

# Building a Gender-Transformative Extension and Advisory Facilitation System in Sub-Saharan Africa

Cathy Rozel Farnworth<sup>a</sup> and Kathleen Earl Colverson<sup>b</sup>

<sup>a</sup> Independent Consultant <sup>b</sup> College of Agriculture, University of Florida.

## Abstract

Rural advisory services operate in environments structured *a priori* by gender relations. Women often experience weaker access to productive resources and decision-making power within the household, lower and less effective participation in community-level decisionmaking bodies, in value chain networks, and in innovation platforms. They are less often reached by extension and advisory services. This can make it difficult for women to implement their ideas and to act on recommendations. What must change if women are to not only access, but work effectively with extension and advisory services? Tackling the underlying gender relations that hamper access and implementation is a priority. To achieve this, it is useful to think of the extension and advisory services as a facilitation *system* rather than a service and to reconfigure it accordingly. Existing “best bet practices” can be captured, integrated, and scaled out to build an empowering extension and advisory facilitation system.

**Keywords:** *Extension; Agriculture; Gender; Sub-Saharan Africa; Gender Transformative Methodologies*

## Introduction

Gender is an organizing principle in almost every farming system, with women and men frequently taking on distinct responsibilities for particular tasks, crops, and livestock within a farming system. Any intervention in the sector by extension and advisory services will shape—and be shaped by—gender relations. Its effectiveness will rely greatly on the degree to which it has acknowledged and worked with gender relations as part of a wider systemic approach to improving agricultural and development outcomes.

Researchers and practitioners working on gender contend that empowered women and men are better, more successful farmers who are likely to make the most of their opportunities. They argue that improving productivity is insufficient when there are not concomitant measures to strengthen women's voices. There is a causal relation between more equal gender relations in the household/community and better agricultural and development outcomes (Farnworth *et al.*, 2013; OECD, 2010). The World Bank (O'Sullivan *et al.*, 2014) found that productivity on women's farms in six African countries was significantly lower per hectare compared to men, ranging from 13 percent in Uganda to 25 percent in Malawi. This is because women tend to be locked out of land ownership, access to credit, productive farm inputs (like fertilizers, pesticides, and farming tools), support from extension services, access to markets, and other factors central to improving productivity. Significantly, the report notes that equal access to resources such as fertilizer, farm labor, and training does not necessarily translate into equal returns for women farmers, nor into empowerment. The Gender Strategy of the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) argues that gender equity gaps mean women and men have different vulnerabilities to climate change and different adaptive capacities to deal with it (Ashby *et*

*al.*, 2012). The FAO's State of Food and Agriculture Report (FAO, 2011), responding to data and arguments like these, considers that "if women had the same access to productive resources as men, they could increase yields on their farms by 20-30 percent".

However, much more should be expected from this work on gender. FAO's claim appears to be predicated on the assumption that women and men in male-headed households will continue to manage their plots more or less separately—a significant feature of farming in many parts (though not all) of Sub-Saharan Africa. However, we posit that for women and men in households where this occurs, effective *partnership* between women and men based on more equal gender relations is likely to result in higher productivity, as well as other gains. This is because FAO's figures assume male productivity will remain unchanged whilst female productivity will increase. Yet female productivity in many parts of the continent is unlikely to increase significantly unless there are massive changes in gender relations around access and control over critical resources. This in turn will not occur unless men consider themselves partners and beneficiaries of gender equality and asset sharing. One may further posit that gender inequalities contribute to low *male* productivity in smallholder systems, a contention which is being explored empirically by the International Food Policy Research Institute (IFPRI) gender and assets program, among others (see for example Quisumbing *et al.*, 2014). This and other work shows that too much gender analysis has been constructed around explicit and implicit dichotomies—his assets vs. her assets—thus failing to sufficiently pick up on collaborative decision-making processes around assets (Fafchamps and Quisumbing, 2002). Analytic over-simplicity undoubtedly has knock-on effects for how development partners work with farmers.

This paper argues that there is no point in continuing business as usual—more extension, better information, more fertilizer, better machinery—unless women and men are equally enabled to act as rational economic decision-makers unhindered by gender norms. Empowering women alongside men as decision-makers in all areas of their lives is challenging and exciting, and is a central element of poverty reduction. Transforming gender relations—part of which involves building on existing collaborative gender norms and practices at the household and community level—will help to make smallholder agriculture and associated agricultural development more effective and efficient, with benefits for a variety of development outcomes. Of course, empowerment is also a goal in itself.

In this paper, we provide evidence for a "conceptual lock in" in rural advisory services, one that constructs farmers as male regardless of the reality of female farmers on the ground. We show that this not only hampers access by women to advisory services, it also fails to tackle the underlying gender inequalities that prevent both women and men from maximizing their decision-making capacity and economic potential. Such constructions work to undermine existing collaborative processes (Farnworth and Hutchings, 2009).

We then build a model for a "gender-transformative extension and advisory facilitation system" (GT-EAFS). The realization of such a system requires an "empowerment pathway" in order to link the various components. We provide a sampling of existing innovative practices that could be brought in to help create such a pathway (and thus realize a GT-EAFS). The practices have been evaluated to different degrees. They have been selected because they appear to be saying and doing something new about transforming gender relations.

### Conceptual “lock-in”

Women typically access fewer rural advisory services than men (Manfre *et al.*, 2013; Kristjanson *et al.*, 2010). Many such services still engage primarily with men and better-off socioeconomic groups. In Sub-Saharan Africa, this is a particular concern given that women strongly participate in farming across most of the continent. Average labor force participation ranges from just over 40 percent in southern Africa to just over 50 percent in eastern Africa (Raney *et al.*, 2011; FAO, 2011). Time-use data series help provide a more complete account of time contributions to agriculture by men and women than labor force statistics. Estimates of the time contribution of women to agricultural activities range from about 30 percent in The Gambia to 60-80 percent in different parts of Cameroon (Raney *et al.*, 2011). At the same time, Sub-Saharan Africa continues to face serious development challenges in the agricultural sector, with production and productivity remaining low (African Development Bank Group, 2011). Production data per capita (of the total population) shows the amount of food grown on the continent per person rose slowly in the 1960s, then fell in the mid-1970s, and has only just recovered to 1960 levels today (Pretty *et al.*, 2011).

There are many reasons for low production and productivity, and gender inequalities around the control and deployment of agricultural assets is one of them. Strong male outmigration from rural areas in many regions—particularly southern Africa—is compounding gender inequalities in the farming sector with women (often elderly) being left to manage the farm (Dodson *et al.*, 2008). Chronic illnesses like HIV/AIDS have gendered effects on the farm labor force, including the death of women and men in their economic prime. This is resulting in major reconfigurations of households in many countries (Ayieko, 1997). In the Rift Valley and North Eastern provinces in Kenya, increasing numbers of households are headed by women, children, young adults, and elderly people (Gabrielsson and Ranasar, 2012; Oyugi, 2000).

Despite some evidence of increased attention by governments, NGOs, and bilateral and multilateral agencies to securing access for women to extension and advisory services (Manfre *et al.*, 2013; Ragasa *et al.*, 2013; Kristjanson *et al.*, 2010; FAO, 2011; IAASTD, 2008; World Bank, 2008a; World Bank, 2008b) universal coverage oriented to the specific needs of women farmers remains stubbornly out of reach. We argue that this is because of a conceptual “lock-in”. In the Sub-Saharan African context, despite decades-worth of evidence of women’s multi-faceted roles in farm-based livelihoods, men are frequently still considered the lead farmer (with primarily commercial interests) while women are considered as principally subsistence farmers (primarily interested in feeding their households). Agricultural research is often conducted according to this assumed dichotomy and in so doing often provides extension interventions with inappropriate information. Pretty *et al.* (2011) note simply that women are under-represented in research and governance systems and are routinely ignored by external agencies. Conceptual lock-in is hard to escape, yet escape we must if women as well as men are to be reached and if the poorest are to be included by rural advisory services.

Conceptual lock-in is hard to tackle because it is so deeply rooted in (frequently unquestioned) conceptual frameworks, frameworks that in turn guide strategy development and implementation. Many policymakers and rural advisory services implicitly or explicitly characterize their target groups according to features such as “head of household”, or “cash crop/subsistence crop farmer” (Manfre *et al.*, 2013) and plan their programming accordingly, regardless of who actually does what, and what the gender interests of the farmers they work with may be. Partnerships between

ministries of agriculture and ministries for women are often weak, meaning that understandings of gender may not be properly shared through collaborative activities. Much gender analysis itself creates dichotomies. For example, the immensely influential Harvard Analytical Framework, sometimes called The Gender Roles Framework, works to distinguish male and female contributions to the economy by mapping the work and resources of men and women in a community and highlighting the main differences between them (March *et al.*, 1999). It has undoubtedly contributed a vast amount of information on women and men's gender roles and responsibilities (Moser, 2002), but at the same time has arguably obscured cooperative strategies as well as simplified what the terms “access”, “control”, and “ownership” actually mean in different societies. All this helps create scenarios wherein men are seen as key farmers. The emphasis in the Comprehensive African Agricultural Development Programmes (CAADP) and national policies on the commercialization of the smallholder sector generally privilege male investment capacity (Akanji, 2013). It is undoubtedly simpler to work with male farmers because they have a relatively free hand in resource allocation. The male farmer remains the conceptual norm, however outmoded this may be when it comes to the actual relative numbers of women and men in farming and what men and women actually do on the farm (Farnworth, 2010). We now elaborate on these points by providing examples of conceptual lock-in.

### *Men Farm and Women Garden*

Biases in rural advisory services often arise as a consequence of the belief that men manage livestock and crops destined for the market, while women operate largely outside the market economy (or in very limited parts of it). In Ethiopia, the Women's Development and Change extension package assumes that women garden rather than farm, and thus provides advice related to home gardens and poultry (Cohen and Lemma, 2011). In Zambia, the Conservation Farmers Union generally considers men responsible for cash crops and key decision-makers and designs its extension work accordingly (Nyanga, 2012a; Nyanga, 2012b; Maal, 2011).

However, empirical research shows that male/female distinctions in terms of crop and livestock management or market/subsistence production are rarely clear-cut. A study conducted in Ghana concluded that, despite cultural perceptions about men's and women's crops, no crops are grown exclusively or predominantly by women, and only a few are grown exclusively or predominantly by men (FAO, 2011; Doss, 2002). Research into gene flows frequently suffers from similar biases. It is commonly assumed that women's interests in improved genetic material relate solely to the domestic needs of the household, rather than to their interest in commercial markets—even in areas where women are self-evidently the main traders in informal markets and have substantial interests in processing crops for formal market sale (Farnworth and Jiggins, 2003). One study searching for the gaps that may exist between the “ideal” and the “actual”—between what people say and what they actually do—followed up on a study conducted among Karamajong male household heads in a semi-nomadic pastoral area in Uganda, where pastoralist households also farm. The first study suggested that women and girls worked in agriculture, whilst men and boys looked after the cattle. The second study revealed that men accounted for 35 percent of the labor in planting sorghum, 50 percent of the labor in planting millet, a third of the labor in weeding millet fields, and over 50 percent of the labor during harvest (Dyson-Hudson, 1972).

At the same time, it is well established that crops and livestock associated with women can indeed become “male” following commercialization. A study of trends in pastoralist societies showed that when marketing led pastoralists to shift from large to small stock, women's role in managing small

stock diminished (Sikana and Kerven, 1991). Loss of female control occurs frequently when livestock enterprises increase in size, with decision-making, income, and sometimes the entire enterprise shifting to men. This is primarily because women, whilst often central to livestock management, rarely own the means of production—land, water, feed resources—and seldom sell in large quantities or at livestock markets, and thus lack the investment capacity to “step up” (Doss *et al.*, 2012). In many countries, women have been responsible for marketing traditional crops such as sorghum, cassava, and leafy vegetables in local markets. However, in countries where urban markets for such crops are expanding rapidly—such as Cameroon, Zambia, and Kenya—it is proving difficult for women to retain control over production, processing, and marketing. In Kampala, Uganda, strong demand for leafy vegetables—traditionally a woman’s crop—resulted in men taking over their sale (Shiundu and Oniang’o, 2007).

This discussion shows that terms like “women’s crops” and “men’s crops” tend to be vague and misused. They do not necessarily mean that a particular sex is responsible for the whole production cycle. Indeed, most crops and livestock are produced in complex interactive processes. Often such terms refer to who has ultimate control over the sale or disposal of the product and the use of the income derived. In many parts of Kenya, maize is considered a “male” crop, yet women work on almost all aspects of maize production, except the final marketing (Farnworth *et al.*, 2012).

#### *Male Household Heads are the Primary Farmers*

A pernicious conceptual lock-in is the assumption that the household head is also the primary farmer (Manfre *et al.*, 2013; Jiggins *et al.*, 1998). This frequently means that survey questionnaires developed by extension services are administered only to men. This can result in subsuming the agricultural interests of women in male-headed households, as well as poor data resulting from the fact that women in the household may be indeed be the primary farmers but are not questioned by enumerators (Farnworth and Jiggins, 2003).

This is important because the majority of extension packages are considered “gender neutral” and are based on the assumption that women and men can “opt in” to certain elements freely. This is not necessarily the case. Such packages ignore the fact that men may (partly) control their wife’s labor, and that access to and control over land and other productive assets—including information and investment capital—may be strongly skewed toward men (O’Sullivan *et al.*, 2014; Nyanga, 2012a; FAO, 2011; Udry, 1996). In Ethiopia, for example, farm households generally operate as centralized units under the control of the household head, irrespective of ownership of specific assets at or after marriage (Fafchamps and Qisumbing, 2002).

Quantification of women’s and men’s respective research portfolios in Ethiopia’s Oromiya region shows that, overall, women access fewer resources than men, and that female-headed households’ access the least. Interestingly, people able to access one type of resource are more likely to access other types of resources—both concrete and symbolic— due to the ways in which access to resources generates increased social standing, credit-worthiness and increased decision-making power at the community level. This in turn strengthens opportunities for further asset accumulation. (Torkelsson and Tassew, 2008). This process generates an ever-increasing, often gendered discrepancy in livelihood portfolios and options.

Preference for particular livestock species is partly generated by agro-ecologies, but also by gendered roles in the household. Male-headed households tend to prefer oxen, as they can be used for ploughing (a typically male task), whereas female-headed households with access to credit

prefer breeding cattle. Chickens are selected by female-headed households with a small number of dependents. Livestock-based interventions need to consider household typologies, gender roles, and access to crop residues (Tegebu *et al.*, 2012).

### *Households Have the Same Interests*

Empirical and conceptual work has definitively established that many households in Sub-Saharan Africa cannot be treated as a single economic unit that makes a single set of production and consumption decisions to the equal benefit of all household members (Njuki and Mburu, 2013; Njuki *et al.*, 2011; Doss, 1999; Sen, 1990; Fafchamps and Quisumbing, 2002). Many household types exist across Sub-Saharan Africa. Female-headed households—*de facto* and *de jure*—are widespread. Orphan-headed households are increasingly common. Some people are choosing not to marry, or to engage in sequential or concurrent relationships. Wider kinship-based relationships can be important. Doss (1999) observes “the African farm household is a diversified and multifaceted economic entity. It pursues numerous agricultural and non-agricultural enterprises and operates within elaborate networks ... households include people with competing goals and objectives, cooperating fully on some issues and less so on others”.

In some cases, production and consumption units are not the same. A study of the impact of commercialization among the Fulani in northern Nigeria demonstrated that women fully control earnings from dairy, whereas men control monies from the sale of livestock. As livestock markets have developed, men have taken over milking to ensure calves receive enough milk. This has negatively impacted women’s ability to care for their matrifocal households under polygamous relationships (Waters-Bayer, 1985, 1988). Failure by the extension and advisory services to understand the complex access and use rights to animals and their products can create or exacerbate tensions between women and men. There is no one way of “being a household”. Extension based on an underlying assumption that decision-making processes follow a centralized, nuclear family model will fail.

### *Female-Headed Households are All the Same*

A common assumption is that all female-headed households are poor, so no effort is made to distinguish between different types of female-headed households—for instance *de jure* and *de facto*—and their agricultural needs. These types can be very different. Bean research in Malawi and Rwanda initially pinpointed women farmers—both within male-headed and in female-headed households—as the key producers of beans, the custodians of bean seeds and seed selection, and the most knowledgeable about the target crop and associated agro-ecosystems. Further research added significant nuances to these broad-brush findings, revealing important regional and socio-economic differences among different categories of women with respect to preferences and selection criteria (Farnworth and Jiggins, 2003; Sperling *et al.*, 1993; Ferguson, 1992).

A study (Ragasa *et al.*, 2013) conducted in Ethiopia showed that female-headed households and women plot managers are less likely to receive extension services through various channels than their male counterparts. Male heads are more likely to be visited, to attend community meetings, and to visit demonstration plots and research centers. That said, the study found that female-headed households with more male members are more likely to be visited (and to participate in various extension events) than female-headed households comprised primarily of women. Furthermore, *de jure* female heads of household have significantly less access to community meetings and radio than *de facto* (where the man has emigrated for work) female heads. Whilst

both male and female respondents discuss agricultural issues within networks, female heads have fewer networks than male heads. Gender differences in size of landholding and lower access to extension explain lower technology adoption by women household heads. However, all things being equal, female household heads and plot managers are equally willing to adopt as men. The Ethiopian findings point to the efficacy of relative autonomy in decision-making experienced by female household heads; they also underline the relative disadvantages in terms of asset ownership and networks faced by different categories of female-headed households.

### *Critical Agricultural Research Continues to be Gender-blind*

Over the past forty years, considerable gender analysis has highlighted the significance of gender relations in agricultural productivity and production. However, there is a paucity of gender research around some critical technologies. Research around conservation agriculture in Sub-Saharan Africa, of late touted as an important climate change mitigation and adaptation technology, is a case in point. Many studies (e.g. Andersson and D'Souza, 2014; Tshuma *et al.*, 2012; Baudron *et al.*, 2012; Giller *et al.* 2009) seek to analyze the determinants of farmer adoption, and dis-adoption, of conservation agricultural practices. Yet conservation agriculture interventions and conservation agriculture-related practices are rarely discussed in terms of their impact on women, and even less in terms of whether women can manipulate such interventions to change various aspects of gender relations in their favor. This is despite the fact that the introduction of conservation agriculture will inevitably involve a reallocation of women's resources including their time and labor, as well as having an impact on their ability to realize gendered interests and aspirations.

Many studies note "family labor" as a constraint—particularly when zero tillage is not complemented by the application of herbicides— without mentioning the gender of the person who is not managing labor sufficiently (Umar *et al.*, 2012; Arslan *et al.*, 2014; Giller *et al.*, 2009). Almost no studies acknowledge that labor comprises the work of boys and girls, women and men; and that rural women everywhere have considerably less time than men for unpaid farm work, waged work, and marketing due to their responsibilities for household food preparation, child care, household chores, and water and wood collection (Raney *et al.*, 2011), or that women's labor is rarely interchangeable with men's labor.

### *Advisory Service Delivery Can Compound Structural Inequalities*

On occasion, researcher biases can contribute to gender-biased extension practices in the field. In Zambia, the majority of conservation agriculture training is disseminated through the CFU (Conservation Farming Union). The CFU generally lacks expertise in gender, although many of the farmers it works with are women (Maal, 2011). At camp level, farmers are identified via selection committees. Members of such committees need to be landholders. Given the fact that women rarely hold land solely, members are almost always men. The selection committee selects 28 lead farmers—who must themselves be landholders—to work with. They are trained by the CFU in conservation agriculture before they start teaching other farmers. In effect, this means men end up teaching men. Sometimes, even if women are recruited, husbands prevent them from attending conservation agriculture training sessions. Furthermore, farmers need to own land to be eligible for membership in farmer associations and cooperatives. This entitles them to a range of government-subsidized inputs, such as seed, fertilizer, and lime. However, women farmers, even if they own land, can find it difficult to pay the 80,000 kwacha joining fee and the additional 30,000 kwacha transport cost for such inputs. The situation thus arises whereby extension advice and physical

inputs are directed almost entirely to male plot holders. Men who do not hold land, and the majority of women, are perforce excluded from capacity development (ibid.).

### *Innovation Platforms and Women's Involvement*

The continuing failure to properly understand gender relations and the power relations they embody can mean that the promise of exciting new extension and advisory methodologies may not be fully realized.

Innovation Platforms are an increasingly popular methodology, based on creating multi-stakeholder platforms and foregrounding co-learning. They can be defined as a space for learning and change. Members can include farmers, traders, processors, government staff, and researchers (among others) with different stakes in the learning process and its outcomes. The aim is typically to create a common vision—for example around a value chain or natural resource management—and to work collaboratively towards its realization. Activities may be designed and implemented together, or the platform may work to coordinate activities by individual members (Ballantyne, 2014). Excellent, unbiased facilitation is required to ensure that actors (with often very divergent interests) can be persuaded to work together to create a “win-win” situation for all (Swaans *et al.*, 2014).

Whilst it is widely recognized that less powerful actors may require special support to participate effectively in innovation platforms and hold their ground in asymmetric power relationships, less attention has been paid to date to ensuring that women can participate effectively. They are often underrepresented in innovation platform processes in terms of absolute participation as well as effective voice. This is because women may face logistical constraints related to the timing or location of the meeting, or have insufficient time to attend. In some locations women may not be able to, or feel able to, express their opinions freely in a public space. This can result in the platforms prioritizing issues that either do not reflect women's interests and concerns or could impact them negatively (Swaans *et al.*, 2014).

The above discussion and evidence show that conceptual lock-in can result in rural advisory services failing to target and support women and men farmers appropriately. As a consequence, they can even cause measurable harm to those societies by weakening cooperation, and, in some cases, sparking gender conflict, as well as failing to secure the expected production and productivity gains. Tackling this is not only a matter of more and better research, of mapping and working to alleviate gender-based constraints, and of targeting women more effectively (Sarapura, 2012). It is a matter of dissolving the tired conceptual frameworks that have been used so long, such as equating the primary farmer with the “head of household”, “male and female crops”, etc. Responsive, dynamic extension and advisory services that reframe the question of access and use are needed to keep pace with and manage the changes in agricultural livelihoods in Sub-Saharan Africa. Rather than finding yet more ways to improve outreach, it would be better to examine and challenge the deep structures that hinder effective engagement by all parties.

### **Towards a Gender-Transformative Extension and Advisory Facilitation System**

Rather than treat the creation of an excellent, gender-responsive extension and advisory service as a goal in itself, it is preferable to consider such a service as a means to a different, broader end: gender equality. This is a reasonable goal given that the majority of African governments have signed the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW). What does gender equality mean for extension and advisory services? In program terms it implies



men and women, as farmers and actors in other positions in value chains, who are able to participate actively in discussion processes around the creation, testing and rolling out of agricultural technologies. Gender equality suggests women and men engaging in rational decision-making on their livelihood strategies and life choices, unencumbered by gender norms that inhibit what men and women can say, do, and be. In this section, we first develop a conceptual framework for such work, which we call a Gender-Transformative Extension and Advisory Facilitation System (GT-EAFS). We then provide examples of innovative practices that would fit the framework well.

### *Step 1: Creating a Conceptual Framework for a GT-EAFS*

Behavioral change processes must be set in motion in order for the framework to be implemented in a real life project. A lack of independent access to productive resources, an inability to participate effectively in discussions and form meaningful goals, and an inability to implement recommendations made by researchers (whether formally trained or farmer) are intrinsic conditions of “powerlessness”. Powerlessness is underpinned by cultural norms, which differ from place to place. Much work on gender has been ineffective because of attempts to respond directly to visible gender inequalities by creating the inverse situation. For instance, if women are considered to have low incomes, then income-generation schemes are introduced. If women have a low understanding of food security and nutritional needs, then they are trained in vegetable growing, post-harvest processing, and storage and nutrition skills. Many such initiatives have not succeeded because they have not challenged the underlying reasons why women may have a low income or may be poor at managing household food security. They also have not succeeded because they position men and women as being in conflict rather than in collaboration, and thus may act to deepen conflict rather than enhance cooperation.

To tackle the underlying norms and power structures that create and reproduce gender inequalities, an extension and advisory *facilitation system* (as opposed to a service) is required. A facilitation system emphasizes not only the creation of knowledge products for dissemination to end users, but also the process of creating knowledge with those users. To create such a system an effective conceptual framework is needed to understand and map the domains in which power is exercised, negotiated, and expressed. Visualization is a useful way of drawing attention to core processes and highlighting interactions and links. Frameworks are not intended to model reality. Rather, they should be deployed as discussion documents to stimulate exchanges among stakeholders about how unequal gender relations arise and how to respond to the structural conditions that create disempowerment. Frameworks should be used to help identify and build on existing entry points for change, or create new ones.

The International Livestock Research Institute (ILRI), the World Fish Centre, CARE, and other organizations are working on conceptual frameworks that can be broadly termed “gender-transformative”. Such approaches consider the social context not just as something to understand and work within, but rather as something to act upon (Kabeer and Subrahmanian, 1996). They work explicitly to change gender norms and relations in order to promote more equitable gender relations between women and men, and a more socially enabling environment. Interventions need to work at multiple levels: To enhance women’s agency, to change the norms that frame gendered interactions and expectations, and to alter the institutional arrangements that create and maintain gender inequalities through their operations (CGIAR, 2013).

CARE International has developed several useful frameworks. The Women's Empowerment Framework (CARE, 2009) takes into account formal and informal processes that can support or

prevent women's participation in development processes. It specifically focuses on developing and strengthening women's voices and hence strengthening effective participation at a range of levels, including within the household. Critically, it argues that women's participation is only effective if efforts are made across a number of domains, ranging from individual empowerment (increasing voice or "agency"), to the formal and informal structures and processes that affect women's access and control over assets of all kinds ("structure"), and also to the networks (or "relations") that enable women to interact effectively with development actors such as government agencies, research institutions, civil society, and the like. Empowerment is thus a process (means) as well as an outcome (end).

The CARE Empowerment Framework is valuable because it focuses on linking processes to promote women's decision-making power at all levels and, in so doing, affects the work of all development actors. Figure 1 is adapted from CARE's Women's Empowerment Framework. It sets out the three domains that must be worked with simultaneously if women and men are to experience empowerment and engage successfully in behavioral change.

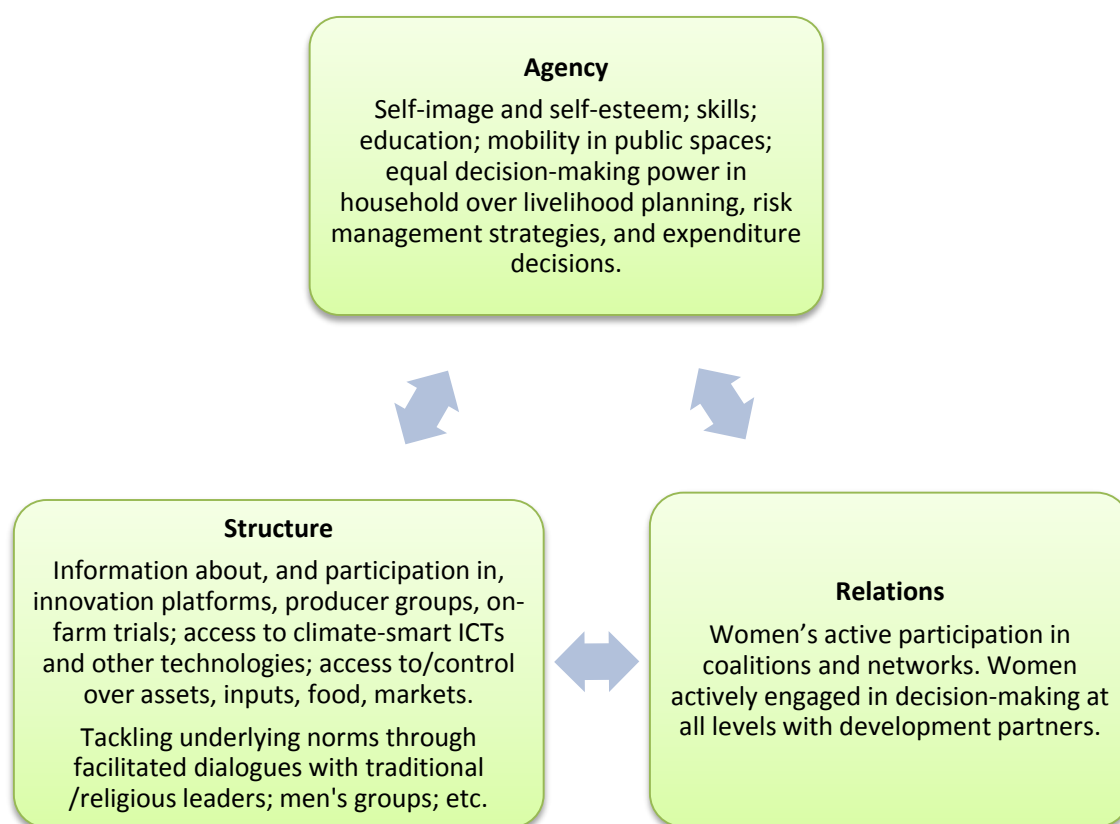


Figure 1: Creating an Extension and Advisory Facilitation System (EAFS)

The interlinked domains in Figure 1 are:

1. Agency: The ability to make one's own choices and act upon them; a woman's own aspirations and capabilities.
2. Relations: One's ability to create, participate in, and benefit from networks; the power relationships through which women negotiate their rights and needs with other development actors.
3. Structure: The locally-specific environments that surround and condition women's choices. Structure has two sub-dimensions:

- First, the political, cultural, economic, and social structures within which women and men live. These have recognizable forms, such as how households are organized (monogamous, polygamous, etc.), access to and control over key productive resources, producer groups, development agencies, government institutions, laws, etc.
- Second, structure refers to the underlying values, assumptions, and ideologies that perpetuate and legitimize these visible entities. These underlying structures underlie and “justify” the way organizations are set up, how societies are organized, and how laws are written. In many agrarian societies, for instance, sons rather than daughters tend to inherit land (via an invisible norm). The laws of the land may support this practice through acknowledging customary law (visible expression of the norm).

It soon becomes clear that there are strong associations between visible and invisible structures, and that it is very likely that a specific visible structure—such as a producer organization or innovation platform—is likely to be strongly shaped by the underlying cultural norms of the society in which it operates. These norms will affect the ability of women to speak effectively, to set out their gender interests, to ensure organizations react to their concerns, as well as affect the formal decision-making functions they take on. A GT-EAFS will need to work on strengthening women’s agency, on working on structure at both levels, and on developing women’s social capital effectively to improve their relations with other actors. In all cases, the specificity of gender relations and other inequalities need to be mapped and understood in order to ensure the conceptual framework is applicable to the context within which it will operate. Good gender analyses are vital.

### *Step 2: Operationalizing the Conceptual Framework through Empowerment Pathways*

Once the basic conceptual framework has been developed, it will be necessary to create robust, workable “empowerment pathways” between domains—to and from the individual, the community, and the wider world—to ensure that change cannot be “undone”, and that it is truly resilient over time. Empowerment pathways can be based on the format of “impact pathways” used by many development agencies, which envisage a trajectory of inputs→activities→outputs→outcomes→impacts. Empowerment pathways are not linear pathways; they rely on mutually reinforcing feedback loops to help create virtuous, ever-expanding circles for change. Creating them will require the involvement and co-operation of direct and indirect stakeholders, including women's groups, men's groups working for change in gender relations, relevant government agencies, civil society networks, private sector actors, traditional leadership structures, etc. Such stakeholders will need to be brought together in different combinations to develop specific empowerment pathways; for example between developing a women's sense of worth through literacy classes (agency) and supporting her effective participation in a producer cooperative (structure).

Figure 2 provides a visualization of how this could work. The key actors each have a segment of the pie chart. They may take sole responsibility for some activities within their area of expertise, and collaborate on other activities with other stakeholders. The extension and advisory facilitation system, placed at the heart of the pie chart in Figure 2, would continue to work on traditional areas of expertise (such as agronomic research and training) but they would be clearly mandated to liaise closely with other stakeholders to create the enabling environment required to transform gender relations. Their role would not only be to provide relevant technical research, but to facilitate and coordinate overlapping activities among the stakeholders. The idea in itself is not new, and in many countries extension services are taking on a multitude of new roles. The difference with the GT-EAFS is the prior development of a conceptual model for gender-transformation and women's

empowerment, and linking this to the development of “empowerment pathways”. The GT-EAFS takes on the role of orientating and coordinating the work—in other words, true facilitation. They will need to clearly build in the links and partnerships required for progress to be achieved, and be adjusted as time moves on and iterations become necessary.

Key: Representative Activities in Gender Transformative Extension and Advisory System

- Agronomy
- Common Interest Groups Cooperatives
- Innovation Platforms
- Traditional Leadership Structures
- Household Methodologies
- Mentoring
- Gender-Sensitive Research
- Gender Training

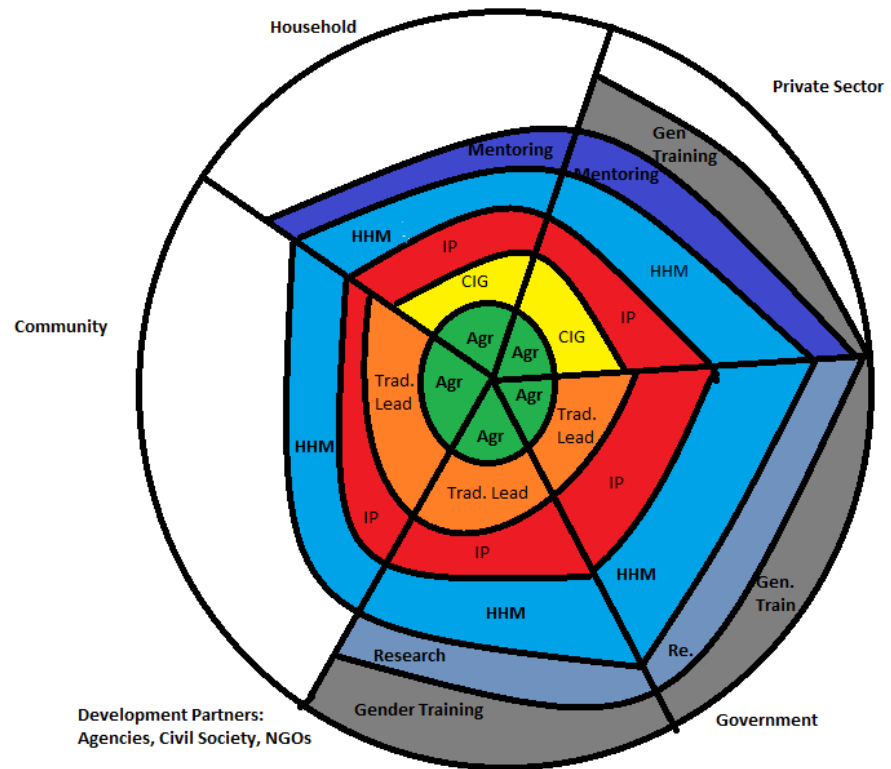


Figure 2: Implementing a Gender-Transformative Extension and Advisory Facilitation System

### Innovative Practices for Integrating Current Systems into the GT-EAFS

Much of the work conducted by the current extension and advisory services is exciting and innovative and could be incorporated into a GT-EAFS. This section highlights practices verified as having had a positive impact on gender relations. It uses the terminology of the CARE Empowerment Framework—agency, structure, and relations—to describe the examples.

#### Developing Relations

##### Linking Interventions for Maximum Effectiveness

A wide-ranging study, "Sourcing examples of policy and programming practice for empowering women in a rural context," (Murray, 2013) examined a wide range of projects aiming to support women farmers. It found that the following measures were key: Membership of farmers’ groups as a source of social and economic empowerment; empowering women financially through loans, savings, and asset ownership; improving harvesting and post-harvest technologies; and providing

accessible training. Working closely with local businesses, governments, and community structures for implementation is essential. Targeting women as members of the household and community (rather than in isolation) and working closely with men and with male community leaders is important. Linking technical interventions is also critical, and can be done by promoting access to savings and loans to buy improved inputs and then training women in the use of those inputs. The report notes that implementing agencies need to understand women's multifaceted roles in agricultural value chains and in rural society more broadly. Organizations working with women should see them as farmers, buyers, sellers, community leaders, wives, mothers, processors, and innovators. Projects that targeted women in more than one of their roles proved the most effective (Murray, 2013; Doss *et al.*, 2012).

Communities are never homogeneous. Understanding and negotiating inequalities based on gender, age, ethnic affiliation, disability, religious affiliation, etc. must be done carefully. One way of addressing the exclusion of women and poorer community members is to include the community in the identification of partner organizations and individuals. For instance, in Zimbabwe, researchers were seeking people to work on participatory plant breeding. There was a large number of local organizations representing a large number of people to choose from. Researchers and community members agreed that important criteria for selection included: the organization be engaged in activities related to food production; that these activities did not conflict with local customs; that the leadership was democratic and representative of the membership; that women were active decision-makers; and that marginalized ethnic groups were included. The community identified farmers' clubs and gardening groups as best meeting the criteria. Whilst the farmers' clubs had a mostly male membership and leadership, the gardening groups' membership and leadership consisted mostly of women, including significant numbers of female household heads. These were acknowledged to be among the poor in this particular ward (Win, 1996). By working closely with these two groups, the project worked to strengthen the position of women in decision-making processes without confrontation. Cooperation between the farmers clubs and gardening groups improved markedly. Local leaders became more self-critical, and village committees more representative. Agritex, the government extension program, participated from the start in this ten-year, process-led, farmer-led initiative. This in turn led to Agritex reorganizing its services across the country (Murwira *et al.*, 2000).

### *Transforming Visible Structures*

#### Changing Cooperative Bylaws

The Kenya Dairy Sector Competitiveness Programme (KDSCP) stated that women must form 30 percent of cooperative membership. Support was provided to poor male-headed and female-headed households as follows: (i) suggesting the addition of clauses to cooperative membership agreements that funds for shares can be raised over time, (ii) paying the same amount per liter regardless of delivery size, (iii) ensuring the cost of inputs is the same regardless of size of order, (iv) encouraging men to allow women to apply for women-friendly loans at lower interest rates. Loan diversion was not possible since the collateral is the item purchased, (v) instituting payment in-kind for milk through the addition of a cooperative store through which school books, basic food items, seedlings, and inputs can be obtained. Some cash was provided to the man of the family in male-headed households to help secure his agreement to this payment modality (Farnworth *et al.* 2012).

### Working with Traditional Leadership

Across Zambia, traditional leaders are widely respected and very powerful, particularly in rural areas. Innovative chiefs in Zambia are encouraging community-level institutions to change. Senior Chief Nalubamba of the Ila people in Southern Province has established the Mbeza Royal Development Structure (MRDS) as an institution that promotes democracy, human rights, gender equality, and development for his citizens. The chieftdom is now run by committees and has a management structure that is accountable and transparent to all citizens. The current five year strategic plan was developed with all stakeholders and works to promote women in various ways. Whereas the previous chieftaincy institutions of the Ila were considered very oppressive to women, the MRDS vigorously supports women's rights. Many women have been appointed to leadership positions that were previously reserved exclusively for men. Indeed, women now lead committees and own productive assets such as land, oxen, and ploughs (Farnworth *et al.* 2013).

### *Developing Agency and Transforming Visible Structures and Underlying Norms*

#### Working with the Whole Household

Household methodologies are one of the most innovative groups of methodologies to emerge over recent years. They have been developed by a range of development agencies, including IFAD, USAID, SIDA, Send a Cow, and OxfamNovib. All household methodologies work to change gender relations within the "black box" of the household. Trained facilitators work with all household members to create a shared vision with the household to be achieved within a set timeframe. The household undertakes a "gender SWOT" (strengths, weaknesses, opportunities, and threats) analysis, and then develops an action plan to enable realization of its vision. Activities to overcome weaknesses (via seeking technical training or strengthening social capital by joining groups and networks) and activities to build on strengths (such as by increasing land area devoted to a successful marketable crop) are undertaken. Indicators are formulated and regularly tracked by the household as well as by support agencies. These include "internal" and "external" indicators. Whilst both types of indicators include gender indicators, internal indicators in particular track relative and absolute changes in women's, and men's empowerment along various, self-defined axes (IFAD, 2014).

The SIDA-funded Agricultural Support Programme in Zambia (ASP, 2003-2008) targeted 44,000 households and used a household methodology to ensure that both women and men took on responsibilities for "farming as a business" and for food security. At the community level women's participation was obtained by ensuring that all extension meetings had to have a minimum 30 percent female attendance; otherwise the meeting would be cancelled. Women were asked to sit with, rather than apart from, the men (which traditionally does not happen) and the facilitators were trained to ensure women spoke. At the household level, facilitators worked closely with adult household members (husband, wife, and older children) to guide them in setting their household's vision and to prepare an action plan. Children were important because they were sometimes the only literate people in the household and thus important to proper accounting. Technical support was integrated into the methodology—the ASP promoted mixed crop/livestock production systems to help ensure a steady flow of income across the year. Household food security was attained by training participants to set aside sufficient maize for the household, with some additional maize set

aside for visitors and events. Evaluations (Farnworth and Munachonga, 2010; Bishop-Sambrook and Wonani, 2008) show that both men and women believe that agricultural output has increased and household food security has improved. There has been a shift in decision-making over assets, and assets are now understood to belong to the whole household rather than any one individual. The attitudinal changes with respect to the cultural norms governing “male” and “female” roles and responsibilities have been rapid. For example, the division between “male” and “female” crops is starting to dissolve, with men no longer asserting ownership over “female” crops that have become lucrative. Women are now able to market such crops, or, if men market them, everyone in the household benefits. Both men and women feel empowered because intra-household relationships are less tense and more productive. Men not only appear to have better relationships with their wives, they claim to have forged closer relationships with their children and can speak to them more freely. The emphasis of ASP on working with the entire farming household has increased the resilience and coping strategies of many households.

### *Developing Agency, Transforming Underlying Norms*

#### Involving Men

Implemented through the International Potato Centre (CIP), Malawi, the Irish Aid-funded “Rooting out Hunger in Malawi with Nutritious Orange-fleshed Sweet Potato”(OFSP) project aims to improve vitamin A and energy intake for at least 70,000 rural households. Agricultural researchers, NGOs, and farmers pooled knowledge /resources to develop, distribute, and promote new vitamin-enriched and drought-resistant sweet potato varieties. The OFSP program in Malawi recognizes that men play an important role in household decision-making and thus includes them in all aspects of intervention—from training to the establishment of decentralized OFSP vine multipliers to the dissemination of vine cuttings. The OFSP program embedded itself by creating explicit links to the Government of Malawi’s policy on gender, the Agriculture Sector Wide Approach, and the SUN 1000 special days initiative. Working with both women and men in the household proved effective. In 2011-12, two thirds of the 24,000 farmers supported via the vine cuttings voucher scheme were women. Overall, of the more than 4,000 agricultural extension workers and lead farmers trained by the project, 43 percent are women (Murray, 2013; Sindi *et al.*, 2013; Nyekanyeka *et al.*, 2013).

### **Conclusion**

For decades, conceptual lock in has resulted in the failure of the agricultural extension and advisory services to properly serve women in agriculture. It is essential to dissolve the rigid conceptualizations of what women and men do in farming in order to see what they actually do. Focusing on access is not enough—ensuring women as well as men can implement what they learn requires a conceptual model that posits the extension and advisory services as a facilitation system (EAFS). They need to become an active change agent and take a lead role in managing partnerships for change. This task is made simpler by the fact that there are many innovative practices all over the continent. One of the main tasks of a gender-transformative EAFS is to capture, record, replicate, and upscale such methodologies to effect broader social change.

### **Acknowledgements**

This research was conducted as part of the Livestock and Fish Research Program at the International Livestock Research Institute

## References

- African Development Bank Group. (2011) *Africa Infrastructure Knowledge Program*. Available at: <http://infrastructureafrica.org/key-msg/sector/africa%E2%80%99s-agricultural-productivity-lowest-world> [Accessed 29 December 2014].
- Akanji, B. (2013) 'Structural Transformation and Gender Rights in African Agriculture: What Pathways to Food Sovereignty and Sustainable Food Security?' Food Security: A Critical Dialogue. Yale University, 14-15 September. New Haven: *The Journal of Peasant Studies*, Conference Paper #45.
- Andersson, J. and D'Souza, S. (2014) 'From adoption claims to understanding farmers and contexts: A literature review of Conservation Agriculture (CA) adoption among smallholder farmers in southern Africa', *Journal of Agriculture, Ecosystems & Environment*, 187, pp. 116-132.
- Arslan, A., McCarthy, N., Lipper, L., Asfaw, S. and Cattaneo, A. (2014) 'Adoption and intensity of adoption of conservation farming practices in Zambia', *Journal of Agriculture, Ecosystems & Environment*, 187, pp. 72-86.
- Ashby, J., Kristjanson, P., Thornton, P., Campbell, B., Vermeulen, S. and Wollenberg, E. (2012) *CCAFS gender strategy*. Copenhagen: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS).
- Ayieko, M. (1997) 'From Single Parents to Child-Headed Households: The Case of Children Orphaned by AIDS in Kisumu and Siaya Districts', *Study Paper No. 7*. New York: United Nations Development Program (UNDP).
- Ballantyne, P. (2014) *What are innovation platforms in agricultural research?* Available at: <http://clippings.ilri.org/2014/02/03/ipbrief1/> [Accessed 29 December 2014].
- Baudron, F., Andersson, J., Corbeels, M. and Giller, K. (2012) 'Failing to yield? Ploughs, Conservation Agriculture and the problem of Agricultural Intensification: An example from the Zambezi valley' *Journal of Development Studies*, 48(3), pp. 393-412.
- Bishop-Sambrook, C. and Wonani, C. (2008). *The Household Approach as an Effective Tool for Gender Empowerment: a Review of the Policy, Process and Impact of Gender Mainstreaming in the Agriculture Support Programme in Zambia*. International Fund for Agricultural Development, Rome, Italy.
- CARE. (2009) *Strategic Impact Inquiry*. Available at: <http://gender.care2share.wikispaces.net/Strategic+Impact+Inquiry> [Accessed 29 December 2014].
- CGIAR Research Program on Livestock and Fish. (2013). *Gender strategy of the CGIAR Research Program on Livestock and Fish*. Nairobi: International Livestock Research Institute (ILRI).
- Cohen, M. and Lemma, M. (2011) 'Agricultural Extension Services and Gender Equality: An Institutional analysis of four districts in Ethiopia' *IFPRI Discussion Paper 01094*. Washington DC: International Food Policy Research Institute (IFPRI).



- Dodson, B., Simelane, H., Tevera, D., Green, T., Chikanda, A. and de Vletter, F. (2008) 'Gender Migration and Remittances in Southern Africa', *Migration Policy Series No. 49*. Cape Town: Idasa.
- Doss, C. R. (1999) 'Twenty-Five Years of Research on Women Farmers in Africa: Lessons and Implications for Agricultural Research Institutions; with an Annotated Bibliography', *CIMMYT Economics Program Paper No. 99-02*. Mexico D.F.: CIMMYT.
- Doss, C., Bockius-Suwyn, Z. and D'Souza, S. (2012). *Women's Economic Empowerment in Agriculture: Supporting Women Farmers*. New York, NY. UN Foundation. Available at <http://www.future-agricultures.org/policy-engagement/policy-briefs/1862-women-s-economic-empowerment-and-collective-action-in-agriculture-new-evidence-and-measurement/file>
- Doss, C. (2002) 'Men's Crops? Women's Crops? The Gender Patterns of Cropping in Ghana', *Journal of World Development*, 30(11), pp. 1987-2000.
- Dyson-Hudson, R. (1972) 'Pastoralism: Self-Image and Behavioural Reality', *Journal of Asian and African Studies*, 7, pp. 30-47.
- Fafchamps, M. and Quisumbing, A.R. (2002) 'Control and Ownership of Assets Within Rural Ethiopian Households', *The Journal of Development Studies*, 38(6), pp. 47-82.
- Food and Agriculture Organization (FAO). (2011) *The State of Food and Agriculture 2010-2011: Women in Agriculture: Closing the Gender Gap for Development*. Available at: <http://www.fao.org/docrep/013/i2050e/i2050e00.htm> [Accessed 29 December 2014].
- Farnworth, C.R., Sundell, M.F., Nzioki, A., Shivutse, V. and Davis, M. (2013) *Transforming Gender Relations in Agriculture in Sub-Saharan Africa*. Stockholm: SIANI.
- Farnworth, C.R. and Jiggins, J. (2003) 'Participatory plant breeding and gender analysis', *PPB Monograph No. 4*. Cali: PGRA.
- Farnworth, C.R. and Munachonga, M. (2010) 'Gender Aware Approaches in Agricultural Programmes- Zambia Country report: A special study of the Agricultural Support Programme [ASP]', *UTV Working Paper 2010: 8*. Stockholm: SIDA.
- Farnworth, C.R., Nzioki, A., Muigui, S., Kimani, E.N, Olungah, C. and Moyoncho, K. (2012) *Gender analysis and action plan*. Available at [http://pdf.usaid.gov/pdf\\_docs/PA00K5KJ.pdf](http://pdf.usaid.gov/pdf_docs/PA00K5KJ.pdf) [Accessed 29 December 2014].
- Farnworth, C.R. (2010) 'Gender-Aware Approaches in Agricultural Programmes: A Study of SIDA-supported Agricultural Programmes', *Sida Evaluation 2010:3*. Stockholm: Sida.
- Farnworth, C.R. and Hutchings, J. (2009) *Organic Agriculture and Women's Empowerment*. Germany: IFOAM. Available at [https://okologi.dk/media/4fc6fd01-b56c-46de-bd45-4965ef07dd08-04\\_09\\_kvinders%20empowerment%20og%20C3%B8ko%20Gender-Study-090421.pdf](https://okologi.dk/media/4fc6fd01-b56c-46de-bd45-4965ef07dd08-04_09_kvinders%20empowerment%20og%20C3%B8ko%20Gender-Study-090421.pdf)
- Ferguson, A.E. (1992) 'Differences among Women Farmers: Implications for African Agricultural Research Programs', A workshop on Social Science Research and CRSP's: Proceedings. University of Kentucky, 9-11 June. Lexington: INTSORMIL, pp. 47-62.
- Gabrielsson, S. and Ramasar, V. (2012) 'Widows: Agents of change in a climate of water uncertainty', *Journal of Cleaner Production*, 60, pp. 34-42.

- Giller, K.E., Witter, E., Corbeels, M. and Tittoneel, P. (2009) 'Conservation agriculture and smallholder farming in Africa: The heretics' view', *Field Crops Research*, 114(1), pp. 23-34.
- IAASTD. (2008) *International Assessment for Agricultural Science and Technology for Development*. Available at: <http://www.unep.org/dewa/agassessment/index.html> [Accessed 30 December 2014].
- IFAD. (2014) Household Methodologies Toolkit. <http://www.ifad.org/knotes/household/index.htm>. [Accessed 4th January 2015].
- Jiggins, J., Samanta, R.K. and Olawoye, J.E. (1998) 'Improving women farmers' access to extension'. In: *Improving Agricultural Extension: A reference manual*. Rome: Food and Agriculture Organization.
- Kabeer, N. and Subrahmanian, R. (1996) 'Institutions, relations and outcomes: Framework and tools for gender-aware planning', *IDS Discussion paper 357*. Brighton: Institute of Development Studies.
- Kristjanson, P., Waters-Bayer, A., Johnson, N., Tipilda, A., Njuki, J., Baltenweck, I., Grace, D. and MacMillan, S. (2010) 'Livestock and women's livelihoods: A review of the recent evidence', *Discussion Paper No. 20*. Nairobi: International Livestock Research Institute.
- Maal, B. (2011) 'Report from a fact finding mission: Women, Gender and Conservation Agriculture in Zambia', *Norad Report 5/2011 Discussion*. Oslo: NORAD.
- Manfre, C. Rubin, D., Allen, A., Summerfield, G., Colverson, K. and Akeredolu, M. (2013) 'Reducing the Gender Gap in Agricultural Advisory and Extension Services: How to Find the Best Fit for Men and Women Farmers', *MEAS Discussion Brief #2*. Urbana: Modernizing Extension and Advisory Services.
- March, C., Smyth, I. and Mukhopadhyaya, M. (1999) *A Guide to Gender Analysis Frameworks*. Oxford: Oxfam.
- Moser, C. (2002) *Gender Planning and Development: Theory, Practice and Training*. London: Routledge.
- Murray, U. (2013) *Sourcing examples of policy and programming practice for empowering women in a rural context*. Available at: <http://www.evidenceondemand.info/sourcing-examples-of-policy-and-programming-practice-for-empowering-women-in-a-rural-context> [Accessed 30 December 2014].
- Murwira, K., Wedgewood, H., Watson, C., Win, E.J. and Tawney, C. (2000). *Beating Hunger, The Chivi experience: A community-based approach to food security in Zimbabwe*. London: Intermediate Technology Publications.
- Njuki, J. and Mburu, S. (2013) 'Gender and Ownership of Livestock Assets'. In Njuki, J. and Sanginga, P.C. (eds.) *Women, Livestock Ownership, and Markets: Bridging the gender gap in Eastern and Southern Africa*. London: Routledge.
- Njuki J., Kaaria, S., Chamunorwa, A. and Chiuri, W. (2011) *Impacts of commercialization of crop and livestock products on women's decision making and income management in Uganda and Malawi* [A PowerPoint presentation provided to the Gender and Market Oriented Agriculture (AgriGender 2011) Workshop]. Addis Ababa, Ethiopia. 31 January-2 February.

- Nyanga, P. (2012a) Factors influencing adoption and area under conservation agriculture, *Sustainable Agricultural Research*, 1(2), pp. 27-40.
- Nyanga, P. (2012b) Food security, Conservation Agriculture and pulses: Evidence from smallholder farmers in Zambia. *Journal of Food Research*, 1(2), pp. 120-138.
- Nyekanyeka, T., Kapalasa, E., Chipungu, F., Botha, B. and Abidin, P. (2013) *Improving food security, nutrition and gender empowerment*. Blantyre: International Potato Center (CIP).
- OECD. (2010) 'Gender Inequality and the MDGs: What are the Missing Dimensions?', *At Issue*, September, pp. 1-8.
- O'Sullivan, M., Rao, A., Banerjee, R., Gulati, K. and Vinez, M. (2014) *Levelling the field: improving opportunities for women farmers in Africa*. Washington DC: World Bank Group.
- Oyugi, W. O. (2000) *Politicized Ethnic Conflict in Kenya: A Periodic Phenomenon*. Available at: <http://unpan1.un.org/intradoc/groups/public/documents/CAFRAD/UNPAN010963.pdf> [Accessed 30 December 2014].
- Quisumbing, A. R., Rubin, D., Manfre, C., Waithanji, E., van den Bold, M., Olney, D. and Meinzen-Dick, R. (2014) 'Closing the Gender Asset Gap: Learning from Value Chain Development in Africa and Asia', *IFPRI Discussion Paper 01321*. Washington DC: International Food Policy Research Institute.
- Pretty, J., Toulmin, C. and Williams, S. 2011) 'Sustainable Intensification in African Agriculture', *International Journal of Agricultural Sustainability*, 9(1), pp. 5-24.
- Ragasa, C., Berhane, G., Tadesse, F., and Seyoum, A. (2013) 'Gender Differences in Access to Extension Services and Agricultural Productivity', *The Journal of Agricultural Education and Extension*, 19(5), pp. 437-468.
- Raney, T., Doss, C., Anríquez, G., Croppenstedt, A., Gerosa, S., Lowder, S., Matuscke, I. and Skoet, J. (2011) The role of women in agriculture, *ESA Working Paper No. 11-02*. Rome: Food and Agriculture Organization.
- Sarapura, S. (2012) 'Gender analysis for the Assessment of Innovation Processes: The case of Papa Andina in Peru'. In: *Agricultural Innovation Systems: An Investment Sourcebook* (pp. 211-230). Washington DC: World Bank.
- Sen, A.K. (1990) Gender and Cooperative Conflicts. In: Tinker, I. (ed.) *Persistent Inequalities*. Oxford: Oxford University Press.
- Shiundu, M. and Oniang'o, R. (2007) 'Marketing African Leafy Vegetables: Challenges and Opportunities in the Kenyan context', *African Journal of Food, Agriculture, Nutrition and Development*, 7(4).
- Sikana, P. and Kerven, C. (1991) *The impact of commercialisation on the role of labour in African pastoral societies*. Available at: [http://www.researchgate.net/publication/242619931\\_THE\\_IMPACT\\_OF\\_COMMERCIALISATION\\_ON\\_THE\\_ROLE\\_OF\\_LABOUR\\_IN\\_AFRICAN\\_PASTORAL\\_SOCIETIES\\_by/links/0c96052ca67d6bc8e1000000.pdf](http://www.researchgate.net/publication/242619931_THE_IMPACT_OF_COMMERCIALISATION_ON_THE_ROLE_OF_LABOUR_IN_AFRICAN_PASTORAL_SOCIETIES_by/links/0c96052ca67d6bc8e1000000.pdf) [Accessed 30 December 2014].

- Sindi, K., Kirira, C., Low, J., Sopo, W. and Abidin, P. (2013). *Rooting out hunger in Malawi with nutritious orange-fleshed sweetpotato: A baseline survey report*. Blantyre: International Potato Center (CIP).
- Sperling, L., Loevinsonn, M.E. and Ntabomvura, B. (1993) 'Rethinking the Farmer's Role in Plant Breeding: Local Bean Experts and On-station Selection in Rwanda', *Journal of Experimental Agriculture*, 29(4),pp. 509-519.
- Swaans, K., Cullen, B., van Rooyen, A., Adekunle, A., Ngwenya, H., Lemma, Z. and Nederlof, S. (2014) 'Dealing with Critical Challenges in Innovation Platforms: Lessons for Facilitation', *Knowledge Management for Development Journal*, 9(3), pp. 116-135.
- Tegebu, F.N., Mathijs, E., Deckers, J., Haile, M., Nyseen, J. and Tollens, E. (2012) 'Rural livestock asset portfolio in northern Ethiopia: a micro-economic analysis of choice and accumulation', *Tropical Animal Health and Production*, 44(1), pp. 133-144.
- Tshuma, N., Maphosa M., Ncube, G., Dube, T. and Dube, Z. L. (2012) 'The Impact of Conservation Agriculture on Food Security and Livelihoods in Mangwe District', *Journal of Sustainable Development in Africa*, 14(5), pp. 107-125.
- Torkelsson, A. and Tassew, B. (2008) 'Quantifying women's and men's rural resource portfolios - empirical evidence from Western Shoa in Ethiopia', *The European Journal of Development Research*, 20(3), pp. 462-481.
- Udry, C. (1996) 'Gender, Agricultural Production and the Theory of the Household', *Journal of Political Economy*, 104(5), pp. 1010-1046.
- Umar, B.B., Aune, J.B., Johnson, F.H., Lungu, I.O. (2012) 'Are Smallholder Zambian Farmers Economists? A Dual-Analysis of Farmers' Expenditure in Conservation and Conventional Agriculture Systems', *Journal of Sustainable Agriculture*, 36(8), pp. 908-929.
- Waters-Bayer, A. (1985) 'Dairying by settled Fulani women in Central Nigeria and some implications for dairy development', *ODI Pastoral Development Network Paper 20c*. London: Overseas Development Institute.
- Waters-Bayer, A. (1988) 'Dairying by settled Fulani agropastoralist in central Nigeria: The role of women and implications for dairy development'. Kiel: Wissenschaftsverlag Vauk.
- Win, E. (1996) *Our Community Ourselves: A Search for Food Security by Chivi's Farmers*. Harare: Intermediate Technology Zimbabwe.
- World Bank, 2008a. *Gender in Agriculture Sourcebook*. Washington DC:
- World Bank, 2008b. *World Development Report: Agriculture for Development*. Washington.