to has been shown to influence the income share going to women (Njuki et al. 2011). Traveling long distances to markets may be more challenging for women than for men. Women face greater time constraints due to their daily responsibilities in the home, and women tend to face greater physical threats when traveling to markets. Thus, women are more likely to sell their produce in local markets or at the farmgate. There is evidence that women are more likely to sell to informal, often near-to-home markets, and that income derived from these markets will be managed by women. In Tanzania, for example, when chickens were delivered to traders and shops away from home, women lost up to 35 percent of the income share that they would have managed if they had sold chickens at the farmgate to other farmers (Njuki and Sanginga 2013).

A final challenge women face is that when a crop enters the market economy men are likely to take over from women, and women therefore do not benefit from market-oriented production (von Braun 1988, 1989). In a review of the literature, Kaaria and Ashby (2000) found that poor rural women were often excluded from accessing the more lucrative markets; women often did not benefit from market linkages because of men taking over the commodity once it became profitable. To avoid men taking over, women often selected commodities with lower value and a lower return that did not interest men (Kaaria and Ashby 2000). More recent examples abound. For example, in Burkina Faso and Mali (Bassett 2010), although growing Fairtrade cotton may increase women's incomes and their autonomy, men are often attracted by the high returns and may use their wives' names to apply for Fairtrade certification. Social norms require that a woman hand over the money that she receives to her husband and it is up to the husband to determine how much to return to her.

An extensive literature has analyzed women's limited access to land and other resources needed to support their livelihoods. The evidence is clear that in Africa, as well as elsewhere, women have less access to and ownership of land than do men, regardless of how land access and ownership are defined (see Doss et al. [2015] for an analysis of women's landownership in Africa). Yet simply owning the land or managing the field does not necessarily mean that women will control the income. An analysis of six countries in Africa finds that overlap does not necessarily exist among who is reported to own, manage, and control the income from land. Similarly, Theis et al. (2018) find that the person who controls the outputs from an irrigated land parcel is not necessarily the person who manages or works the land. Women also typically have less access to nonland resources, including extension services and other sources of information, than do men (Peterman et al. 2014).

An analysis carried out by the AfDB (2015) in four countries and four value chains showed the relationship between landownership, labor contribution, and control over income. In Côte d'Ivoire women owned 25 percent of the cocoa plantations and made up about 68 percent of the labor force. However, due to their relatively low plantation ownership rates, they had very little control over the revenues they generated and were largely unremunerated for their labor. In Ethiopia, women made up 75 percent of the coffee-industry workforce but controlled only 43 percent of the revenue. And in Burkina Faso, women made up approximately 50 percent of production labor in cotton but received less than 2 percent of the income. This trend was replicated even in traditional food crops such as cassava. In Nigeria, the world's largest cassava producer, women account for 25 percent of the 6 million smallholder cassava farmers but earn just 17 percent

of the income. Most commercial production and processing facilities are owned by men, while women are predominant in smallholder processing (AfDB 2015).

Evidence on What Works to Ensure That Women Control the Income

Numerous interventions have attempted to increase women's control over income. This section provides examples of what works in facilitating women's control over income. The examples are grouped into three categories; value chain interventions, interventions in commercial agriculture, and interventions to change gender relations at household and community level.

Interventions in Value Chains

Rubin et al. (Chapter 6 in this report) have detailed the different ways in which women can be engaged in and benefit from value chains. Here we focus specifically on the factors that influence women's control over income derived within value chains.

Many value chains based on smallholder production continue to assume that the household is the unit of production and contract with the household head. Innovations that have found ways to pay women for their labor have both increased women's participation and improved their control over income. For example, an oil palm company in Papua New Guinea created incentives for women to participate in oil palm production by collecting loose fruit that had dislodged from main bunches during harvesting. The women were paid directly by the company and were able to keep this income (Koczberski 2007). While this is a descriptive case study, it is one of several that show that identifying a niche position for women in a value chain can lead to their control over income. The study also provides an effective example of how engaging men and women as individuals and rewarding each separately for their participation can lead to better benefits for women.

As the previous example demonstrates, one key way that value chains influence who controls income is through the structure of payments. More generally, payment systems within value chains influence women's participation and control over income. Women are less likely to have bank accounts than men. So if money is paid directly to bank accounts, it is more likely to be controlled by men unless additional steps are taken. New methods of payment make it easier to ensure that payments for women's production go directly to women. For example, a bank in Malawi employed a biometric card that allowed only the cardholder to withdraw money from the account. This intervention successfully attracted large numbers of women to open bank accounts and was particularly effective for those in rural areas who did not possess an identity card and for widows who were able to protect their savings from their husbands' relatives (Cheston 2007, cited in Quisumbing and Pandolfelli 2010). A recent review suggests that payment systems via mobile phones further expand the options for women to receive payments directly (Duncome and Boateng 2009). Women who are members of producer groups (such as milk unions) can receive payments into their own accounts.

Most value chain projects remain gender-blind, often increasing women's labor without increasing their control over income. In Mozambique, an evaluation study found that a dairy project that aimed to improve dairy production and marketing by providing improved and higher-yielding dairy cows led to increases in milk production but a higher labor burden for women and children. The highly productive cattle distributed by the project produced much more milk than traditional cows but required more and better food and other inputs. Because they did not graze, food and water had to be brought to the cow, which dramatically increased labor requirements. While having a woman trained to manage the dairy cows was positively associated with dairy income, both men and women reported that men controlled the majority of the income from dairy production (Johnson et al. 2015).

Interventions in Commercial Agriculture

As women play an extremely important role in agriculture in poor countries, the modernization of food supply chains entails important gender implications as well. The critical role export firms can play in enhancing women's access to commodity crop income is supported by further studies that find that women employed in modern supply chains through off-farm wage work in the agro-industry benefit more directly than those employed as family-farm workers. This is mainly because in both on- and off-farm wage labor, women are themselves the "contracted party" in the labor agreement with the companies and not only directly receive the cash wages related to their labor but are also more directly attributable to their labor (as compared to family work), which increases their bargaining power over that income (Martens and Swinnen 2009).

When agricultural companies contract with smallholder farmer, they often need to secure access to land and labor for a guaranteed supply of primary produce, which leads them to contract with male household heads (Dolan 2001). Women are excluded because they lack statutory rights over land and because

they have less authority over family labor than do men. When men contract with the firm, they also receive and directly control the income derived from high-value contract farming. Even when women provide the bulk of the labor in high-value contract production as family laborers on plots controlled by their husbands and brothers, their work is often unpaid or inadequately remunerated.

Direct contracting of women and innovative contracting that does not require that the farmer own the land can ensure women manage more of the income from the contracted crop. Agribusinesses may opt to base contracting eligibility on the principle of control: as long as a farmer has been assigned land where he or she has control over the produce, he or she can become a member, regardless of whether he or she has ownership rights over the land itself. This allows married women to sign contracts on their own. Other options include the registration of both spouses in a household and the registration of women's groups. For example, in Phata Sugarcane Outgrowers Cooperative in Malawi, 44 percent of those contracted were women (Rijke 2017). This was because membership was not limited to household heads. Instead, each contracted farmer was provided with a unique registration number, and hence multiple individuals from the same household/women and men from the same family could register as individuals. In some families, men allocated land to their wives so that they could join. This enabled women to directly receive benefits from the land, including the payment of dividends (Rijke 2017).

In sharp contrast to high-value contract farming, there is no bias in favor of men in the labor market effects of modern supply chains, especially in the fresh fruit and vegetables agro-industry (Martens and Swinnen 2009). In Senegal, 90 percent of the agro-industrial employees in the French bean sector, and 60 percent in the cherry tomato sector, are women. Women make up 75 percent of flower industry employees in Kenya and Uganda and 65 percent of employees in the fresh vegetable sector in Zambia. In the Niayes area of Senegal, wages earned in the French bean export industry make up one-third of household income for those households involved in agro-industrial employment, and 85 percent of these wages pertain to women. In the Senegal River Delta area, 45 percent of the income derived from employment in the tomato export industry pertains to women while this agro-industrial employment has become the major source of income in the region (Martens and Swinnen 2009). However, more evidence is needed on how much of this income is under the control of women.

In sum, interventions that appear to work in the commercial agriculture sector to support women's control over income include direct contracting of women for crops for which they are the main producers, joint registration of spouses in contracts where both are providing the labor, payment systems that work for women such as village banks and mobile payments, and ensuring women obtain financial literacy to manage contracts.

Interventions to Change Household and Community Gender Relations

Even when income is paid directly to women, social and gender norms can limit women's control over how that income is used. Changing gender relations at the household and community level can influence society's acceptance of women's increased roles in markets and their ability to control and make decisions regarding household income. Over the past several decades, the transition from exclusive subsistence farming to the growing of cash crops has been promoted as a method of increasing the incomes of poor smallholder farmers and is viewed as a key stepping-stone in economic development (Masanjala 2006). Despite the potential of cash crops to raise household income, the transition can also contribute to gender inequality within the household. Though both men and women provide labor for cash crop plots, men conduct most market-facing activities and consequently control the income from these activities.

The Uganda Farm and Family Balance project tested two approaches to increasing women's integration into and returns from cash crop value chains: contracting with women farmers and sensitization workshops to improve cooperation between men and women in households (Ambler, Jones and O'Sullivan 2018). The impact evaluation intervention cross-randomized (1) encouraging households to transfer one of multiple sugar contracts into wife's name, and (2) providing sensitization workshops to increase gender equity and cooperation in households. It is one of few rigorous impact evaluations that provide evidence of an intervention that was successful in enhancing women's control over income. Both components had an impact in changing the social norms about women's roles in sugar production.

In Malawi and Zambia, a fisheries project sought to change the gender and social relations that govern fishing in order to reduce postharvest losses and increase women's decision making and control over income (Cole et al. 2018). In both countries, while women participate actively in farming and fishing, they are often segregated in processing often using traditional, rudimentary, and labor-intensive technologies, while men do the fishing and selling and earn greater income. This has several technical and social consequences. The lack of improved

technologies, low access to finance, and women's low mobility accounted for up to 38 percent of losses in captured fish (Cole et al. 2018). Low involvement of women in other nodes of the value chain and social and cultural norms lead to lower incomes for women, low input in household decision making, and a lack of control over income by women. The project used community theater to address some of the harmful social and gender norms and power relations identified, and to change attitudes toward women. Results showed that after exposure to the program, a greater percentage of women made larger contributions to decisions regarding fish processing and the associated income (a 30 percent and 49 percent increase, respectively) (Cole et al. 2018). Women's involvement in decisions about income generated from fish trading significantly increased for those who participated in community theater, from 65 to 94 percent.

While rare, norm transformative interventions that explicitly work to change social norms through direct engagement of men, women, and the broader community around gender and social barriers are becoming increasingly common both in the agricultural and the financial sector. For example, CARE International has made transformative norms change an organizationwide priority and is addressing the gender norms that affect financial inclusion through its work supporting Village Savings and Loan Associations. The organization has promoted dialogue between men and women around intrahousehold resource management and the role of women in the paid economy (see Miruka and Hillenbrand, this report).

Media can also play a role in changing these norms. In Kenya, for example, Women's World Banking developed an education campaign to encourage low-income, underbanked women to open and use bank accounts. Partnering with a local educational television show, Makutano Junction, Women's World Banking used market research findings on the psychological barriers women face in accessing bank accounts to develop storylines in the shows and embed messages to examine power relations in the family to shift norms and perceptions around financial services for women. Approximately 138,000 low-income female viewers opened an account after the show; on the other hand, no female nonviewers opened accounts (Women's World Banking 2017).

From these examples, it is clear that value chain or financial inclusion interventions alone are not enough to guarantee women's control over income due to gender and social norms that create additional barriers. It is necessary to change those norms through participatory and norm change activities including building women's own confidence, engaging men for gender equality, and using media campaigns to ensure women have control over resources including control over benefits from their labor.

Conclusions

As rural economies transform and new income earning opportunities arise, it is important that both women and men benefit from these changes.

Women's control over agricultural income is mediated by a number of factors. Some are related to the women themselves and their position within their families. Women are often involved in particular types of crop and livestock production for which it is easier for them to control the income. These are often small-scale agricultural activities for which the marketing is done locally and frequently. Thus, women are more likely to engage in vegetable production for the local market than in large livestock production where animals are sold once or twice a year at a distant specialized market.

Interventions to increase women's control over agricultural income have taken several directions. One approach is to focus on crop and livestock activities that have been traditionally within women's domain and work to increase their productivity and marketing. A second approach is to change the structures in more lucrative value chains to make them more accessible to women. Often this includes rethinking the payment structure so that the proceeds from women's own labor goes directly to them. Finally, some programs have directly tackled the social norms that limit women's participation and that suggest that women should not earn or control money. Despite this evidence, value chain and other market development programs often do not include explicit interventions to improve women's control over income from their labor. Where efforts have been made to design and evaluate programs that explicitly target women's control over income, the results are promising. Agricultural interventions can ensure that women not only participate and engage in agricultural projects, but that they also control the benefits of their labor.

For women to fully participate in the processes of rural transformation and benefit from the changes that are taking place, they must be able to participate in relatively productive activities, receive the income from their labor and produce, and have some say over that income within their household. Changes in payment structures must be done in conjunction with efforts to change social norms to increase the acceptability of women earning income and being involved in household decisions. Such changes will not only promote better welfare for women and children but also ensure that rural communities grow and thrive.

CASE STUDY 5

The Role of Men in Nutrition: Reflections from Malawi

Elizabeth Mkandawire and Sheryl L. Hendriks[1]

Men's role in nutrition offers opportunities to strategically advance multiple Sustainable Development Goals (SDGs) simultaneously—in particular, SDG 2 on zero hunger and SDG 5 on gender equality. Men's involvement in maternal and child nutrition has been a policy priority since the 1992 First International Conference on Nutrition (FAO 1992a), at which the World Declaration and Plan of Action for Nutrition (FAO 1992b) highlighted that men often control the household resources needed to improve nutrition outcomes. The "men's involvement" approach was more clearly articulated at the 1994 International Conference on Population and Development in Cairo. During this period, a shift was occurring in development approaches, from "women in development" to "gender and development," because experts realized that a focus on women alone was not enough to address the institutionalized power relations that undermined women's equality (Moser 1993). The 1994 Cairo Declaration on Population and Development emphasized the importance of men's shared responsibility in maternal and child health, with specific reference to children's nutrition (UNFPA 1994). The 1995 Beijing Declaration and Platform for Action highlighted the need to understand the roles of both men and women, and the relationship between men and women, in all development actions, and emphasized women's and men's shared responsibility for the family (UN 1995).

Development and nutrition policies that target only women overlook the gender relations that constrain women's access to nutritious food. Moreover, policies that focus on women at the exclusion of men reinforce traditional gender roles and stereotypes that allocate nutrition-related responsibilities solely to women. These policies inadvertently absolve men of their responsibility in this domain, overlooking opportunities for cooperation and complementarity between men and women (Doss et al. 2018). Such policies also miss an opportunity to harness the complementary role of men in sharing responsibility for family well-being.

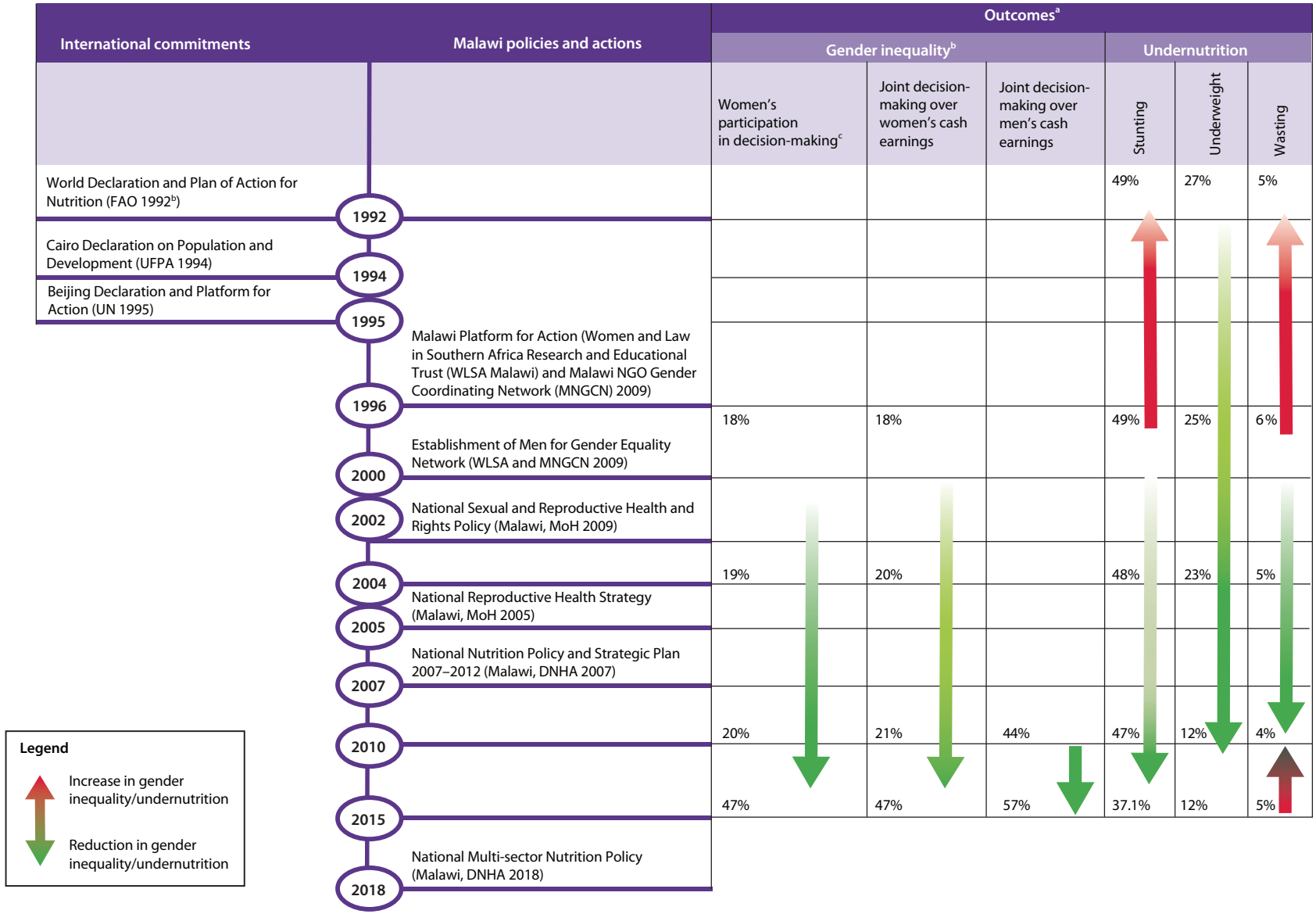
Mainstreaming Men in Nutrition Policy: An Example from Malawi

Efforts to involve men in maternal and child health in Malawi have led to the development of several policies and actions at various levels. The timeline in Figure C5.1 provides a map of the actions and policies implemented in Malawi as a response to its commitments under the international agreements discussed above. According to the 2015–2016 Malawi Demographic and Health Survey (Malawi, NSO and Macro ICF 2017), women's participation in decision-making increased between 2010 and 2015, suggesting a reduction in gender inequality. Undernutrition also decreased quite significantly during this period. Although the policies can be seen as an important factor in improving gender and nutrition outcomes, the depictions in Figure C5.1 are not meant to imply that policies were the only factor contributing to these outcomes.

The first policy to integrate men's involvement in maternal and child health was the 2002 National Reproductive Health Policy. The National Reproductive Health Strategy, adopted in 2006 as the implementation plan for the policy, emphasized men's participation in antenatal clinics. Between 2007 and 2010, Malawi witnessed a high-level commitment to reducing malnutrition, with the president making a personal commitment to decreasing undernutrition. Consequently, when the 2007 National Nutrition Policy and Strategic Plan

1 This study was made possible by the generous support of the American people through the United States Agency for International Development (USAID) under the Feed the Future initiative. The contents are the responsibility of the study authors and do not necessarily reflect the views of USAID or the United States government. We would like to thank the various stakeholders and men and women from rural central Malawi who participated in this study.

FIGURE C5.1—MALAWI TIMELINE OF COMMITMENTS, POLICIES, AND OUTCOMES FOR MEN'S INVOLVEMENT IN MATERNAL AND CHILD HEALTH AND NUTRITION



Source: Authors.

Note: [a] Data on outcomes are sourced from the Malawi Demographic and Health Survey (Malawi, NSO and Macro ICF 1992, 2000, 2004, 2010, and 2015). [b] Gender inequality is measured based on decision-making only. c This indicator includes women's participation in decision-making over their own healthcare, household purchases, purchases for daily household needs, and visits to relatives.

(NNPSP) was developed, the Department of Nutrition, HIV and AIDS (DNHA) was placed in the Office of the President and Cabinet (Babu et al. 2016).

Mkandawire, Hendriks, and Mkandawire-Valhmu (2018) conducted a gender assessment of the 2007 NNPSP. Using a tool called the Integrated Framework for Gender Analysis in Nutrition Policy (GINA), the analysis found that the NNPSP was not gender responsive—that is, it did not go beyond merely acknowledging gender inequalities. For example, the policy highlighted that men are often favored in terms of food and resource distribution at the expense of women and children, but it proposed no actions to overcome this concern. The NNPSP did not promote the reshaping of power relations between men and women, nor did it challenge gender roles. Instead, it perpetuated gender stereotypes by focusing on the role of women in nutrition, reinforcing the idea that only women are responsible for children's nutrition. Even in focusing on women, the NNPSP did not address the constraints women face in accessing nutritious food or healthcare services. For example, the policy aimed to increase the number of women eating diverse foods, but it did not address the challenges that women face in controlling and accessing resources to obtain food. It did not consider men's shared interest in maternal and child nutrition, nor did it take into account gender norms that constrain men from becoming involved, yet it highlighted that most household decisions are made by men (Mkandawire, Hendriks, and Mkandawire-Valhmu 2018).

Several factors contributed to the weak integration of gender in Malawi's first nutrition policy. Mkandawire, Hendriks, and Mkandawire-Valhmu (2018) suggested that the NNPSP had a limited capacity to integrate gender. First, unclear mandates for the Ministry of Gender, Children, Disability and Social Welfare compromised that body's capacity to mainstream gender through the NNPSP (Olivier et al. 2019). Second, policymakers trained in nutrition did not necessarily have the capacity or the will to ensure adequate integration of gender equality. Third, as is often the case, policy decisions were influenced by policymakers' gender perspectives, influencing the ways in which gender was interpreted and articulated in the policy. Fourth, the policy lacked an enforcement mechanism, such as a legally mandated high-level gender supervisory body that ensures adequate integration of gender into all of the country's policies.

In 2012, the Department of Nutrition, HIV and AIDS began revising the NNPSP. As documented by Mkandawire and colleagues (2016), a policy support process using GINA helped policy makers engage in an assessment of the new draft policy. This process enabled them to reflect on gaps and personal biases that had influenced previous decisions. The initial draft of the policy reinforced the role of women in maternal and child nutrition by stating, "The policy shall ensure an increase in men's shared responsibility for childcare and household duties to enable women to have more time to provide optimal childcare" (Malawi, MoH 2016, 17). Men's involvement was mentioned but only in order to contrast it with women's stereotypical role of caring for children. This statement was revised after the policy makers were supported to conduct the assessment. The finalized statement says the policy will ensure that "men's shared responsibility for child care and household duties to enable women['s] participation in social and economic activities is increased" (Malawi, DNHA 2018, 18). The revised National Multi-sector Nutrition Policy for 2018–2022 was adopted in June 2018. In comparison with the previous policy, this new policy places a greater emphasis on the important role men have to play in maternal and child nutrition and gender equality.

Translating Policy to Action

In an effort to implement its 2006–2010 National Reproductive Health Strategy, Malawi put in place some measures to enforce men's involvement in maternal and child nutrition and health. Within the Ministry of Health, efforts to implement men's involvement interventions began as early as 2005 and have been characterized by a combination of bylaws and policies enforced by traditional leaders and government health centers, respectively. Although these regulations reinforce the need for men's engagement and provide incentives and punitive measures to support compliance, the approaches also have unintended consequences that further marginalize vulnerable groups. For example, traditional leaders have established regulations to encourage men to attend antenatal visits with their partners, such as the imposition of fines on men who do not attend. During these visits, men and women are tested for HIV and receive information on the mother's health and well-being. Studies by Bezner-Kerr and others (2016), Kululanga and colleagues (2012), Mkandawire and Hendriks (2018), and Nyondo, Chimwaza, and Muula (2014) suggest that these interventions have increased men's support of women in accessing nutritious food during pregnancy. However, women who, for whatever reason, do not have an accompanying partner are either sent away from the health center or pushed to the back of the line. Not only are these regulations punitive toward women, but their outcome

is also contrary to the international human rights framework as well as the 1994 Malawi constitution, which guarantees the right of women to be free from discrimination on the basis of their marital status (Mkandawire and Hendriks 2018).

It is evident that there is a danger in simply involving men in maternal and child nutrition without channeling these efforts toward gender equality. Sternberg and Hubley (2004) have raised concern that involving men in maternal and child health could increase men's control over women by inviting them to participate in a domain that has previously been occupied only by women. Even though the bylaws are indeed counterintuitive, it is reported that some men have begun taking up work that has traditionally been associated with women, such as cooking and looking after children. As a result of the nutrition education men receive during antenatal visits, they have also reported making concerted efforts to ensure that their pregnant partners have access to nutritious food by, for example, borrowing money to buy milk (Mkandawire and Hendriks 2018).

Conclusions and Implications for Men's Participation in Nutrition

Nutrition policies offer opportunities for simultaneously improving nutrition outcomes and gender equality. Men and women can play complementary roles in nutrition. Policies that overlook men's role miss opportunities to free up women's time to take care of their own needs and engage in productive and leisure activities—essential elements in women's empowerment. Malawi's strong national commitment to involving men in maternal and child health has been overshadowed by the limited capacity of policy makers to integrate gender into policies and programs. One of the main challenges is that many of these international commitments are signed by one set of policy makers, but the sectoral policies are developed and implemented by a different set of policy makers. The mechanism for mainstreaming international commitments into sectoral policies is weak (Olivier et al. 2019). The appropriate integration of such international agreements into national programs is an indication of the level of a country's commitment to addressing the global challenges identified in these agreements. Malawi's initial nutrition policy reflected an overemphasis on women's roles in nutrition, perpetuating gender stereotypes. As the case of Malawi shows, however, application of user-friendly tools such as GINA (Mkandawire et al. 2019) can enhance policymakers' understanding of complex gender issues and their ability to craft policies that better account for such issues. The support of gender experts in policymaking processes is also critical to developing gender-responsive policies. The capacity to conduct gender assessments needs to be strengthened across all levels of policy.

Men's vital role in maternal and child health needs to be articulated in the context of gender equality. Efforts to involve men in maternal and child health have created a new set of gender challenges in Malawi. Local bylaws and regulations incentivize men to accompany their partners to antenatal clinics but inadvertently lead to discrimination against women who, for whatever reason, attend without a partner.

Although involving men in maternal and child nutrition challenges and transforms traditional gender roles, men's involvement in nutrition can foster cooperation between men and women. In Malawi, men's attendance at antenatal clinics has motivated some men to take on more responsibility for women's and children's nutrition. The participation of traditional leaders has been instrumental in increasing the likelihood that interventions will be implemented.

CASE STUDY 6

How Empowered Are Women in African Agriculture?

Ruth Meinzen-Dick, Emily C. Myers, and Agnes Quisumbing[1]

Women's empowerment and gender equality are important for their intrinsic value and because of documented linkages with other Sustainable Development Goals (SDGs), such as eliminating poverty (SDG 1), achieving zero hunger and malnutrition (SDG 2), and good health and well-being for women and children (SDG 3) (Cunningham et al. 2015; Malapit et al. 2015; Ruel, Quisumbing, and Balagamwala 2018; Sraboni et al. 2014). Those who wish to measure progress in women's empowerment need indicators designed to capture the many dimensions of empowerment. The personal and multidimensional nature of empowerment has obstructed attempts to measure it. However, the increasing use of Kabeer's (1999) definition of empowerment as "expansion in people's ability to make strategic life choices in a context where this ability was previously denied to them" (Kabeer 1999, 437) has inspired recent measurement efforts. In Kabeer's definition, the ability to exercise choice encompasses three dimensions: resources, agency, and achievements. *Resources* are defined to include not only access to but also future claims on resources, and include material resources such as land or finances; human resources including not only one's own health and knowledge but also the ability to draw on the labor of others; and social resources, both formal and informal. *Agency* includes processes of decision making, negotiation, and even deception and manipulation. *Achievements* are defined in terms of a range of well-being outcomes, whether tangible such as nutrition or less tangible such as self-confidence and life satisfaction.

In 2012, drawing heavily from Kabeer's definition of empowerment, the International Food Policy Research Institute, the Oxford Poverty and Human Development Initiative, and USAID developed the Women's Empowerment in Agriculture Index (WEAI) to measure and track changes in women's empowerment in agriculture over time and assess differences across countries, regions, and population subgroups (Alkire et al. 2013). Because relatively well-developed indicators of resources and achievements exist, the WEAI focuses on capturing agency, particularly in the agricultural sector, as well as gender parity between the principal adult male and female in the household. The survey was piloted in Uganda, Bangladesh, and Guatemala, and was subsequently included in 19 Feed the Future (FTF) countries' monitoring and evaluation framework as part of the U.S. government's global hunger and food security initiative (Malapit et al. 2014). The WEAI has since been used to diagnose areas of women's disempowerment in agriculture and aid development programs and in the design of interventions to address those areas under the Feed the Future initiative and in studies by more than 98 organizations in more than 54 countries. The index has also been incorporated into the minimum core set of indicators for monitoring the commitments of the Malabo Declaration to promote gender equality in agriculture (AUC, CAADP, and NPCA 2017; see Chapter 1 of this report).

The WEAI is an aggregate index, reported at the country or regional level, based on individual-level data collected by interviewing men and women within the same households, which allows for generalizations and cross-country comparisons. The WEAI comprises two sub-indexes. The first, which is worth 90 percent of the WEAI score, measures the degree to which respondents are empowered in five domains of empowerment (5DE) in agriculture. Those domains are as follows: decisions about agricultural production; access to and decision-making power about productive resources; control of use of income; leadership in the community; and time allocation. Ten composite indicators (Table C6.1) are used to construct the 5DE. Each indicator is given a value of 1 if the respondent has exceeded the threshold for that indicator and a value of 0 if the respondent does not meet the threshold criteria. A person is defined as "empowered" if the weighted sum of these 10 indicators, or 5DE score, is 80 percent or higher. The overall 5DE reflects the

1 Ruth Meinzen-Dick and Agnes Quisumbing acknowledge support from USAID on work related to the WEAI through USAID Grant Number: EEM-G-00-04-00013-00 and helpful comments from Hazel Malapit.

percentage of women and men who are empowered and, among those who are not, the percentage of domains in which they enjoy adequate achievements.

The second sub-index, the Gender Parity Index (GPI), measures gender parity and is weighted as 10 percent of the total WEAI score. The GPI reflects the percentage of women who are empowered or whose achievements are at least as high as the principal man in their households. For those households that have not achieved gender parity, the GPI shows the empowerment gap that needs to be closed for women to reach the same level of empowerment as men in their households. Measuring both men's and women's empowerment is important because different strategies are needed if both men and women are disempowered, compared with cases where only women are disempowered. Moreover, the gender gap in empowerment can have a negative impact on a number of outcomes, beyond the impact of women's disempowerment itself (Malapit et al. 2018).

TABLE C6.1—THE FIVE DOMAINS OF EMPOWERMENT IN THE WEAI

Domain	Indicator	Definition of indicator	Weight
Production	Input in productive decisions	Sole or joint decision making over food and cash crop farming, livestock, and fisheries	1/10
	Autonomy in production	Autonomy in agricultural production (for example, what inputs to buy, what crops to grow, what livestock to raise). Reflects the extent to which the respondent's motivation for decision making reflects his or her values	1/10
Resources	Ownership of assets	Sole or joint ownership of major household assets	1/15
	Purchase, sale, or transfer of assets	Whether respondent participates in decision to buy, sell, or transfer his or her owned assets	1/15
	Access to and decisions on credit	Access to and participation in decision making concerning credit	1/15
Income	Control over use of income	Sole or joint control over income and expenditures	1/5
Leadership	Group member	Whether respondent is an active member in at least one economic or social group	1/10
	Speaking in public	Whether the respondent is comfortable speaking in public concerning various issues such as intervening in a family dispute, ensuring proper payment of wages for public works programs, and so forth	1/10
Time	Workload	Allocation of time to productive and domestic tasks	1/10
	Leisure	Satisfaction with the available time for leisure activities	1/10

Source: Alkire et al. (2013).

Overall Empowerment Scores by Region

Baseline WEAI data exist for 10 African countries in three broad geographical regions: Ethiopia, Kenya, Rwanda, and Uganda in East Africa; Ghana, Liberia, and Senegal in West Africa; and Malawi, Mozambique, and Zambia in Southern Africa (Table C6.2). Higher scores indicate higher levels of empowerment, with 1.0 indicating perfect levels of empowerment. The scores reflect the proportion of women who are empowered and have gender parity but also, for the remainder of women, the depth of their disempowerment and gender disparity. The surveys from which the WEAI data are computed are not nationally representative but are representative of Feed the Future Zones of Influence (ZOIs).[2] Table C6.2 also classifies countries into high, medium, and low rankings based on their score. Although East Africa has two high-scoring countries, Rwanda and Uganda (by ZOI), it also has two low-scoring countries, Ethiopia and Kenya. West Africa demonstrates the lowest levels of achievement, followed by southern Africa, with medium-ranking countries. Again, one should not take these overall patterns of empowerment as characterizing empowerment for countries as a whole because they are not based on nationally representative data.

Identifying Sources of Disempowerment

We can also use the WEAI indicators of empowerment to identify key areas of disempowerment, where 1 minus the score for each indicator gives the proportion of women (or men) who do not meet the threshold for empowerment on that indicator. Figure C6.1 decomposes the WEAI to

2 Zones of Influence (ZOIs) are geographic areas through which Feed the Future is implemented. ZOIs are determined by an area's poverty level, staple food production activities, and ethnic diversity.

TABLE C6.2—5DE, GPI, AND WEAI SCORES, FEED THE FUTURE BASELINES: FEED THE FUTURE ZONES OF INFLUENCE IN AFRICA

Region/country	Year	5DE	GPI	WEAI	Ranking
East Africa					
Ethiopia	2013	0.68	0.87	0.70	Low
Kenya	2013	0.71	0.81	0.72	Low
Rwanda	2012–2013	0.90	0.96	0.91	High
Uganda	2012	0.85	0.92	0.86	High
West Africa					
Ghana	2012	0.70	0.81	0.71	Low
Liberia	2013	0.66	0.95	0.69	Low
Senegal	2012	0.68	0.77	0.69	Low
Southern Africa					
Malawi	2012	0.83	0.91	0.84	Medium
Mozambique	2013–2014	0.82	0.89	0.83	Medium
Zambia	2012	0.79	0.89	0.80	Medium

Source: Kansas State University, Department of Agricultural Economics (2014); Optimal Solutions Group (2013); Westat (2012a, 2012b, 2012c, 2013a, 2013b).

Note: 5DE = five domains of empowerment; GPI = Gender Parity Index; WEAI = Women's Empowerment in Agriculture Index.

identify patterns of disempowerment for women for the seven countries for which we have the raw data to conduct the decomposition analysis. The lack of access to and ability to make decisions on credit emerges among the top three contributors to disempowerment in all seven countries (Table C6.3).[3] Lack of control over the use of income and excessive workload also emerge as important constraints in four out of the seven countries. The excessive workload comes about because of women's important role as agricultural producers in addition to their domestic responsibilities, but these contributions to the household do not always translate into control over the income to which women contribute.

For a deeper analysis of disempowerment, it is instructive to compare the contributions of each indicator to women's and men's disempowerment. Figures C6.2 through C6.8 present visual representations that decompose the contributions of each of the 10 indicators to women's and men's disempowerment (1 minus 5DE) scores for three countries in East Africa (Kenya, Rwanda, Uganda), two countries in West Africa (Ghana, Liberia), and two countries in southern Africa (Malawi, Zambia). These data demonstrate that the decomposition of the disempowerment scores may be useful diagnostic tools because they reveal which areas constrain women's and men's empowerment the most.

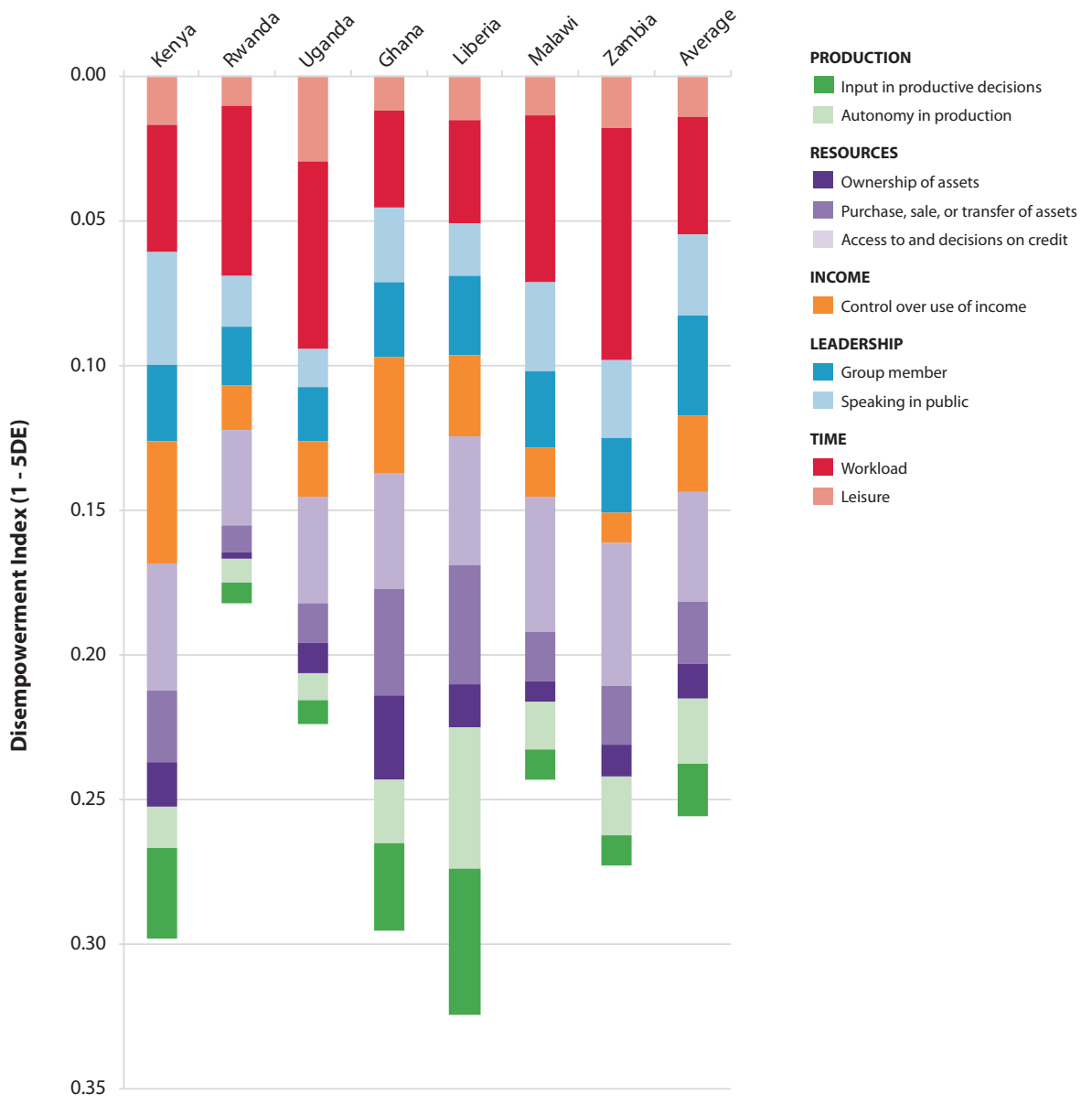
In all seven African countries, women are more disempowered than men. Excessive workload emerges as an important contributor to disempowerment for men and women alike, with women more constrained in this indicator than men. Limited access to and control of credit is a constraint for both women and men, but the extent of disempowerment with respect to this indicator is also greater for women.

There is some variability across regions and across countries within regions. In the East African countries, for example, although workload and lack of access and control over credit are important sources of disempowerment, lack of control over the use of the income is a source of women's (but not men's) disempowerment in Kenya and Uganda. Lack of membership in groups is an important source of disempowerment for both women and men alike in Rwanda and in Uganda.

In the two West African countries in our sample, other sources of disempowerment come into play. In Ghana, disempowerment with respect to being able to purchase, sell, or transfer assets, access to and control of credit, and control over income are sources of women's, but not men's, disempowerment. In Liberia, women are disempowered with respect to input into production decisions, autonomy in production, and the purchase, sale,

3 Note that the original WEAI counts respondents as "adequate" on credit only if they have taken a loan. Those who do not take a loan because they do not need or want one would therefore also be counted as inadequate on this indicator. The pro-WEAI has corrected this by adding a question on whether the respondent could take a loan if they wanted to.

FIGURE C6.1—WOMEN'S DISEMPOWERMENT SCORES



Source: Kansas State University, Department of Agricultural Economics (2014); Optimal Solutions Group (2013); Westat (2012a, 2012b, 2012c, 2013a, 2013b).

and transfer of assets, credit, and workload. Interestingly, input into production decisions is not a major source of disempowerment for men, but the contributions of workload, credit, and autonomy to disempowerment are fairly similar for men and women.

Finally, in the two southern African countries, workload is the biggest contributor to disempowerment for men and women alike, although women are more disempowered with respect to this indicator than men. Speaking in public is also a source of disempowerment for women but not for men.

Identifying major sources of disempowerment for women and men can be a valuable diagnostic exercise to guide policies and investments in programs to address key areas of disempowerment. These results indicate that in all seven countries, improving access to and decision making over credit would be important for both men and women. Technologies and investments that reduce women's workload would be particularly beneficial in Kenya, Malawi, Uganda, and Zambia. That could include domestic water supply or clean fuel as well as other domestic or agricultural labor-saving devices. Results also highlight the importance of increasing women's control over income in Ghana, Kenya, Rwanda, and Uganda. For example, agricultural programs to increase marketing of produce should ensure that women gain or retain control of income rather than having it go to male "heads of households."

TABLE C6.3—TOP CONTRIBUTORS TO WOMEN'S DISEMPOWERMENT, AFRICA

Constraints	East Africa			Southern Africa		West Africa		Number of countries where among top three constraints
	Kenya	Rwanda	Uganda	Malawi	Zambia	Ghana	Liberia	
Input in productive decisions							1	1
Autonomy in production							2	1
Ownership of assets								
Purchase, sale, or transfer of assets						2		1
Access to and decisions on credit	1	1	2	2	2	1	3	7
Control over use of income	3	3	3			1		4
Group member		2						1
Speaking in public				3	3			2
Workload	2		1	1	1			4
Leisure								

Source: Kansas State University, Department of Agricultural Economics (2014); Optimal Solutions Group (2013); Westat (2012a, 2012b, 2012c, 2013a, 2013b).

Note: The table was constructed in the following manner: The top three of 10 indicators representing the greatest constraints to empowerment were identified and ranked for women in each country; they are indicated by a "1," "2," or "3" in each of the country columns for first, second, and third greatest constraint, respectively. The last column represents the number of countries in which a given indicator was a top constraint, with each constraint weighted equally.

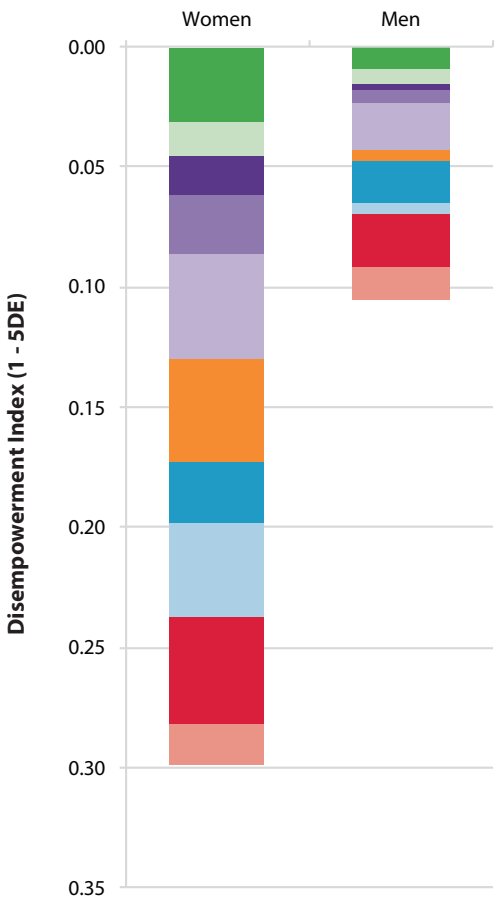
Can We Measure Progress toward Gender Equality?

Commitment 4 of the Malabo Declaration aims to halve poverty by 2025 in Africa through inclusive agricultural growth and transformation with a specific emphasis on the role of gender in agriculture: "to support and facilitate preferential entry and participation for women and youth in gainful and attractive agri-business opportunities." The Comprehensive Africa Agriculture Development Programme (CAADP) biennial reporting framework and guidelines recommend the use of the 5DE to track progress toward attaining commitment 4 (as indicator 4.4—the proportion of rural women that are empowered in agriculture; see AUC, CAADP, and NPCA 2017).

For either the WEAI or the 5DE to be used to monitor progress toward women's empowerment, the data need to be collected regularly with similar methods. Because the WEAI was still being developed when it was initially fielded, survey implementers had problems with the length of the questionnaire as well as with some questions that were more difficult to implement. These issues have been addressed with the creation of an abbreviated version of the WEAI (the A-WEAI) (Malapit et al. 2017) and more systematic cognitive interviewing (Malapit, Sproule, and Kovarik 2017) to ensure that respondents understand what is being asked. In 2015, the Feed the Future countries conducted midline surveys that included nine out of the 10 WEAI indicators (excluding the autonomy indicator), administered in the same areas but, with the exceptions of Ethiopia and Senegal, administered only to women. The change in survey instrument and coverage makes it possible to assess progress in gender equality only in Ethiopia and Senegal. Only indicator-by-indicator comparisons are possible for the other countries.

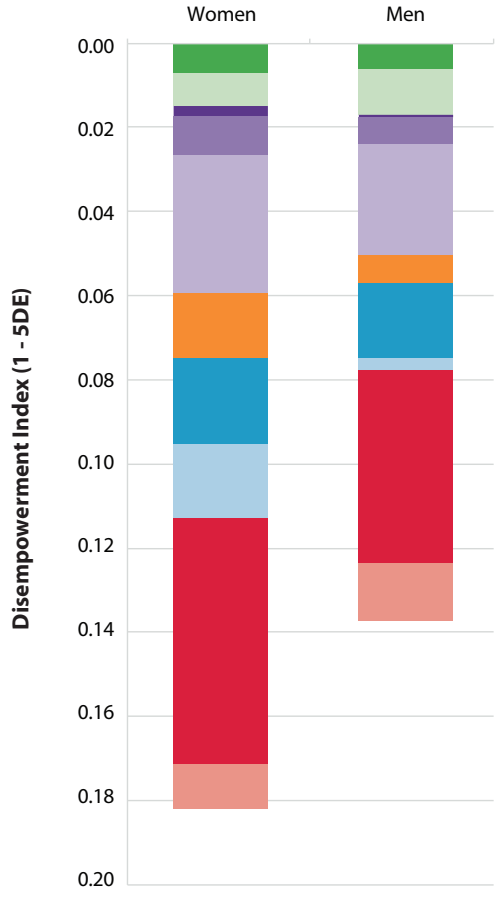
The case of Ethiopia illustrates what can be learned by collecting WEAI data using the same methodology over time. Figure C6.9 presents the WEAI, 5DE, and GPI scores for Women in Ethiopia in 2013 and 2015.

FIGURE C6.2—WOMEN'S AND MEN'S DISEMPOWERMENT IN KENYA



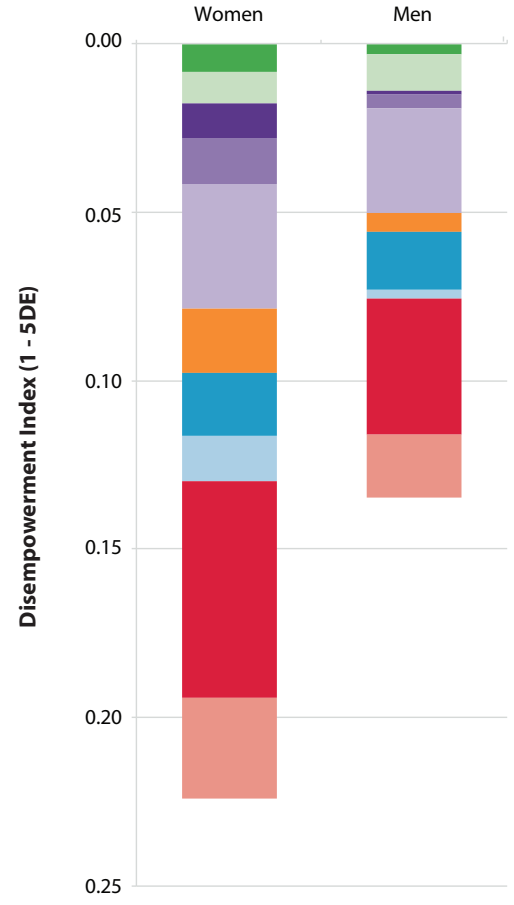
Source: 2013a. "FTF FEEDBACK Population Based Survey: Northern Kenya." Unpublished, Rockville, MD, US.

FIGURE C6.3—WOMEN'S AND MEN'S DISEMPOWERMENT IN RWANDA



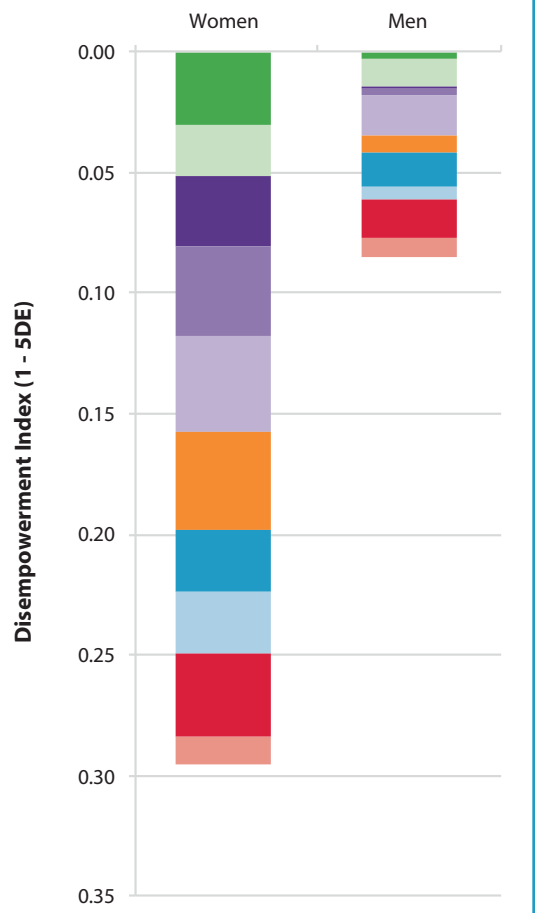
Source: 2013b. "FTF FEEDBACK Population Based Survey: Rwanda." Unpublished, Rockville, MD, US.

FIGURE C6.4—WOMEN'S AND MEN'S DISEMPOWERMENT IN UGANDA



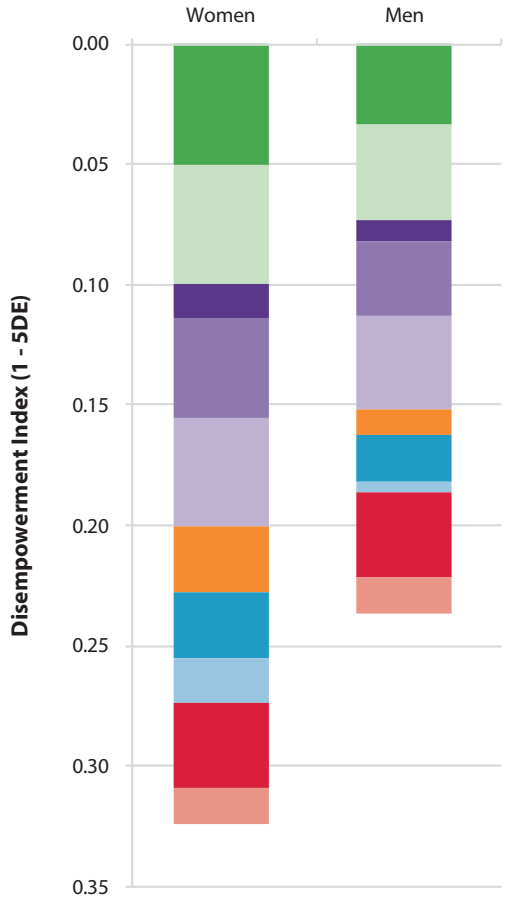
Source: Westat. 2012b. "FTF FEEDBACK Population Based Survey: Uganda." Unpublished, Rockville, MD, US.

FIGURE C6.5—WOMEN'S AND MEN'S DISEMPOWERMENT IN GHANA



Source: Kansas State University, Department of Agricultural Economics. 2014. "Baseline Feed the Future Indicators for Ghana 2012." Manhattan, KS, US.

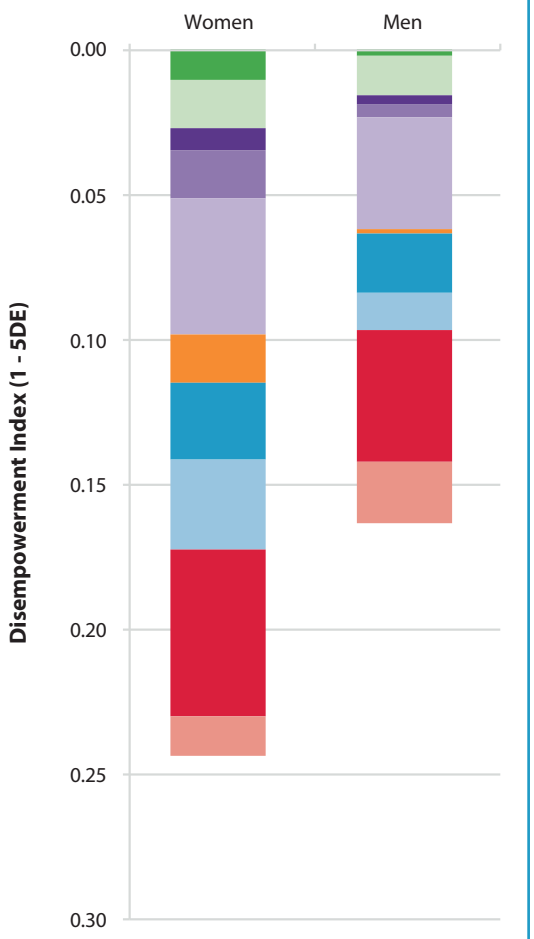
FIGURE C6.6—WOMEN'S AND MEN'S DISEMPOWERMENT IN LIBERIA



Source: Optimal Solutions Group. 2013. "USAID Liberia Feed the Future Population-Based Survey Final Report." College Park, MD, US.

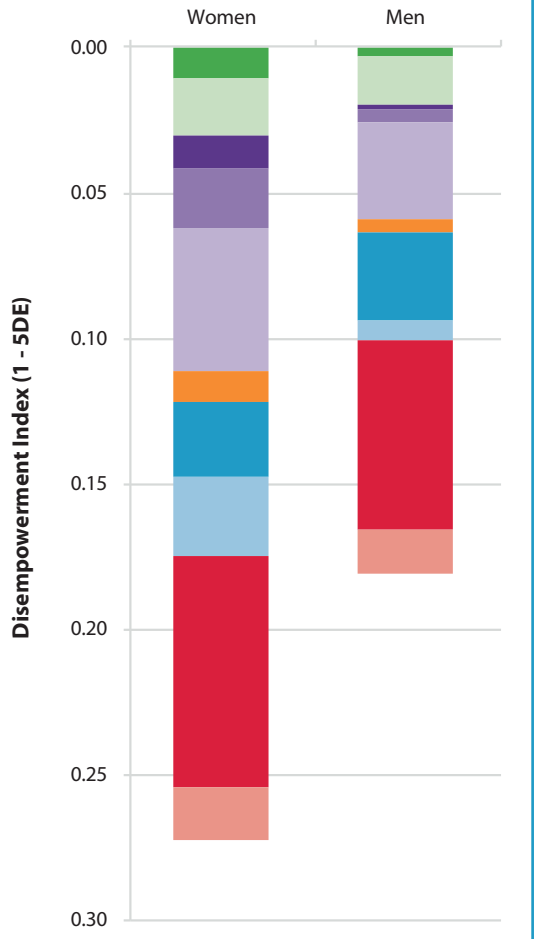
Leisure
Workload
Speaking in public
Group member
Control over use of income
Access to and decisions on credit
Purchase, sale, or transfer of assets
Ownership of assets
Autonomy in production
Input in productive decisions

FIGURE C6.7—WOMEN'S AND MEN'S DISEMPOWERMENT IN MALAWI



Source: Westat. 2012a. "FTF FEEDBACK Population Based Survey: Malawi." Unpublished, Rockville, MD, US.

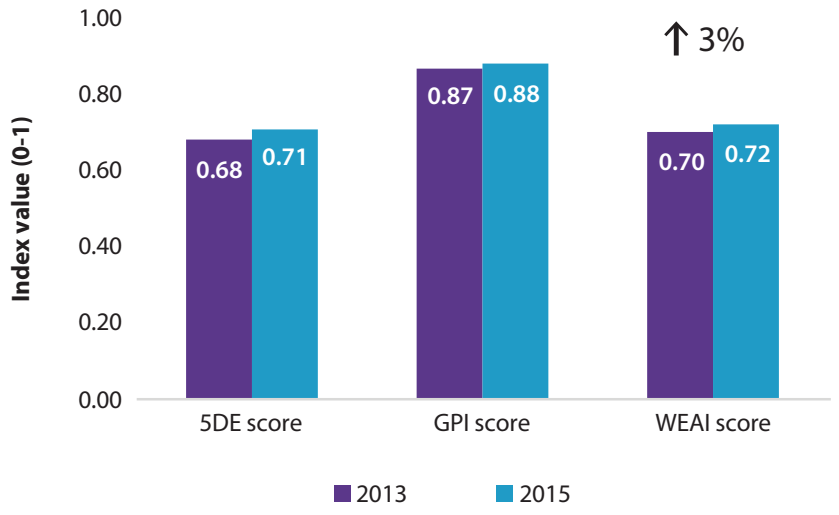
FIGURE C6.8—WOMEN'S AND MEN'S DISEMPOWERMENT IN ZAMBIA



Source: Westat. 2012c. "FTF FEEDBACK Population Based Survey: Zambia." Unpublished, Rockville, MD, US.

Leisure
Workload
Speaking in public
Group member
Control over use of income
Access to and decisions on credit
Purchase, sale, or transfer of assets
Ownership of assets
Autonomy in production
Input in productive decisions

FIGURE C6.9—WEAI, 5DE, AND GPI SCORES FOR WOMEN IN ETHIOPIA



Source: Feed the Future (2018).

Between 2013 and 2015, both Ethiopian women and men experienced modest gains in their 5DE scores (Feed the Future 2018). Ethiopian women experienced very modest improvements in empowerment as their WEAI score increased by 3 percent in two years. Their 5DE score in 2015 was 0.71, which was marginally higher than the 5DE in 2013 at 0.68. Women's GPI score increased by 1 percent from 0.87 to 0.88, which indicates a slight rise in gender equality within a household.

In 2015, similar to 2013, in all 10 indicators, a greater proportion of men than women achieved adequacy. This gap has increased over time (Figure C6.10). The indicators exhibiting the greatest gap in male-versus-female achievement are speaking in public, access to credit, and workload. In terms of the contribution of each indicator to women's total disempowerment, we see no statistically significant changes for any of the indicators from 2013 to 2015. Group membership and speaking in public remain top contributors to women's disempowerment; group membership is also consistently a top contributor to disempowerment among men. Because the baseline and midline data are from population-based surveys at the ZOI level, it is not possible to attribute changes to particular programs, but further developments of a project-level WEAI (pro-WEAI) can be used to test the effect of interventions on women's empowerment (see Malapit et al. 2019).

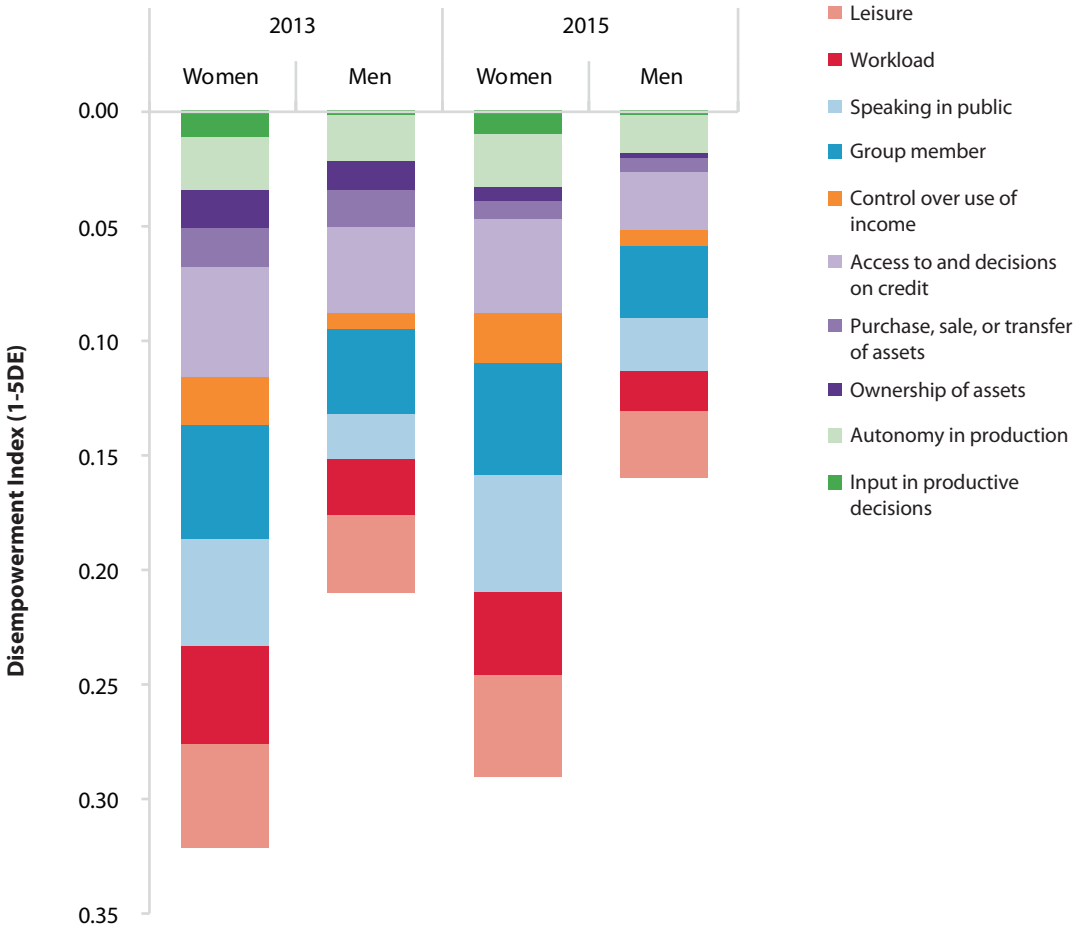
Further analysis of the WEAI data in relation to other outcomes shows that women's empowerment is positively related to children's and women's dietary diversity (Yimer and Tadesse 2015). Group membership, the amount of time spent on paid and unpaid activities, decisions on income, and autonomy in production are positively associated with women's dietary diversity. Such findings are consistent with evidence that the WEAI indicators of women's empowerment are associated with improved nutritional outcomes for women and children in Ghana, Mozambique, Bangladesh, Nepal, and Cambodia (Malapit and Quisumbing 2015; Komatsu, Malapit, and Theis 2018; Malapit et al. 2015, 2018; Sraboni et al. 2014; Sraboni and Quisumbing 2018). Other research finds a positive relationship between women's WEAI empowerment indicators and agricultural productivity in Kenya (Diiro et al. 2018), Niger (Wouterse 2017, 2019), and Bangladesh (Seymour 2017).

The WEAI results from Ethiopia and the accumulating evidence that WEAI indicators are associated with improved agricultural and nutrition outcomes have informed the Ethiopian government's National Nutrition Program, which recognizes women's lack of access to and control over household resources, time, knowledge, and social support networks as barriers to improving nutrition outcomes, prompting government efforts to design and implement projects to empower women to increase their engagement in and control over economic activities. Additionally, the United Nation's Joint Programme on Accelerating Progress towards the Economic Empowerment of Rural Women in Ethiopia has adopted a multisectoral and comprehensive approach to reduce gender inequalities related to increasing women's access to resources, credit, and financial services; decision making within the household; and participation in the community in pastoralist communities (Feed the Future 2018).

Measuring women's empowerment is not just an academic exercise. Experience with the WEAI suggests that this metric can be used to diagnose areas of women's and men's disempowerment and to design programs and policies to address them. For example, low baseline WEAI scores in Bangladesh

combined with evidence that women's empowerment is associated with household food security and nutritional outcomes prompted USAID and the government of Bangladesh to develop programming to address women's empowerment. WEAI scores increased by 17 percent in four years, showing that progress is possible. WEAI results have been used by the Ministry of Agriculture to identify interventions in promoting women's empowerment, increasing agricultural diversity, and improving nutrition, to be implemented nationally in Bangladesh. The Feed the Future initiative will soon be collecting end line data to assess the impact of this 19-country program. In addition, the possibility of collecting indicators of women's empowerment in the comprehensive agricultural surveys being planned for the 50 X 2030 Initiative, an ambitious effort to conduct regular surveys of farming households in 50 low- and lower-middle-income countries by 2030, means that even more information will be available for monitoring women's empowerment over time.[4] Further evidence on how programmatic interventions affect women's empowerment from impact assessments using the pro-WEAI can provide more detailed guidance on effective strategies (Malapit et al. 2019). As these data are collected and analyzed, researchers and policy makers will have even more information with which to assess progress toward women's empowerment and gender equality in Africa.

FIGURE C6.10—CONTRIBUTION OF EACH INDICATOR TO DISEMPOWERMENT



Source: Feed the Future (2018).

4 For more on the 50 X 2030 Initiative, see: http://www.data4sdgs.org/50by2030.