

# Women's Economic Empowerment in Agriculture: Supporting Women Farmers

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## **EXECUTIVE SUMMARY**

Women play an integral part in agricultural production, as subsistence farmers, cash crop growers, food processors, livestock owners, among other roles. It follows that empowering women will impact the agricultural markets overall. Recently, many development organizations have begun to integrate gender into their agricultural development projects. While this new generation of projects are too recent to provide evidence on the long-term impacts of targeting women in agriculture, this paper seeks to identify interventions that are having operational success on the ground. For example, these successful projects are recruiting and training female participants. Drawing on a range of experiences from current interventions, this paper seeks to identify strategies that are most effective in targeting women and that have the potential to economically empower women in the agricultural sector.

In our research, we contacted over 100 researchers and practitioners, identifying 34 projects to serve as our case studies. We then interviewed people involved with each project to learn what types of interventions are working. The interventions fell into three types: those targeting food security, those looking to engage women in economic structures and agricultural markets, and those seeking to increase women's rights as a means of increasing economic power.

The projects targeted women at different points in the agricultural production system and at different levels of empowerment or economic success. Interviewees emphasized the importance of farmers' groups as sources of social and economic empowerment; women's financial empowerment via loans, savings, and asset ownership; harvesting, processing, and storage technologies that ease time women's burdens or work with women's schedules; and trainings that are accessible to women in location, instructor, time commitment, and delivery.

However, the right tools are just one aspect of a successful project. The most effective interventions used several of these tools to create integrated approaches. For example, projects encouraged savings and loans so that women could buy improved inputs, which the implementing organization then trained the women how to use. Projects were even more successful when they took advantage of local businesses, governments, and community structures to implement the project in a sustainable fashion.

It is most effective to target women as a member of the household and the community. The most successful projects targeted men as well as women, with a focus on women's partners and male community leaders. Such an approach avoids isolating women or angering men, building a better social environment for women's success specifically and community success more generally.

Using integrated approaches and targeting women as members of a larger household and community require implementers to clearly see women's multifaceted role in the agricultural supply chain and in rural society. Organizations working with women must see them as not just farmers, but buyers, sellers, community leaders, wives, mothers, processors, and innovators. Projects that targeted women in more than one of their roles proved the most effective.

## INTRODUCTION

Women are important agricultural producers throughout the developing world. In some places, they are likely to be the primary farmers, whether in households that they head themselves or with a husband or partner. In other places, women play a key supporting role in agriculture, growing crops and livestock for home consumption and selling small surpluses. Agriculture development projects increasingly are focusing attention on women. The case is frequently made that if women farmers had access to the same resources as men, they would be able to increase overall agricultural productivity by as much as 30%.<sup>1</sup> Yet most of these calculations are based on econometric analyses of men's and women's production outputs on different plots, taking into consideration women's differential access to land, labor, and other inputs. Much less has been documented to effectively demonstrate which interventions may help resolve these constraints and increase women's productivity. However, there are currently many projects underway that attempt to bridge the gap between theoretical and actual agricultural success for women. Some projects use tactics such as providing land to women farmers, encouraging women's kitchen gardens, and providing extension services to women. Others seek to incorporate women into large-scale agricultural development projects.

Few, if any, rigorous impact analyses of interventions to benefit women farmers have been conducted. And relatively few studies examine such interventions, even if the evaluation standards are relaxed.

However, people implementing agricultural development projects targeting women have substantial field experience and understanding of what is effective and what is not. While they may not be able to substantiate their claims that their project resulted in decreased poverty, they do know whether they were able to recruit women extension agents, include women in the cooperatives, or increase output levels on women's fields. Drawing on a range of experiences from project documents and interviews with project implementers, this paper seeks to identify strategies that may economically empower women in agriculture.

Successful projects are increasingly targeting women within the context of their households and communities. Thus, while they emphasize reaching women farmers, they do not isolate these activities and instead imbed them in broader projects that seek to encourage women's economic empowerment within their households and communities.

Many successful projects do not employ just one strategy, but instead use integrated approaches to address the multiplicity of constraints that women farmers face. This paper reviews specific interventions in areas including agricultural inputs and technology, processing and storage, extension, financial services, land and tenure security and market access and then discusses how projects integrate several of these components into successful projects.

While conceptually it is easy to distinguish between projects that are designed to integrate women farmers into the market and those designed to increase household food consumption and nutrition, in practice, the line between these is quite blurry. To some extent, all of the projects we examine are designed to reduce poverty and increase women's economic empowerment in agriculture. Some work with the most marginalized women and begin by finding ways to increase their food production for home consumption. Other projects work with women who are already producing agricultural products for the market and teach them both how to produce more and to obtain better prices for their products. Lessons about how to successfully implement projects are drawn from the range of products along this spectrum.

## **FRAMING THE RESEARCH**

### **METHODOLOGY**

In an effort to identify successful 'women in agriculture' interventions and their common characteristics, we cast a wide net. In the first phase of the project, we contacted individuals and organizations who were experts in the field with knowledge of field-based interventions targeting rural women agriculturalists.<sup>2</sup> We asked them to recommend projects that they thought were successful. We continued to seek recommendations throughout the research process, continually accessing new project leads. The process eventually led us to a saturation point, where interviewees recommended projects we had already contacted. We reached out to over 100 people, including both high-level program managers and those who implement projects in the field. The process generated a list of 34 distinct projects, all of which target small-scale farmers or agricultural processors. The list of projects is representative of current trends in 'women in agriculture' development interventions. In the second phase of the project, we sought interviews with individuals involved with these recommended projects. Appendix 1 lists the projects from which we were able to interview representatives.

Our original intent was to focus on projects that centered on women's economic empowerment through agriculture. However, early on in the process it became clear that current trends in the field take a broad approach to incorporating women into agricultural systems. In seeking relevant and scalable lessons, we were introduced to a variety of projects that were outside a narrowly defined interpretation of economic empowerment projects, showing that there are multiple paths in agricultural development toward achieving the same benefits that economic empowerment projects offer. Moreover, economic empowerment objectives are often integrated into multi-objective projects, grouped with food security and nutrition goals.

In terms of scale, the projects we interviewed ranged from small pilots (involving as few as 12 individuals) to large-scale (involving upwards of 200,000 individuals). While we asked all interviewees about potential scalability, we did not include "large-scale" or "scaleable" as necessary criteria when identifying successful projects. Given the early stages of renewed

interest in gender and agriculture, we did not want to limit our analyses by excluding smaller projects. Many small- and medium-sized projects provide insight into innovative agricultural development techniques that work for women. The larger projects also helped us parse out effective approaches to women's empowerment, with the additional benefit of providing insights on how to scale up these approaches, which tend to be most successful when organizations take advantage of local social, political, and economic structures.

In seeking to identify successful 'women in agriculture' interventions focused on women's economic empowerment and highlight their common characteristics and lessons learned, perhaps the biggest challenge is how to define success. While a number of rigorous evaluations of project impacts through randomized control trials are now being implemented, the studies are still in progress. Thus, there is little rigorous evidence on which projects do economically empower women in the agricultural sector. It will be some time before RCTs can show a long term impact of projects on women's economic empowerment, since they will have to analyze impacts after the projects are completed.

The evaluations that do exist tend to be produced by the same organization that implemented the project, and they rarely consider project impacts beyond the conclusion of the implementation phase. They are able to show whether the project goals and objectives were met, but cannot identify the overall impact of the project.

Yet, while it is difficult to rigorously prove that projects had an impact on women's economic empowerment, there was a surprising consensus among development practitioners about which projects were successful. We found people from different organizations referring us to the same projects again and again.

And while there is not rigorous evidence that having women extension workers or women project staff increases the effectiveness of programs seeking to empower women economically, this is a widely held assumption of many development organizations. And, it is possible to identify projects that have been successful in training and hiring (and retaining) women.

Another complication related to the multiple pathways is the definition of economic empowerment. While only a few of the projects we profiled had an explicit or singular focus on women's economic empowerment through agriculture, we feel that all of them have strong potential to lead to women's economic empowerment through agriculture. For instance, the work of Gardens for Health International is primarily focused on reducing malnutrition rates through encouraging home garden production and offering nutrition education to rural Rwandan mothers. One minor but important outcome of the work is that some participants have formed cooperatives with the goal of accessing markets to sell their excess produce. Undoubtedly, such

an outcome can lead to economic empowerment even though the project did not explicitly set out to achieve women's economic empowerment.

The lessons presented here do provide insights into how to develop agricultural projects to benefit women. They also provide suggestions for aspects of projects that should be included in rigorous evaluations in the near future.

## **LARGER ORGANIZATIONAL TRENDS**

Before beginning interviews with project managers, we scheduled a series of interviews with gender specialists at organizations in the agricultural development field. In addition to suggesting projects to contact, five of the interviewees also provided in-depth reviews of their organizations' gender strategies.<sup>3</sup> The conversations revealed a set of common trends that are shaping projects targeting women in agriculture. These trends became more apparent in field projects reflecting these sector-wide trends.

### *Integrating Gender into Policy*

All of the organizations interviewed have, to varying degrees, begun to integrate gender into their development strategies. Each organization takes a different approach and targets different subsets of women, but all seek to ensure women agriculturalists' access to productive resources, including land, inputs, education, and savings and credit. The International Center for Research on Women (ICRW), for example, emphasizes the importance of promoting the "significant shift" to thinking about women as farmers, both as smallholders and as potential players in commercial agriculture. The UK Department for International Development (DFID) argues that women should be able to choose their occupation, and that programs should not pigeon hole them into smallholder positions.

Approaches to targeting women also differed. Oxfam concentrates on market-oriented approaches through its Gendered Enterprise and Markets Initiative. Their Women's Economic Leadership project emphasizes a market-oriented approach but uses three arguments for the need to empower women in agricultural markets: the women's and human rights case, the "business case," and the "development case." Both ActionAid and ICRW focus on ensuring women's land rights, especially moving from protective to productive land rights. They suggest that in addition to having legal ownership of land, women should also be able to use the land effectively to increase their production and income.

Most popularly, organizations are beginning to look at the problem more holistically. As ActionAid argues, women's lives are not partitioned, so development approaches should not be either. ACDI/VOCA is beginning to integrate its agriculture and nutrition projects through fortification efforts. DFID focuses on teaching life skills that can lead to economic empowerment at various points in the agricultural value chain. The organization especially targets girls and

young women, focusing on their education and improved access to and use of assets. Finally, Oxfam has emphasized the link between agricultural empowerment and the management of climate change and other climate risks.

### *Implementation and Analysis*

The common approaches also extend to the tools the organizations are using to implement and track their integration of gender into development strategies. ACIDI/VOCA and Oxfam are both using a value chain approach to determine where and how to intervene, with Oxfam using gendered market mapping to fully understand local markets before project intervention. All of the groups used farmers' groups and collective action in some capacity, both in women's only and mixed sex projects. ActionAid uses community discussions to create community solutions. Organizations, especially ACIDI/VOCA, are also bringing on more female staff and creating policies to make work environments more inviting for women, attempting to be comprehensive in their integration of gender.

All organizations are developing new assessments for analyzing the success of gender integration into projects. Tools range from gender analyses, which look at the context in which a project will operate, to gender assessments, which examine the degree to which a project has integrated gender into its systems. Most organizations now have mechanisms for considering gender from the proposal stage to the final review of a completed project. Some are using organization-specific measures, while many are using various elements of the Women's Empowerment in Agriculture Index.<sup>4</sup>

### *Conclusion*

In sum, sector leaders in agricultural development are in various phases of rethinking and implementing gender strategies in their programmatic work. However, many are reaching similar conclusions about the desirable and feasible strategies needed at the project level. Our subsequent interviews of projects show that many of the replicable or scalable approaches developed at headquarters are making it to the field and having meaningful impacts on women's agricultural success.

## **TYPE OF PROJECTS**

Women are involved in a wide range of agricultural activities and the potential for increased productivity depends both on the women themselves and their environment. Many of the projects that we consider target poor women who are likely to be involved in smallholder agriculture. But these women are not homogenous, and therefore do not all require the same types of interventions. In its project proposal for its Pathways projects in Ghana and Bangladesh, CARE identified three groups of women: better-off poor, moderately poor, and destitute.<sup>5</sup> With the goal of parsing out ways to increase productivity and empowerment for women farmers in each group, CARE Pathways programs distinguished between food-security and market-oriented

projects. While these projects are in the early stages of implementation and therefore are not discussed in detail during the “Implementations that Work” section of this paper, the CARE Pathways programs’ framing of target groups and project differentiation are helpful in thinking about categorizing our findings.

Our research found project categories to be divided into the food security and market-orientation dichotomy described by CARE, but also found an emphasis on increasing women’s rights as a means to increasing economic power. To summarize, the three types of projects we found were:

1. *Projects targeting food security issues:* These projects often work with the ultra poor and marginalized women. While the goals of these projects are predominately to help women grow enough food to feed a household, interventions often result in small surpluses that women can sell or trade at market.

2. *Projects looking to engage women in larger economic structures and agricultural markets:* These are the most common types of projects, but the projects within this category vary widely. Projects work with subsistence farmers, cash crop farmers, processors, and other types of women engaged in the agricultural sector. The projects are tied together by their goal of engaging women in the agricultural value chain in various capacities.

3. *Projects seeking to increase women’s rights as a means of increasing economic power:* These projects tend to work with communities to change laws and social norms to create environments that enable successful women farmers. Programs often focus on land access and ownership, local perceptions of women, and national laws.

The three categories describe major trends in the field, but are not necessarily rigidly separated. Often, projects blur the lines between the categories. However, it is helpful to categorize projects broadly when thinking about which beneficiaries, strategies, and tools work when targeting various groups of women.

## **TARGETS OF INTERVENTIONS**

Projects working to economically empower women in agriculture must find an appropriate entry point. Women are involved in many aspects of agriculture, ranging from growing home gardens to processing agricultural goods. Therefore, projects targeted different types of women, varying by age, socio-economic level, geographic location, and leadership roles and capabilities. The type of intervention influences the beneficiaries targeted. For example, a project seeking to reduce poverty requires a different implementation approach than a project seeking to stimulate agricultural sector growth, with the former targeting marginalized or landless women and the latter targeting established women farmers and their households. Projects looking to strengthen women’s rights as a way to increase economic empowerment often target a small subset of women leaders, who in turn train others or create change. In addition, several local factors, such

as established community networks, influence how organizations approach interventions. Even with these variations, however, our interviews revealed three common themes in the targets of projects trying to achieve women's economic empowerment via the agricultural sector. The themes include the targeting of men in addition to women, a focus on incorporating youth into agriculture and bridging a generational gap in the sector, and the prevalence of working with farmers' groups in a variety of capacities. This section covers each theme in more detail.

### *Including men to benefit women*

While we initially sought projects that specifically targeted women, many of the projects that were seen as benefitting women did not target only women. In many regions, men may pose roadblocks to women achieving empowerment, so projects sought to incorporate men in order to mitigate tensions between men and women as well as produce more sustainable results for women. Projects such as ACDI/VOCA's Kenyan Maize Development Project and TechnoServe's East Africa Coffee Initiative, each discussed below, incorporated the male partners of female project beneficiaries, educating men on subjects such as the importance of allowing women to attend training sessions and of including women in farm planning. While male partners did not necessarily receive the same intervention as their female partners, their involvement was seen as integral to the success of the project.

Other projects involved the greater community in gender trainings, attempting to create an enabling environment for their female primary participants. Some projects, such as Sunhara Walmart carried out in India by Agribusiness Systems International, Inc., enacted a series of sensitization courses and pilot programs that targeted men, with the goal of convincing men to accept women's participation in project initiatives. Men in local leadership roles are especially important, often targeted directly in order to catalyze change throughout a community. Educating male leadership is paramount for women's land rights projects, such as the one carried out by Uganda Community Based Association for Child Welfare (UCOBAC), an NGO that works to improve the welfare of vulnerable women and children. This theme carries over to other projects that require female participation in established, male-dominated political and economic systems.

### *Bridging the generational gap*

Youth are the future of the developing world, and many of them are moving out of agriculture.<sup>6</sup> Many of these youth either do not want to farm or cannot farm because of a lack of access to land. As a result, the agricultural sector is aging rapidly. In East Africa, for example, the majority of smallholder farmers are over the age of 60. The dominance of that age bracket only increases when considering farmers who are members of cooperatives, the sites of many programs' agricultural extension.

To ensure the national food security of Africa in the future, programs like TechnoServe's STRYDE project focus on reengaging youth in agriculture. Other projects, such as USAID's

Value Girls, work at the intersection of youth and gender because of the young women's high level of vulnerability in rural areas. Young women are often the victims of violence or perceived as burdens on their families. In the fishing sector along the shores of Lake Victoria, many young women engage in high-risk behavior when trying to engage in a male dominated market. By giving them the tools to be self-sufficient and not reliant on men, the Value Girls program has helped these young women disengage themselves from violent situations and empower themselves to earn an income and to be future community leaders. Teaching youth, especially young women, the skills they need to be productive members of the economy is both good for them and their families and for economic growth. .

While both STRYDE and Value Girls target young people directly, other projects attempt to bridge the generational gap by encouraging knowledge sharing between older and younger participants. For example, representatives of Vanastree, a community network in India focused on agrobiodiversity, described the importance of including both older and younger women in the program because knowledge of seed saving is best transferred through intergenerational dialogue and interaction. Representatives of WOLAR, a land rights project run by ActionAid in southern Africa, however, warned about a potential shortcoming of an intergenerational focus: generational dynamics within women's groups can reproduce the cultural marginalization of young women.

### *Farmers' Groups*

Additionally, the majority of projects worked with farmers' groups, both single sex and mixed groups. Farmers' groups can serve as structures for extension delivery, input distribution, and savings and credit programs. Working within a collective system has the potential to be especially effective for women, providing them with a support system and opening up markets that they cannot reach as individuals. However, farmers' groups can also reproduce negative community dynamics and marginalize women, so projects must be conscious of the internal workings of a group as well as socially-constructed gender dynamics.

There are different approaches to working with farmers' groups. First, projects can choose to work to strengthen existing groups. Projects such as TechnoServe's Shea Project in Ghana, STRYDE, and ACIDI/VOCA's Cooperative Development Project (CDP) all specifically recruited existing groups as the basis for their projects. This approach is helpful where cooperatives already serve many farmers in a region. For example, in Paraguay where CDP works, 20% of the population claims cooperative membership. Existing groups can be effective tools for recruiting project participants. However, existing groups can also lead to the exclusion of minority groups, especially women. Most established groups, particularly in regions where women are not seen as farmers, have very low rates of female participation, and nearly nonexistent rates of female leadership. Since most existing collective structures are not female-centric, incorporating and

empowering women within these structures becomes the main focus for most projects that work with existing groups.

On the other hand, if a project establishes its own farmers' groups, it often chooses to set up female-only groups. Male domination of resources and trainings in mixed groups is a reason to form unisex groups. Projects such as Sunhara Walmart, Sunhara India (also implemented by Agribusiness Solutions International), and Oxfam GB's value chain projects discussed below have all taken this approach. While there are distinct benefits in forming female-only groups, including better cohesion between members and leadership empowerment for women, doing so often requires much more work for an organization, including the implementation of leadership trainings, literacy trainings, and support structures. However, female-only groups are often very successful, with significant increases in economic and social empowerment.

A third approach combines the two aforementioned approaches, both integrating women into established cooperatives and forming female-only subgroups within the larger structure. For example, CDP worked within established cooperatives to integrate women and empower them in formal leadership. However, realizing certain limitations to this method, it also helped women form women's sub-committees, both within and outside of these cooperatives, as another path to fostering female empowerment and economic success.

## **LOOKING AT WOMEN'S EMPOWERMENT HOLISTICALLY**

Women's multifaceted role in the household makes women's economic empowerment through agriculture complex.<sup>7</sup> A number of the projects we interviewed focused on women's empowerment and agriculture, but not primarily on income generation. Addressing issues such as food security and malnutrition reduction can have important repercussions for women's economic empowerment. In addition, food security and malnutrition projects are entry points for reaching women involved in agriculture. For example, introducing small gardens may initially be about improving food insecurity, but women may be able to eventually use them to generate income.

Being malnourished, having to care for a malnourished family member, or having to spend disproportionate amounts of time ensuring household food security contribute to lost economic opportunities for women.<sup>8</sup> In the areas of Rwanda served by Gardens for Health International, for example, women often have to walk for hours to reach the nearest health center in order to access treatment for themselves or their malnourished children. The time burdens of seeking medical treatment or traveling to the distant fields that are often dedicated to food crops impede more productive uses of women's time. By addressing these problems and investing in female human capital, projects hope to free up women's time and energy for income generating activities.<sup>9</sup>

Second, many women participants in the food security projects struggled to make food supplies for the family last the whole year. Once harvests were consumed, project participants used

savings and sought labor off the farm to be able to buy food. Encouraging kitchen gardens or other small-scale agriculture helps women extend their food supplies during the lean months. Moreover, for most rural households there is not a clear distinction between food for the home and food for the market. Increased food production, especially of vegetables promoted by projects for their nutritive value, can also lead to income generation if excess production is available. In order to take advantage of the income-generation opportunities associated with potential surplus, participants in such projects were almost uniformly trained on small business development or encouraged to join village-level savings and loan groups.

## **INTERVENTIONS THAT WORK**

### **AGRICULTURAL INPUTS AND TECHNOLOGY**

Women play an integral and complex role in the household; they are in charge of providing food on the table, managing the household, and caring for children, the sick, and the elderly. As a result, according to studies by the World Bank, rural women are much more ‘time poor’ than men.<sup>10</sup> In addition, many women in developing areas are geographically constrained to the areas near their homes, either by culture or by household responsibilities. Any technology or new input that can save women time, improve women’s method of working in agriculture, or allow women to be successful within their geographical constraints help women not only be more productive, but also be more efficient and help reduce drudgery.<sup>11</sup> Our interviews revealed a variety of inputs and technologies being made available to female beneficiaries with the goal of reducing their workload or improving their output.

#### *INPUTS THAT WORK*

Recent years have seen a shift from food provision to agricultural input provision in areas that are food insecure or economically underperforming. By providing these inputs, organizations are able to assist women in the first steps of empowering themselves, either through starting businesses or ensuring the food security of their families. Effective inputs to distribute include livestock, especially smaller livestock such as poultry, tree and shrubbery seedlings, and new seed varieties.

In many contexts, smaller livestock work best for women, since they can be raised close to the home, have lower feed costs, and are usually more culturally acceptable for women to own. Send a Cow Uganda, an organization originally focused on providing cows has switched to providing smaller livestock as well. It uses an integrated approach with an emphasis on livestock management to combat poverty and has a variety of packages, including different combinations of egg-laying chickens, goats, and cattle. Each of these animals provides nutrition in the form of eggs or milk in addition to meat. In more arid areas, interventions such as the food security project International Orthodox Christian Charities (IOCC) carries out in the Gaza Strip provide rabbits to women. Many other organizations, such as USAID’s Value Girls and SIDA’s

ViAgroforestry, both projects based in the Lake Victoria Basin, have emphasized the benefits of poultry raising as an occupation for women.

Tree and shrubbery seedlings, the products of which can serve many purposes, are another effective input for women. Organizations such as the Green Belt Movement, an environment NGO based in Kenya, and ViAgroforestry, which encourages sustainable livelihood approaches involving agriculture and natural resource management, provide tree seedlings because of their multiple functions ranging from reduced soil erosion, improved water quality, and provision of easily available firewood, directly reducing the drudgery and danger associated with collecting firewood from far away. Shrubs are especially helpful for these purpose, as they grow quickly and are less likely to be cut down by men for larger projects. The larger environmental benefits of trees are discussed below.

Finally, seeds are a common input provided by both implementing and researching organizations. Seeds provided by organizations are often not local varieties, but instead are improved varieties that are more nutritious or have better agronomic characteristics. For example, the International Potato Center, along with several partners such as the Ethiopian Institute for Agricultural Research (EIAR), has several programs developing improved and biofortified varieties of potato and sweet potato planting material.<sup>12</sup> Through these new varieties, researchers have been able to increase productivity, reduce post-harvest lost, and improve nutrition. The provision of improved maize seed is also very common.

#### *SYSTEMS FOR PROVIDING INPUTS*

There are several methods for providing the inputs discussed above. Some organizations, such as IOCC, provide the inputs in exchange for training attendance. However, this method is becoming less prominent in the field, with conditional provision becoming more common. Conditions can take the form of loans or the expectation of the “rotating gift.” The connection between loans and inputs can take two forms. First, many programs, such as STRYDE, have funds for beneficiaries’ start-ups, either as small business funds or savings-matching loans. Others help negotiate lower interest rates on loans or lower prices for inputs in local markets. A second common practice, sometimes combined with traditional loan practices, is giving inputs as loans-in-kind. For example, One Acre Fund, an organization using a sustainable business model to empower rural households in East Africa, loans its clients seed and fertilizers, with the expectation that they will pay the organization back during the course of the season. Value Girls combines the two approaches, distributing in-kind matching grants of either poultry or fencing for vegetable gardens.

A common theme in all of these distribution strategies is the importance of making inputs available locally, either through distribution at training sessions and organization-run local distribution centers or through forging deals with local businesses. BRAC Uganda, an

organization that uses a microfinance-based approach to empower poor and marginalized populations, uses its field trainers, known as community agriculture promoters (CAPs), as saleswomen for inputs. CAPs are paid on commission for the inputs they sell instead of getting paid a fixed salary from the organization. Value Girls' project encourages its participants to purchase day-old chicks from its partner, Kenchic, a private poultry production company that also provides extension training to the young women. On the community side, CIP's SASHA "Marando Bora" project, which in part seeks to improve sweet potato seed and planting material distribution networks, uses two methods of distributing clean planting material. The first uses Decentralized Vine Multipliers (DVMs), or locally based middlemen providing their communities with quality vines in exchange for vouchers. However, research showed that this form of system could not reach the intended 150,000 beneficiaries, so the program has introduced another model using existing community groups to disseminate vines at a central location.

Especially in the case of seed and planting material, the idea of local provision of inputs is taken to the community level, with community seed banks or community seed networks being a common tool for propagation. For tree seedlings, like in the Green Belt Movement, community nurseries are a common form of propagation and distribution. Nurseries can provide both jobs and new planting material. Seed banks are another variation of community-based input provision. Vanastree is a network of rural smallholders in India who are dedicated to maintaining biodiversity and seed saving. By maintaining its high quality varieties, Vanastree is able to sell its seeds to local townspeople. A final way of propagating and distributing seed is through rotating seed systems. In Ethiopia, where quality seed production and proliferation is a big constraint, researchers work with formal groups of 20-25 farmers, giving them seed as a loan in kind at the beginning of planting season.<sup>13</sup> Using improved agricultural technologies, farmers cultivate this seed and, hopefully, produce a surplus at harvest season. The group is responsible for repaying the seed loan from their harvest. It is then loaned to another farmer group, repeating the process. Send a Cow Uganda uses a similar method, which it calls "Passing the Gift," but with the calves or chicks produced from the livestock it distributes. Recipients are expected to give away the first offspring of their livestock to other program participants.

### *TECHNOLOGIES THAT WORK*

Technologies that work best for women need to address the time and cash constraints that women face. While many technologies, such as irrigation systems, fertilizer and herbicide methods, and greenhouse structures, may increase productivity, they may also require initial cash investments or increase women's labor. For example, fertilizer may increase production but also require cash to purchase it, labor to apply it, and then additional labor on weeding. Later sections address the cash constraints that women face. Here we note technologies that may also be labor saving. For example, in arid regions, water catchment systems and irrigation systems play an important role. IOCC has focused on providing water catchment systems in the arid Gaza Strip,

enabling women to grow small gardens to ensure household food security. A large part of the Green Belt Movement's work in Kenya is establishing water catchment systems at the household level, teaching women how to trap and store rainwater runoff as well as how to use gray water from the kitchen and bathroom. These systems cut down on the amount of time women spend fetching water. Irrigation systems can cut down on the time spent hand-watering gardens as well as extend the growing season. In a similar way, providing cold frames, like CARE Tajikistan, and greenhouses, as IOCC did in Gaza, can extend the growing season in more extreme environments.

Pesticides, herbicides, and fertilizers are also popular technologies to save women time and produce better yields. Send a Cow Uganda teaches its beneficiaries to create organic fertilizers with cow dung and urine. The Kenyan Maize Development Program II, which uses the farming as a family business approach to development, has found that the provision of pesticides and herbicides is one of its most effective interventions. In addition to increasing quality crop production, it also frees up the time women spent weeding. Since spraying these chemicals is seen more as a male job, men take on some of the time burden of crop maintenance. Herbicides have especially helped families affected by HIV/AIDS, reducing the intensive work of weeding.

In the same way poultry rearing fits well with women's schedules and constraints, there are certain technologies that work well for women, usually technologies that do not require much land, labor, or time. For example, beekeeping and honey production can be made women-friendly with the use of artificial bee boxes, replacing the use of natural beehives that are formed in trees. Social norms prohibit women from climbing trees in countries such as Ethiopia, where Oxfam has enacted a honey project that targets women's cooperatives; bringing the boxes closer to the home reduces the burden on women and makes the activity culturally acceptable.<sup>14</sup> In addition, honey technology works well with women because it takes up very little space and can produce the quality honey needed to sell on international markets. As a result, women can make as much income from four honey boxes as they can make from growing maize or a cash crop on half a hectare of land.

Similarly, in communities with limited land, women can use small-scale silage making technologies, or plastic storage tubes and boxes, to collect grasses from surrounding public lands to use as cattle feed, freeing up their own limited land to grow other vegetables. Such technologies can increase nutrition and income by both improving livestock's health and by allowing women to diversify their incomes and diets with vegetables.

#### *BENEFITS OF INPUTS AND TECHNOLOGIES*

In short, innovative inputs and technologies can free up women's time, space and income, allowing women to invest in new business ventures, increased agricultural production, or other activities. Improved planting materials and better technology can also create more nutritious

produce and larger crop yields, making women overall more productive. Inputs distributed via a loan structure, accompanied by training, and made available locally tend to work most effectively.

## **PROCESSING AND STORAGE**

Processing and storage technologies are important in both food security and income generation via agriculture. These technologies are the crucial step between harvest and sale, or between harvest and consumption, in either scenario limiting wasted or ruined product.<sup>15</sup> Improved processing machinery can also reduce drudgery in the household.<sup>16</sup> For women who cannot access land, processing may offer an opportunity to engage in the agriculture sector. Projects may be able to facilitate women acquiring processing technology or equipment. However, issues of geographical convenience and technology training are barriers to engaging women in such activities. By providing more convenient technology and better training, the sector holds much potential.

### *STORAGE*

The storage of seeds and planting material is especially important in ensuring agricultural sustainability. Seed banks, as discussed in the agricultural inputs section above, are a crucial step in the storage and distribution of planting material. However, storage is not just about seeds and planting materials, but also about crop output. In the post harvest season, storing crop output becomes important, either to consume or sell later in the year. For consumption, drying processes are a helpful way to make food non-perishable.<sup>17</sup> Crops for market, such as maize, can be stored with the goal of selling during the lean season for a higher price. Proper storage bags and pesticides are crucial for this practice, which can be provided by the organization, as One Acre Fund does, or sold to beneficiaries via local providers.

### *PROCESSING*

Food processing technologies are especially beneficial to women for two reasons. First, women are in charge of feeding families, and processing crops into non-perishable forms during the harvest season can help women save food for the lean season. Second, women can work further up the agricultural value chain in places where the scarcity of land hinders women's ability to farm. Commercial processing is an especially important source of income for women in Latin America, where cultural norms limit women's direct involvement in agricultural activities such as raising cattle or planting cash crops.<sup>18</sup> Additionally, processing outputs for transportation or creating value-added products can be lucrative market niches, providing the crucial link to an international market. Processing technologies are most cost effective when they target perishable goods, like shea nuts, or goods that need to be treated before being shipped into the international market, like coffee.

Through new processing technologies and the expansion of existing women's cooperatives, the dairy sector provides many opportunities for women's economic engagement and empowerment. Two of the projects we reviewed worked with women in the dairy sector. Oxfam's Women-led Dairy Development Project in Vavuniya, Sri Lanka works with women's cooperatives to collect and process fresh milk as well as create value-added products such as flavored milk and curd. The second, a joint initiative by TechnoServe and the Millennium Challenge Account in Nicaragua, focused on female artisanal cheese makers, with an emphasis on the value-added stage of the supply chain. Both initiatives formed and strengthened women's groups and focused on training women in topics such as milk production, business management and marketing, good manufacturing practices, sanitation, development of new products, and milk quality testing. Women in both programs have seen incomes increase significantly.

In addition to training, access to processing equipment is key to women's economic performance in the sector. Given the high costs of investing in and maintaining processing equipment, most forms of technology distribution emphasize group ownership or using processing technology as an income-generating input. A variation on this strategy is to distribute technology and training through cooperatives, which is a larger group structure. Another strategy is to help a woman invest in processing equipment, such as the maize grinding mills in TechnoServe's Millennium Mills of Mozambique project, allowing the woman to build a business off of the equipment. Putting ownership of the equipment into the hands of women has led to success for these projects. However, in the past doing so has carried the risk of male co-optation or destruction of the equipment. This seems to be less common in these projects because the equipment is distributed as part of larger, integrated approaches. The effects are twofold: social and business trainings make women more respected businesspeople in the community and men understand the potential economic benefits for themselves as well. With proper equipment and social support, women can use processing techniques to improve the quality of their products and increase their income.

#### *CASE STUDY: TECHNO SERVE GHANA'S SHEA PROJECT*

TechnoServe Ghana's Shea Project lasted for three years, from 2009 to 2011, reaching 80 community groups for a total of 4,109 women. The project sought to build the capacity of economically marginalized women in Northern Ghana through business and technical training for shea nut processing and marketing. Shea nut collection and processing is common in this region, but is just viewed as a passed-on female activity and not a business. TechnoServe sought to bring a business perspective to the sector, emphasizing the potential economic and social benefits.

Groups chosen for the project had to be already working in shea processing and collection, with easy access to the shea trees and needed to have at least a basic group structure. Project leaders assessed each groups' training needs, with the goal of transforming groups into competent,

dynamic groups. The ultimate goals of the project were to build entrepreneurial skills, to address quality control issues with the shea nuts and butter, and to strengthen groups in order to ensure project sustainability.

In addition to business and group dynamics training, business advisors focused on improving shea production. Project managers found that the time between nut collection and nut processing greatly affected nut and butter quality. Nuts kept for more than three days, a common practice when the distance between the trees and the processors is long, fermented in the heat and went bad. Team members educated women on the importance of using the nuts quickly and women slowly accepted the practice. Women were also cooking the nuts much longer than the necessary 45 minutes. However, 45 minutes was a hard concept for many of the women to understand, so project leaders compared the boiling time to that of the local rice, noting that the nuts had to be boiled for much less time. Women were better able to understand this description and thus, reduced their cooking times.

Some communities initially had problems accessing processing equipment. Some communities did not have their own equipment and had to trek 5-7 kilometers to the nearest processing mill. To solve this problem, TechnoServe provided some communities with processing equipment, with the condition that the women would generate income to use for maintenance and future repairs. By giving processing equipment to strategically picked, centrally located communities, TechnoServe increased productivity for not just one community, but for members of many communities.

The project was successful in addressing quality issues of the shea nut products and included a spillover effect when women shared their new knowledge with nonmembers in the community. Women also increased their productivity and income. Before the intervention, the 4,109 women produced 1,618 metric tons of shea butter with an annual income of \$88 per woman, now they produce 8,000 metric tons of shea butter with an annual income of \$343 per woman. Women started using banks and managing their cash, saving in cash instead of in kind and taking care of their families, including paying school fees and medical expenses.

#### *IMPLEMENTING PROCESSING AND STORAGE PROJECTS*

While storage techniques and equipment are easier to distribute at the individual level, projects that seek to improve processing techniques are more effective when the intervention works in a group setting. In some cases, the processing center can create the group structure, as was done by the Millennium Mills of Mozambique. For women in this project area, the female-owned mills have become important social centers and locations for trainings and health services. Finally, processing technologies are also most effective when paired with trainings on marketing strategies, pre-packaged brands, or established market connections. If these support structures

exist, processing technology can play an important and cost effective role in women's economic and social empowerment in the agricultural sector.

## **EXTENSION**

Extension was the most widespread intervention among the projects we interviewed. However, research suggests that many women are excluded from extension services. For example, before TechnoServe's Coffee Initiative entered the market in Ethiopia, baseline surveys suggested that extension services reached only 6% of women.<sup>19</sup> Similar trends exist throughout the world. Therefore, while type of extension is important, the style of delivery, including place, time, extension officer, and materials used, are all very important in determining how accessible extension programs are to women.<sup>20</sup> This section first describes the type of information extension programs are being used to deliver, including agricultural, social, and business trainings. It then considers different types of extension structures to understand what works best for women, followed by the identification of strategies that work to encourage female attendance at trainings. Using various techniques described below, mixed gender projects have been able to achieve 30-40% female participation in extension trainings. These trainings, along with the trainings offered to only women in gender-focused projects, have given women the tools to be more effective farmers, businesswomen, and community leaders.

### *TYPES OF EXTENSION*

Extension programs usually focus on one of three themes: agricultural techniques, social empowerment, or business training. Often, these trainings are delivered through the same extension network. While necessary topics for trainings vary by region and crop type, the most effective agricultural extension programs instruct women on how to use newly-introduced technology and inputs, such as those described in the section above. Agricultural training is also important in improving existing methods of planting crops, such as teaching about organic and sustainable agriculture and better water management systems. Agricultural extension is best delivered via field demonstrations in which trainers use either project land or beneficiaries' land to show project participants new methods and have them test out the methods for themselves. This method was adopted from farmer field schools, participatory learning and research centers.

While agricultural methods are the traditional topic of extension programs, most projects that target women's empowerment have integrated social training into its extension. Gender trainings are a popular subject, for both women and communities at large. Most gender equity programs, such as the trainings delivered by the Coffee Initiative, focus on the business reasons to include women in farming decisions or cooperatives. In regions where women are marginalized, such as Uttar Pradesh where Sunhara India and Sunhara Wal-Mart work, projects have the express goal of generating the identity of "women farmers," a concept that did not exist just a few years ago.

Gender trainings are especially important for women in agriculture, but they are not the only type of social extension programs. For projects that work with weak cooperatives and other farmers' groups, such as the Shea project, conflict resolution and leadership trainings are especially important to ensure group cohesion and success. Nobo Jibon, Save the Children's integrated project in Bangladesh, uses its extension networks to educate women on nutrition and disaster preparedness. STRYDE has a comprehensive business-training module that includes lessons on personal finance, entrepreneurship, business plan and resume writing, and interviewing skills. Other projects offer more general business extension programs, including training on how to grow a business, proper sanitation and quality standards, marketing, and other key skills in small business or agribusiness ownership. In short, the networks set up for agricultural extension can be used to deliver trainings on other skills that help project participants, especially women, become more stable and competitive farmers or small business owners and ensure a better community environment for all.

#### *STRUCTURE OF EXTENSION NETWORK*

An effective extension network can take several forms. Some projects, such as the Shea project, rely on a small group of highly trained officers that travel from village to village to deliver programs. At the other extreme, organizations such as Vi Agroforestry rely on locally based agents who live with people they serve, therefore establishing trust and rapport with project beneficiaries. Most programs use a combination of the two, recruiting extension agents from the community or surrounding areas and training them at a central location. This is one variation of cascade training, in which a project trains a handful of staff members, who in turn train other trainers, who then train participants directly. Another effective variation is using community volunteer leaders as extension officers. The Green Belt Movement relies heavily on community volunteers, who can answer questions about agricultural techniques and keep up community energy when staff members are not present. Many projects use women and youth as extension officers, the former because they can have a greater impact on women and the latter because they can move easily throughout the countryside as trainers. Offering these opportunities to women and youth can also empower these two marginalized groups. Finally, projects must decide whether they will work within existing government extension networks or create their own. While working with government extension programs can lead to more sustainable networks and save projects money, many projects cited ineffectiveness or corruption in government extension programs and refused to work with them. For example, the Kenya Maize Development Program contracts Ministry of Agriculture extension staff, while Vi Agroforestry has been criticized for not using government agents.

A project must also decide whether it will deliver extension at the level of the cooperative or the household. Most projects choose to deliver trainings through cooperatives or farmers' groups since they provide a structure for the projects. However, some projects choose to work at the household level, using households as their structure for delivery. These projects tend to focus on

farming as a family business, working to involve both men and women in farming decisions and household empowerment. The Kenya Maize Development Program (see case study below) targets households for this very reason.

### *REACHING WOMEN*

A good curriculum and an effective extension system will be useless if a project cannot get women to attend trainings. The key to increasing women's participation in extension trainings is to invite them and to make the environment of the trainings welcoming. While this may sound simplistic, these two approaches are often not carried out thoroughly or effectively. TechnoServe's East Africa Coffee Initiative has done an exceptional job of increasing its female participation rates, reaching average rates of 42% female attendance. When it started, rates were as low as 6% in some of its locations. The project's success lies in the multiple reinforcing mechanisms staff members use to recruit women. First, they ask the decision makers and leaders in the communities to emphasize that women should come to trainings. Then, farmer trainers visit households to both tell the husbands to bring their wives and to tell the wives that they are both invited and welcome. Finally, they make trainings easy and comfortable to attend; they provide childcare, hold trainings at the most convenient times for women, and allow women to sit separately and work in female-only small groups.

Sometimes making trainings convenient is as simple as cutting training times from all-day session to shorter, more frequent sessions. Other simple ways to make trainings accessible are to use centrally located and apolitical locations for the trainings, especially in areas where women are rarely allowed to travel alone. For example, churches can provide safe, neutral spaces for trainings. Finally, a seemingly obvious but at times neglected method of targeting women is to simplify lesson plans. Many women in these programs are not fully literate, and long lectures can be alienating and ineffective. By delivering material in a participatory way, either by having field demonstrations, conversations, role-plays, radio shows, or other engaging methods, projects can have a much bigger impact without extensive curriculum changes.

### *CASE STUDY: KENYAN MAIZE DEVELOPMENT PROJECT II*

KMDP II, implemented by ACDI/VOCA, is the second phase of the Kenya Maize Development Program, initially started in 2002. The project targets maize growers because 50% of arable land in Kenya is planted with maize. With a focus on smallholder organizations, KMDP strives to increase rural household income and increase market and business support. The new phase, KMDP II, began in 2010 and focuses on incorporating women and youth, who make up 80% of labor in the maize sector, into existing project frameworks. The pilot is also being scaled up to include other staple crops, including Irish potatoes, beans, and sorghum.

The project targets households that have less than 20 acres of land and works with both men and women. However, during the first iteration of KMDP, project managers realized women were

doing the majority of the agricultural work, but were not the ones receiving the training. Women did not have time to go to meetings, which often lasted all day or were out of town. In attempting to remedy the non-participation of women, KMDP II chose not to focus only on women, instead introducing Farming as a Family Business (FaaFB), a program that promotes women as agents and beneficiaries of agricultural production.

KMDP relies on a network of extension agents, including those hired by KMDP's project partners and those contracted through the Ministry of Agriculture. KMDP staff members train all extension agents. Village youth are often recruited as extension agents, since they can easily travel through the rural areas and engage with the local farmers. Extension services include agronomics education, such as how to use pesticides and fertilizers, as well as market and business education. For women, churches are often used as training sites, since it is culturally acceptable for women to attend church functions. While women-only cooperatives are important in reaching women and producer organizations originally formed the basis for extension services, KMDP also works directly at the household level.

The new Farming as a Family Business project seeks to redistribute time burdens in the household, increase household productivity through improved technologies, engage women in decision-making through general empowerment and business education, and build strong family dynamics within the household to achieve family business effectiveness. The program uses the fictional character of "Mali Ngumu" to represent a farmer who does not see farm planning as important, creating a series of stories and posters about Mali Ngumu and his family to demonstrate lessons and emphasize tactics such as the importance of including wives in farm trainings. Business games are also an important aspect of the Farming as a Family Business interactive curriculum. Finally, KMDP II produces a radio show sharing valuable farming and business information that is aired in the afternoon when women are done with household responsibilities and have time to listen.

KMDP has learned that both men and women must be involved in farming and decision-making in order for the household, and the business, to be successful. While the ways in which men and women contribute to the family farming business can differ across cultures and crop-type, the concept of conceiving of the household as a farming business and the farming business as a household endeavor can be replicated and scaled up, as is evidenced by USAID's recent call for proposals to expand the program to other crops and areas.

#### *BEST PRACTICES IN EXTENSION*

Extension is the most important tool projects have to reach women and empower them to be more productive farmers and community members. However, extension programs must be adjusted to best serve women, including convenient training times and locations, sincere efforts to invite women, and interactive training modules. In addition, social and business trainings can

be just as important as agricultural training in increasing women's economic empowerment in agriculture.

Trainings tend to work better when community members are comfortable with extension workers, which can be accomplished through using community volunteers, women, youth, or trainers who live in the area. In fact, community knowledge sharing is an important aspect of many projects, including the Green Belt Movement, WOLAR, Vanastree, and Vi Agroforestry. Exchange visits between communities to share knowledge and experience are also important tools for introducing and sustaining better agricultural practices. Agricultural trainings that are sensitive to current agricultural methods in project areas and enact change through showing rather than telling tend to be the most effective projects.

### **ACCESS TO CREDIT, SAVINGS, AND FINANCIAL SERVICES**

Credit, savings, and loans play a significant role in creating long-term achievements for women in the agricultural sector.<sup>21</sup> As a result, microloans and microsavings were provided or encouraged by the majority of projects we interviewed, though approaches varied, influenced by intended purpose and local financial markets. As with other systems of input or extension, using groups as a forum for delivery was a common theme in the projects we interviewed. Groups can provide peer responsibility for repayment, in lieu of individual collateral, as well as a support system for saving money. While some projects brokered deals between individual women and banks, most included some form of group system in their microfinance approaches.

#### *AVENUES FOR LOAN DISTRIBUTION*

Loans and savings approaches can be broken down into two basic categories: informal and formal methods. Informal methods, such as village savings organizations or rotating savings and credit groups, are especially popular with projects that target vulnerable groups such as women. Projects in food security and nutrition, such as Nobo Jibon or CARE Bangladesh's Shouardo project, which in part distributes ducks to women in flood prone areas of Bangladesh, tend to use informal methods. On the other hand, projects that take a business-approach to development, such as Value Girls of SIDA's FondeAgro, which worked with smallholders in Nicaragua, often use formal methods of microfinance, at least in part. These projects work to connect beneficiaries, either as groups or as individuals, to local banks or microfinance institutions by negotiating lower interest rates for project participants. Some projects combine the two, asking women to save as a group, but encouraging them to approach banks for larger, group loans once they have saved enough collateral. Another hybrid between the two microfinance methods is the use of cooperatives as a center for savings and credit. This method combines the trust collateral of the informal, group-based methods of lending with the larger assets and more formal structures of a bank. Experience in most of the projects showed that some form of group structure in microfinance works best for women farmers, who must work against discrimination

to establish themselves as reliable and at times must negotiate with male family members over loans.

Another way of extending loans is for the project itself to finance the inputs, giving seeds and such to participants directly, as One Acre Fund chooses to, or by matching participants' savings to aid in purchasing sufficient inputs, as Value Girls does. While this is not always possible given project budgets or organization structure, organization-based financing allows projects to tailor loan plans to the needs of beneficiaries, which can be crucial in the agricultural field. It is especially important for agricultural loans to consider growing cycles when setting repayment schedules. For example, BRAC Uganda created a longer-term repayment cycle for its group agricultural loans, extending it to eight months, as opposed to the usual two to three months, in order to accommodate typical growing seasons in Uganda. One Acre Fund allows their clients to start payment as soon as the terms of the input financing are established, at times before the inputs are distributed for the season. This can help women who want to ensure that extra cash is going towards loan repayment instead of being co-opted by men or other family members to be spent elsewhere. In a similar vein, making loans in kind by providing inputs can ensure that women are able to use the money for its intended purpose. By responding to local growing cycles and feedback from community members, projects can create loan programs that work best for the beneficiaries they are targeting.

#### *GENDERED ASPECTS OF LOANS*

An additional important factor is whether to give individual loans to women or joint loans to men and women. The question of whether to loan to only women or to issue joint loans to couples is intensified in the case of women in the agricultural supply chain because of the land and asset ownership issues discussed below. Even if women are in charge of a farm or business in practice, they often do not legally own it themselves and thus cannot use it as collateral. In addition, there have been cases of men using women's positions in village savings groups for their own benefit. In some instances, men have gotten women to take out loans for them, then vanish with the money and leave the women with the debt.<sup>22</sup> In other instances, men take out loans without telling their wives, and then fail to repay, leaving the family in debt. In order to combat these issues, many projects attempt to issue joint loans, or at least require family knowledge about any loans given. Other projects walk the line between the two. For example, BRAC Uganda allows women to take out smaller loans by themselves, but requires joint loans for larger amounts.

#### *LOANS AS PART OF A PACKAGE*

Finally, it is important to combine loans with financial education and business planning. Some projects offer basic lessons in savings and business skills. Others, like the STRYDE program, Value Girls, and KMDP, offer an array of financial literacy classes such as personal finance management, business plan development, and how to integrate the budgets for both farm and household costs. With women especially, it is important to develop literacy on a more basic

level, ensuring that women can keep sufficient records in their passbooks. Projects must give women the tools to properly budget, record, and manage their finances, especially in the context of farm and family budgeting, so that they can take full advantage of microloans or savings accounts. A failure to do so can sow sustainability problems after the project ends, a lesson that the Clinton Giustra Sustainable Growth Initiative learned with its Taná project.

#### *CASE STUDY: BRAC UGANDA*

A subsidiary of the Bangladesh Rehabilitation Assistance Committee, BRAC Uganda was established in 2006 with the goal of creating a hunger-free nation, eradicating poverty and empowering poor and marginalized populations. The organization seeks to achieve these goals through a core microfinance program that is complemented, in a holistic approach, by agriculture, youth development, health and livestock programs. BRAC's approach relies on a strong community-level network that revolves around microloans. The organization established women's groups in the areas it serves. Larger groups of 20 to 30 are divided into groups of 5 women, with an elected leader. The organization distributes microloans through these groups, with the members of the small groups taking co-responsibility for the loans, solving peer repayment issues. The program also encourages group savings.<sup>23</sup>

Since many loans distributed are for agriculture-related activities, BRAC provides agricultural extension as well, with the goal of increasing the productivity of women farmers at the subsistence level. From the women that receive loans, BRAC Uganda trains community agriculture promoters (CAPs), who serve as extension officers for the organization's agriculture program. Tapping into village networks formed by the microloan groups, CAPs deliver lessons on new agronomic technologies, such as improved cultivation methods, seed sowing, seed selecting and pest and disease management. The agriculture program is exclusively targeted at women because, in the Ugandan context, women tend to be the primary farmers at the subsistence level. The project has evolved since its inception to meet the specific needs of the Ugandan context. In comparison to BRAC's original model, developed in Bangladesh, the agriculture project has become heavily women-centered and focuses on improving land use practices in a country with a significantly lower population density than that of Bangladesh.

In addition to providing agricultural extension, BRAC Uganda has also adjusted its loan programs to better serve women farmers, who are the main targets of its microfinance program. It has enabled women to take out funds for group farming projects, adjusting the repayment term to eight months in order to better accommodate growing seasons and conditions in Uganda. Moreover, recognizing gendered tensions surrounding money use, BRAC works with men and women jointly when issuing larger loans.

BRAC Uganda's success hinges on its holistic approach to development instead of employing a single strategy. Flexible microloan programs coupled with agricultural, health, livestock, and youth development programs provide women with the opportunity and comprehensive training to be successful farmers and businesswomen.

#### *LOANS AND WOMEN AGRICULTURALISTS*

The introduction of microloans and microsavings is crucial for the long-term success of women in agriculture. As described above, the form of such microfinance institutions varies depending on the goals of the project, with formal and informal methods each having their advantages and disadvantages. However, there are common lessons to be learned. First, loans are most effective with encouraged savings programs, especially for women who do not have assets to use as collateral for formal loans. Second, especially if a project is working with households as a unit or with farms as a family business, it is important to encourage transparency about loans within the family, with the goal of empowering women to use the money loaned in the way she planned. Third, agricultural loans often do not follow the same rules as small business loans since they are dependent on weather, seasons, and uneven cash flow. Adapting loans to best work with local conditions and local preferences can improve repayment rates, making both the loaning institutions and the participants more successful. Fourth, loans work better when coupled with financial literacy and business education as well as trainings on how to use new inputs or technologies in which women can invest. In fact, loans work best when integrated into a holistic approach, such as the approach BRAC Uganda uses.

#### **WOMEN'S ACCESS TO LAND AND TENURE SECURITY**

While the provision of extension and training is an important aspect of achieving women's agricultural success, many of the projects discussed above have cited women's lack of land tenure or asset security as a barrier to achieving women's economic empowerment. For example, membership requirements for many cooperatives insist that members own land, therefore limiting the number of eligible women who can join and limiting membership to those who already have some degree of economic power. This has been found to be a problem in the Coffee Initiative in East Africa and the Cooperative Development Program in Paraguay. Other projects, such as Vi Agroforestry, cite the practice of male work migration as contributing to problems of ownership, with women having *de facto* control of the land while men are away, but men returning to either claim profits or destroy work under their *de jure* ownership. In all cases, local circumstances, customary law, and national law dictate the extent to which land and tenure insecurity hinders women's empowerment via agriculture.

Several recent studies have concluded that land rights can act as a tool for market access or social access in both the community and the household.<sup>24</sup> Evidence from the field has shown that when women feel more secure in their land tenure, they start engaging in more sustainable

income generating activities and investing in more capital, such as brick structures, more economically profitable animals such as cows, and larger gardens.<sup>25</sup>

One challenge that was widely documented in the early literature on women in development is that when projects result in increased profits, those with more power in the household or community tend to take them over. This often resulted in men displacing women in these activities.<sup>26</sup> Thus, projects designed to benefit women must strengthen women's claims to the resources before they begin. This may involve strengthening women's land rights or working to change the local norms about women controlling the profits from farm enterprises.

Addressing asset ownership is an important aspect of most projects working with women in agriculture. One approach to addressing the problem is to treat it as one of many factors of implementation. For example, TechnoServe's Coffee Initiative in East Africa incentivized men to give small portions of land or coffee trees to their wives. In return, local cooperatives met the gender quotas necessary to receive the program's extension services and technology trainings. Other projects, such as ACDI/VOCA's Kenya Maize Development Program II and Vi Agroforestry's programs, focus less on ownership and more on women's ability to make decisions on the farm. Both programs use farm-planning education for husbands and wives to establish joint visions for the farm, allowing the women to contribute to the decision-making process and enact the plan without fear of retribution from their husbands. The above examples are helpful in addressing the short-term problems of female land access, especially in projects that do not seek to overtly change land ownership structures. However, while they can potentially change social perceptions of women both in the community and in the home, these approaches to land access do not change women's legal rights.

#### *LAND RIGHTS-FOCUSED PROJECTS*

Another way of creating and enforcing women's land rights is through projects that specifically target female land ownership and legal structures. Two lessons emerged from interviews with projects with this focus. First, community education, including the education of both women and men as well as local leaders, is paramount. Overall community education on women's property rights is an important step in changing discriminatory cultural attitudes and practices and creating a sustainable community structure to support women's rights. For UCOBAC's Women's Land and Property Rights Program, such trainings take the form of community dialogue sessions, drama activities, radio talk shows, and advocacy materials. Another important step in this process is training women, via literacy classes and rights sensitization, to be their own advocates. Finally, "community" can reach all the way to the national arena, and political mobilization on a national level is important in countries without equal land rights.

Second, it is important to establish the necessary community-based legal support structures for property disputes, including watchdogs and paralegals. By training community members to be

watchdogs that oversee property disputes and paralegals that assist women in property disputes, projects ensure that women have the tools they need to ensure their rights. Watchdogs can refer affected women to legal aid services within the existing justice system, which are then provided by paralegals. Paralegals can also assist with alternative dispute resolution, or informal mediations between conflicting parties, via the local customary system. Either way, such structures can reinforce and enact community-learning principles.

*CASE STUDY: ACTIONAID'S WOMEN'S LAND RIGHTS PROJECT (WOLAR)*

WOLAR was a multi-country, large-scale initiative to promote women's economic and social independence. The project used collective structures to deliver rights education, enact local and national policy change, strengthen communities, and access justice as well as productive resources and assets. A broad network of actors and implementing teams carried out the interventions in southern Africa, including Malawi, Mozambique, South Africa, Zambia, and Zimbabwe from 2009 to 2011. WOLAR targeted smallholder women farmers in a variety of occupations, from cash crop farmers in Malawi to women with collective vegetable gardens in Mozambique to farm laborers in South Africa. Given these disparate occupations and the complex issues of women's land ownership that vary by local systems of land ownership and legal frameworks, each country team tailored the project strategies to their local context. ActionAid's coordination and the project's ultimate goal of empowering women and ensuring women's rights linked together the country projects.

All WOLAR country projects planned interventions based on five project-wide result areas: 1) raising rights awareness and strengthening women's networks, 2) mobilizing political support on the local, national and international levels, 3) access to justice, 4) access to productive resources, and 5) knowledge sharing, both within and across countries.

Knowledge building, both locally and nationally, was a large part of WOLAR's program. Collective groups, such as REFLECT circles<sup>27</sup> in Malawi, consisted of small groups of women that met regularly for literacy training and rights education, catalyzing change in the community when women began to demand their equal land rights. Gender trainings targeted chiefs, traditional leaders, and local government officials. Along with this education, many WOLAR projects had a strong focus on local political mobilization, advocating for equal land rights and women's equal participation in decision-making structures. Some teams did national level lobbying for updated land policies and others stressed the public mobilization of women to lobby and increase the visibility of women as farmers. Regional work explored the implications of the growing threat of large-scale land acquisitions for rural women and advocated for adequate international policy responses to address women's land rights concerns.

In practice, women's ability to gain ownership and use of land depends heavily on their access to justice, the quality of justice system, and the ability to use the land efficiently. WOLAR focused

on improvements in both formal and informal avenues of justice: community paralegals were trained in land rights and gender equality to provide women with legal assistance, and local leadership and formal legal entities were trained to improve the quality of justice. In order to ensure women's ability to productively use land, WOLAR also liaised with local governments, organizations, and businesses for women's equal access to extension services on seed varieties, farming technologies, marketing strategies, and credit.

Finally, WOLAR emphasized knowledge sharing between countries via exchange visits within and between countries, joint research and shared learning meetings. Women farmers shared farming techniques, mobilization strategies and advocacy experiences with each other, and project partners exchanges lessons and good practices on advancing women's land rights.

WOLAR succeeded in its primary goal of increasing women's control over land and decision-making power over land use, inputs and proceeds, therefore showing what rights to land can look like in women's daily lives. It also achieved secondary benefits, such as capacity building at the community level and raised awareness of women's rights at the local level. In many cases, these successes translated into increases in productivity, household income and diversity in crops grown by women farmers.

#### *IMPLEMENTING LAND RIGHTS PROJECTS*

Another important lesson to draw from land rights projects is that local contexts matter. The legal and cultural structures surrounding female land rights are often complex and delicate. In addition to often-contradictory formal laws and customary laws, women play different roles in the agricultural economy. For example, WOLAR's work with women farm laborers in South Africa required different tools for change than its work with female cash crop farmers in Malawi. As WOLAR shows us, an emphasis on local context does not necessitate a small scale.

Second, when implementing land rights projects, it is important to not only ensure women's legal access to land but to also ensure a woman's ability to use the land in an effective and lucrative way. In short, projects should not just create protective land rights, but also productive land rights.<sup>28</sup>

#### **MARKET ACCESS**

Market access is a crucial part of any income-generating project for women. However, markets can be risky for women.<sup>29</sup> While smallholder farmers already struggle to obtain sufficient market access, in many areas women are even less likely to have access to local, regional, and international markets. In order for projects to make a significant impact, they must address the potential outlets for products and teach women the marketing skills necessary to negotiate sales. Many projects take this one step further by doing larger value chain analyses. This involves

considering market access not just as a way to sell output, but also as how to purchase inputs and how to specialize in order to corner niche markets. By making smallholder farmers significant players in the market, projects stimulate income generation, empower women farmers, and create mutually beneficial relationships between farmers and buyers.

#### *FARMERS' GROUPS AND MARKET ACCESS*

The use of farmers' groups is a common tool in linking small farmers to the market.<sup>30</sup> By pooling surpluses or funds for inputs, groups can make marketing strategies and technology available to its members, even to those with few resources. Pooling surpluses, often referred to as bulking, is usually a crucial step in connecting smallholders with larger markets. Once smallholder farmers establish a minimum volume of a good, they can reach a variety of buyers, including supermarkets, processors, and international buyers. When expanding into international markets, cooperatives serve as processing centers and are crucial in establishing consistent volumes and qualities. The utility of farmers' groups in these areas also functions on a smaller scale for locally based buyers. Farmers' groups work especially well for women, for reasons discussed in the "Targets of Interventions" section above. However, projects that seek to establish food security or reduce malnutrition, such as the Kenya Maize Development Program, sometimes chose to abandon the group model to work on the individual or household level. These projects often do not seek access to large markets, instead focusing on local markets and household consumption. That said, farmers' groups are the prevailing method for increasing small farmer market access, and therefore are the focus of this section.

#### *PATHS FOR MARKET ENGAGEMENT*

Market access is a problem faced by men and women small farmers; many of the basic paths to market engagement discussed below would benefit both men and women smallholders. There are three basic ways to engage the groups more effectively in markets in order to foster economic success. First, projects can directly negotiate or create buyers for their beneficiaries, usually single, large-scale buyers. This is a popular method in the international arena with high-value crops such as coffee or honey, but can also occur on the national level. The second method is to teach beneficiaries how to negotiate with middlemen and commodity buyers. This method is most effective on the regional level and can be effective without farmers' groups. The third method is to foster more local market access by creating local markets or setting up local buyers for beneficiaries. This method is somewhat akin to the first approach, but on a much smaller scale. Each method has its benefits and drawbacks, working in different settings.

#### *Connecting Groups with Large Buyers*

The first method of facilitating market access is the creation of market connections between smallholder farmers and large buyers, or markets with more affluent buyers, willing to pay a higher price than local markets. This method relies heavily on the cooperative model to ensure a minimum volume and quality level of the goods being marketed. It is important to note that all of

these projects also involve an extension component to teach best practices in the growing, harvesting, and processing of marketable crops.

The most basic form of this method is to create deals with companies in another country, exporting high value crops such as cotton, coffee, or honey. For example, SIDA's FondeAgro enabled deals between the Nicaraguan coffee farmers and several Swedish companies, making Sweden the number one importer of premium Nicaraguan coffee. Often deals such as these include a domestic processing company that buys the good from the smallholder farmers and processes it before brokering deals with international markets. For example, the Oxfam GB's Women's Economic Leadership in the Honey Value Chain project uses the Ethiopian company Ambrosia to process and market the women's collectives' honey.

An increasingly popular trend is to create these types of market connections within a country. The Sunhara Wal-Mart project in India connects its female beneficiaries who work in vegetable farming and incense rolling to large domestic buyers, such as Bharti Wal-Mart, Big Bazaar, and the India Tobacco Company. The Clinton Giustra Sustainable Growth Initiative's Taná project worked with marginalized Afro-Colombian women, helping them create their own brand of organic spices. In addition to setting up deals with several local supermarket chains to create a market for the spices, Taná went a step further to hire in-store brand representatives to give out samples and recipes based on the spices, creating domestic demand for their specific product. While all of these projects differ in implementation style and buyer selection, they all rely on project staff to create market opportunities for beneficiaries. This method can create some of the biggest and most lucrative opportunities, but there are often problems of sustainability after the project exits.

### *Marketing Training*

A second, perhaps more sustainable method is to teach beneficiaries marketing and negotiation skills so that they can deal with local middlemen and buyers by themselves. In rural settings, middlemen dominate most marketing relationships. Because of a farmer's lack of market information or lack of opportunities to sell elsewhere, middlemen can set the buying price much lower than market price. Smallholder farmers lose a significant amount of potential income due to such deals each year. Women are especially vulnerable to these subprime deals since buyers tend to be men and often take advantage of social norms to pay women lower prices. To combat this trend, several projects give their beneficiaries the tools they need to ensure a fair price by teaching them negotiating skills and providing them with market information. For example, the Shea project in Ghana teaches women about contract agreements, conflict resolution, and other skills that will help them negotiate effectively with bulk Shea buyers. As a result, the average annual US\$250 increase in women's incomes was not solely attributed to increased production, but partially due to increased prices from negotiating. Another component of successful negotiation is up-to-date market information. Women's lack of information often puts them at a

disadvantage. The Kenyan Maize Development program made market information available both through information boards in villages and through SMS messages on cell phones. Given the proper skills and tools, smallholder farmers can negotiate their own, more lucrative market connections even after project exit.

### *Fostering Local Partnerships*

Finally, projects can create local markets or local demand for their beneficiaries' products. This method is similar to the first method, but on a much smaller scale, and has two variations. The first is the establishment of local buyer partnerships, such as a school to buy local produce or smaller processing plant to buy bulked cash crops. For example, the cooperatives that participate in Oxfam GB's Sri Lanka Dairy Project sell flavored milk to schools. TechnoServe Nicaragua's MCA Dairy project combined the two sides of its intervention, marketing its dairy farmers' milk to its artisanal cheese makers, creating a sustainable market connection. Such connections are beneficial to the community and can result in long-term partnerships.

Another way of creating marketing opportunities locally is to create a project-associated store or market. Two of Agribusiness Systems International's projects, Sunhara Wal-Mart and Sunhara India, have taken this approach. The former has created a store and a system of pushcart sellers as a secondary market for the bulked fruits and vegetables it collects from smallholders. About 10% of the collected produce cannot go to large-scale retail vendors and is instead sold through this secondary system, ensuring that a maximum amount of profits get back into the hands of the farmers. Sunhara India has created a similar project-market in response to the traditional marketplace, where women often face discrimination. It has started an all-women farmers' market, consisting of twelve shops owned by women, which buy and then resell the produce of the women's groups. By empowering women in local markets through the physical creation of storefronts, both projects raise women's profile in the communities while simultaneously increasing participants' incomes.

### *CASE STUDY: SUNHARA WAL-MART*

Sunhara Wal-Mart, a two-year program funded by the Wal-Mart Foundation and implemented by Agribusiness Systems International, works in two districts in Uttar Pradesh. The project takes a market-based approach to empowering impoverished smallholders, linking producer groups to large buyers such as Bharti Wal-Mart and Big Bazaar. In Ghaziabad, Sunhara works with women farmer organizations that produce vegetables and milk. In Agra, Sunhara has increased the productivity of landless workers by giving them the technology to make incense sticks and linking them to ITC, the India Tobacco Company.

Given the short timeline of the project, Sunhara started its three intervention strategies simultaneously. The three strategies include 1) forming collective infrastructure from the village

up, 2) starting savings and credit practices within the groups, and 3) sensitizing the community on the importance of empowering women as economic actors.

In Ghaziabad, there are now 67 small groups of women across 8 villages. The groups make loans to their members – deciding on their own whether to charge interest – and can be linked to banks for higher value group loans. The group is also the forum for receiving extension services, including cooperative advice and technological training. The groups join together to form a federation. With two collection centers within reasonable distance from all groups, the federation collects the products from the women farmers and negotiates deals with the large-scale buyers. For example, the federation has a contract with a company for 500-600 liters of milk daily. Such a system eliminates the middlemen and ensures women a better price. To date, the federation has sold 515 metric tons of vegetables and dairy and made more than US\$40,000. It has also started diversify its business, setting up pushcart and corner shop systems to sell the ten percent of goods that do not go to retail vendors. The federation tries to put the profits from both these businesses back into the hands of the women.

The Sunhara Wal-Mart has also focused on social empowerment programs. It has sponsored gynecological check-up camps, literacy camps, and social security coverage for 300 women. In the literacy camps, women are taught about their rights and how to be a successful businessperson, covering everything from how markets work to how to talk to buyers. Now, the project is focusing on governance and leadership issues, with the goal of creating self-sustainability by the end of the grant period. Sunhara has also run community sensitization programs, especially targeting men.

As of May 2012, the Sunhara Wal-Mart project has achieved its goal of increasing income for 1,500 women, with women in the program making at least \$4 per day. It has also created social change, creating the title of “woman farmer” in the region, a concept that did not exist before despite women doing the majority of farm work. Now, women are not only farmers, but owners and sellers as well. The women have accomplished this by strengthened collective action and better bargaining power. They have been empowered on both professional and social levels, with many women reporting increased decision-making in the household. The project was successful because it integrated the women both horizontally, in women’s groups, and vertically, in federations, linking them to the market. There was also a convergence with other stakeholders, including banks, government departments, and other private investors that supported the success of the project.

#### *FACTORS OF MARKET ACCESS*

The Sunhara Wal-Mart project highlights many of the effective marketing methods described above: the use of farmers’ groups to bulk products, the high-impact potential of linking producer groups with large companies, in this case domestically, and the importance of creating local

marketing opportunities for farmers as well. The project also points to a rise in engaging private sector partners, which is important in establishing sustainable market access. Finally, extension services include trainings on agronomy, processing, sanitation, and quality control as well as marketing. The main goal of market access projects is to create smallholder farmers that can be competitive in whatever market they choose to enter. To achieve this goal, a project must not just broker deals but also create savvy, empowered women farmers.

## **INTEGRATED APPROACHES**

Most of the projects we have discussed so far have been multi-faceted and dynamic, which is an advantage when working in rural communities. The trend of increasingly integrated projects is important. An equally important trend is that of projects seeking to have multiple impacts from one intervention. The factors driving this shift to integration are two fold. First, women often have more to gain from these integrated approaches, which incorporate life skills such as nutrition education, literacy training, financial education, and social empowerment. Second, integrated projects tend to be more efficient, either using the same extension system and support network to deliver multiple trainings and inputs or affecting several aspects of community life through a single intervention. Both methods can have multiplying effects, making the outcomes of projects more far-reaching or sustainable.

For example, Vi Agroforestry began as a tree-planting project in 1983. During its first twenty years of operation, Vi Agroforestry solely focused on growing, selling, and caring for tree seedlings, and built up an entire network of field officers and logistical support to serve this one purpose. However, in recent years Vi Agroforestry has changed its vision as an organization, broadening its work to include a sustainable livelihood approach that extends beyond agroforestry techniques. The organization now uses its extensive networks and field officers to provide extension services in sustainable agriculture practices, farm enterprise development, and financial services in the form of village savings and loan groups. Through these services, farmers are encouraged to move beyond subsistence farming to access larger markets.

Shifts from inputs distribution to integrated approaches are common, as the Green Belt Movement case study below shows. The second case study of the Millennium Mills of Mozambique highlights the potential of investing in a crucial technology. Both trends are important in creating a better environment in which women farmers can thrive both socially and economically.

### *CASE STUDY 1: GREEN BELT MOVEMENT*

The Green Belt Movement (GBM) was founded in 1977 by Wangari Maathai, who saw trees as a solution to community problems related to fuel, wood, water, soil conservation and malnutrition. Maathai targeted women because they understood the importance of trees in providing firewood

and in combating soil erosion. GBM focuses on community development as a set of integrated issues, including environmental issues such as water quality, air quality and soil erosion, and social issues such as gender equity and economic empowerment. To date, GBM has reached more than 40,000 women throughout Kenya.

The entry point of the Green Belt Movement is planting trees. Women are encouraged to plant trees on their farms, on public lands including churches and markets, along rivers, and in gazette forests. Women grow seedlings in nurseries, with GBM providing simple tools such as potting bags. The women are paid five Kenyan shillings per successful seedling as a token of appreciation for their work, and then receive GBM assistance in moving the seedlings to the planting locations, especially if those locations are in the forest. GBM also brings in volunteers to recruit and train groups and to look after the trees, weeding, replacing ones that die, enriching the area with diverse species, and protecting the trees from animal grazing in the forest. The trees planted, especially on farm, are multi-purpose—providing fodder, fruits, soil conservation benefits, and microclimate regulation.

Recently, GBM restructured its strategic thinking to focus on watersheds as distinct landscapes for action. Seeing a need to reestablish streams and create cleaner rivers, GBM's watershed-based work starts within the water catchment areas, improving tree cover around springs and steep slopes, so that water infiltrates and percolates into the underground aquifers and reducing flooding. The program also sponsors water-harvesting projects, trains women on how to trap and store rainwater runoff, and helps women use gray water from the kitchen and bathroom. This water allows for the propagation of seedling and the production of home gardens in low rainfall areas. The program is part of a larger organic farming program initiative that stresses the use of indigenous seeds, the conversion of flowerbeds to vegetable gardens, and the importance of diverse plantings. In addition to eating the food they grow, women often sell the vegetables, sometimes saving them until the dry season. However, GBM encourages home consumption of the produce, asking women to track how much they spend when they buy vegetables, proving the cost effectiveness of growing them at home. The income from growing tree saplings is often used to initiate new activities, such as raising goats and keeping bees.

The Green Belt movement also emphasizes the importance of local knowledge and of knowledge sharing. As much as possible, project and extension officers are chosen from the community, and the program also relies on community volunteers, also known as Green volunteers, to serve as trainers and organizers, keeping the energy and knowledge of the community going without a large, cumbersome organizational structure. GBM sets up exchange visits between communities, taking advantage of each community's specialty. Women within communities also share information on topics such as water conservation, community leadership, natural resource management, and business enterprise development.

Finally, GBM advocates empowering women and their children by encouraging women to take initiative within the community and supporting them in new endeavors. Since women are their main targets, the program has to at times convince local leaders to allow women to meet with visitors and work outside the home. Once a project is started, the women are in charge of defending their access to public land in order to plant trees, a process that often brings them into contact with local leaders and builds up their confidence as leaders themselves. In addition, GBM has worked with schools in the region to identify bright children of women participants and award them scholarships for secondary school. They are also operating a model school that teaches students to manage a tree nursery, using the profits of the nursery to fund school fees.

By making the program participatory, GBM has become a pro-democracy, pro-development, and pro-environment force in Kenya. In the past, GBM has worked with farm level and group level networks, but new work to link the destruction of forests to the destruction of livelihoods have driven the program to foster even larger networks of community members to create sustainable change.

The Greenbelt Movement measures its success first and foremost in income and environmental impact. A recent evaluation revealed that a group of 240 women that has been working with GBM for 20 years now own trees and land that are worth 200 million shillings (about USD2.4 million). The trees serve as assets in loan agreements and other financial services. In addition to the monetary empowerment, such value also gives women confidence and political empowerment. GBM has seen a transformation in gender relations, including an increase in female leadership and females in active politics, decreased domestic violence, and an increase in women's decision-making abilities within the home. The organization's leaders claim that the trees planted have buffered participating communities from the impacts of poor air quality, deteriorating water systems, and climate change-induced temperature extremes. By planting trees, the Green Belt Movement has constructed a model of how to increase income, empower women, and improve the environment simultaneously. The integration of the project allows it to achieve success, both in volume planted and livelihoods improved.

#### *CASE STUDY 2: MILLENNIUM MILLS OF MOZAMBIQUE*

Building on TechnoServe's commitment to business solutions to poverty, the Millennium Mills of Mozambique (MMM) project, already registered as a for-profit company, is taking on income generation, female empowerment, and nutritional improvement, all through a franchised business model. The goal of the project is to establish a network of maize mills in Mozambique and beyond that provides women with income, creates meeting & training centers for women in rural areas, and develops intuitive techniques for the acceptance of nutritional fortification to improve the diets of rural communities.

After three years of local studies, the project is now in the pilot and testing phases, looking for new technologies that improve upon current maize processing systems and nutritional norms. MMM's approach targets xima, the maize flour-based porridge that is the staple food in rural Mozambique. White xima, or maize that has been processed without the husk, is valued in the region for its lightness and purity. However, since the husk holds most of the nutrients, white xima is nutritionally deficient, and therefore the diet of many is lacking in nutrients. In addition, hand grinding maize or getting maize to the nearest maize mill is often difficult, time-consuming, and stressful, and then, the mills break down frequently. MMM hopes to improve the maize processing experience while increasing income for women and improving rural nutrition.

The maize mills project works in the same areas as TechnoServe's agroforestry project, a large program that integrates many other interventions. Part of MMM's goal is to free up rural women's time spent processing maize so that they can use the time to participate in the agroforestry program. The mills have become more important than just a processing center, however, now serving as "hubs" for women in the village and potential sites for distribution of other information and inputs. In Mozambique, women do not have the same opportunities as men, though they are the ones that provide food for the home and that are connected into the larger community. TechnoServe believes that by targeting women and empowering them economically, as well as providing other services through information exchanges at the mills, MMM can have a sustainable impact on the rest of the community.

The ultimate goal of the project is to incorporate Millennium Mills of Mozambique as a separate, sustainable for-profit business, within three years. The model includes a franchising package for women who want to open their own mills, giving women the support and legitimacy they need to succeed. The model emphasizes local production and independence for the women. MMM will provide the mill machinery and repair support, which will be paid back by the women over time, as well as a trusted brand name. Women are selected based on their previous success or their capacity to learn, and they receive training in business practices at the mills. While the women are the mill managers, they often employ 3-4 more people to help run the mill.

While the franchise model is innovative in itself, TechnoServe is improving on typical maize mills and introducing new types of flour products that will improve rural nutrition. As described above, xima often lacks nutrients because people do not like to grind the husk with the maize. Previous attempts introduce the husks or synthetically made fortification powders into maize flour have floundered because it is not easy to change local habits. TechnoServe is solving this problem by making it a choice and making it fun, while also addressing another crucial agricultural issue: the preservation of vegetables for the low season. Due to the large amount of available land in Mozambique, farmers could potentially grow lots of fruits and vegetables in the high season. However, because there is no market for surplus vegetables and because farmers often lack the proper processes for safely preserving them, much of the land goes untilled.

TechnoServe plans to buy the excess vegetables, dry them, and then mill them like maize, combining them with maize flour. This results in colorful, tasteful new flours that have more nutrients and can be vehicles for more nutrition fortification powders. It is hoped that giving people the consumer experience of choosing from an array of colorful flours will create excitement for and interest in consuming these higher-nutrient foods. When the women start bringing home such flours, TechnoServe expects that the mills will slowly change the dietary habits of the region and change the perception that imported food is better than local food.

TechnoServe is currently testing different types of products to provide through the mills. Current products include vegetable flours to mix in with white maize flour to be sold at mills or pre-mixed flours to be sold in stores. In December, TechnoServe plans to open a food security innovation lab outside Nampula that will invite rural women to brainstorm and develop new technologies. The program would put women in touch with other maize-producing women throughout the world, with the goal of knowledge sharing. While ambitious, the strategy will both produce interesting, marketable new products and will empower the women, boosting their self-esteem.

While the project is still in its pilot and testing phases, output per mill is increasing, as is the number of customers per mill. TechnoServe-supported mills have grown, on average, from 100 clients to 600 clients. Assuming each client represents one family, TechnoServe's five mills are currently serving 3,000 families, with hopes to expand in the next two years to reach 15,000 families. Additionally, maize meal offers a high profit margin to mill owners and is a gateway for vertical integration into larger-scale trading and storage schemes, allowing millers to hedge against agricultural risks and to use the seasonality of maize production to their advantage.

The Millennium Mills of Mozambique program has integrated a sustainable business model, local production, and appealing nutritious options to create a project that targets some of the most pressing issues in rural Mozambique, including women's lack of opportunity, nutrient deficiency, and rural poverty. In addition, the project realizes the importance of having a safe, social hub for women to create a network of discussion on important issues such as education, nutrition, and business. The project has the potential to be both scalable and replicable because other African countries have staple foods similar to xima.

#### *THE RISING ROLE OF INTEGRATED APPROACHES*

Integrated approaches take many forms, but have the common characteristic of attempting to create comprehensive change in agricultural communities. Given the diverse roles that women play in communities and families, as well as the multiple and overlapping forms of disempowerment they face, integrated projects tend to especially benefit women. The prevalence of integrated interventions in the projects we interviewed points to a growing trend in the field that looks at women not as isolated actors but as economic, social, and political beings that are

inherently shaped by and connected to the communities, markets, and families with which they interact.

## **ADAPTATION TO CLIMATE CHANGE**

The impacts of climate change compound the challenges women agriculturalists face in the developing world. Agricultural sectors are already in precarious positions due to their dependence on natural resources and climatic conditions. These issues are exacerbated for women smallholders, who are restricted in their adaptive capabilities for a number of reasons ranging from limited control over productive resources to a lack of rights and freedoms. Given women's primary caretaker role in the family, women's high vulnerability to climate change has far-reaching repercussions for entire families and communities. As a result, the focus of development interventions on rural women's adaptation to climate change continues to grow.

A number of the projects interviewed framed their interventions around issues of climate change.<sup>31</sup> While these projects were framed slightly differently than others, using a climate change rubric, they often used the same intervention strategies as the other economic empowerment projects discussed in this paper. Such strategies include the use of farmers' groups, a focus on integrated projects that include trainings in subjects such as business and nutrition, encouraged participation in savings and loans programs, and an emphasis on building women's leadership. Most projects also relied on input distribution as the basis of the intervention, with inputs tailored to adaptive strategies that work well for women. For example, ducks, instead of chickens, were distributed in flood-prone areas, small greenhouses in regions experiencing more extreme cold, and tree seedlings in regions with soil erosion problems.

Ultimately, projects found that certain inputs can cheaply and simply facilitate women's climate change adaptation. The field leaves room for much research and innovation on what other types of inputs can work. Nevertheless, the lessons we have drawn from economic empowerment projects apply to climate change adaptation projects as well. Moreover, climate change adaptation will become increasingly important in economic empowerment projects in the agriculture sector.

## **CREATING ENABLING ENVIRONMENTS**

### **WOMEN'S FORMAL EMPLOYMENT**

The importance of making projects accessible to women extends beyond the convenient training times and childcare provision described above in the extension section. Making a project accessible to women, as well as creating sustainable changes in a project's gender strategy, requires the employment of women, especially in positions that come into contact with beneficiaries, such as extension officers. Women are often kept from trainer positions because methods for testing and selecting potential trainers are biased towards candidates with higher

education levels and experience in leadership, two traits usually reserved for males in rural areas of developing countries. However, by changing trainer selection processes and providing female trainers with the support systems needed to balance the job with childcare, organizations can cultivate successful and loyal trainers while sending a message to their target communities about the importance of female leadership.

Several organizations we spoke to recognized the importance of having female project staff. However, in some regions finding qualified women can be difficult. Female staff recruitment is a major problem for Save the Children's Nobo Jibon project in Bangladesh, with regional constraints on women playing a large role in the limiting of qualified female candidates.<sup>32</sup> More often than not, this is true. However, there are ways to overcome these limitations. It can be done in small ways, by hiring the female candidate when two equally qualified candidates are competing for a job, as the FondeAgro project did in Nicaragua.<sup>33</sup> Other projects, such as TechnoServe's Coffee Initiative in East Africa, have taken on the problem more systematically. The following case study explores how the Coffee Initiative actively changed its human resource policies to encourage the hiring of women. The Initiative changed its hiring qualifications from education-based requirements to a more potential-based selection process that put men and women on equal footing.

#### *CASE STUDY: FEMALE EXTENSION OFFICERS AT TECHNO SERVE'S COFFEE INITIATIVE*

TechnoServe's Coffee Initiative has worked with small-scale coffee farmers in Ethiopia, Kenya, Rwanda, and Tanzania for the past four and a half years, enacting business solutions to poverty. There are three aspects to the Initiative's approach: 1) agronomy, or the provision of extension services based on the FAO farm college system, 2) building the capacity of wet mills, or coffee washing stations that serve as the physical base for producer groups in the region, and 3) coffee sector reform, which focuses on making sure policies, guidelines, and the overall market system are efficient for smallholders. The Initiative has been most successful in its first goal, mainly due to its use of female extension agents and insistent recruitment of female participants. The project's gender strategies serve as a model for others looking to increase female staff numbers.

The Coffee Initiative's gender strategies in agronomy stemmed from a handed-down target of hiring 30% women for its staff. With this goal in mind, the Initiative tailored its hiring process to even the playing field between men and women. It kept the education and experience requirements relatively low, and asked town leadership to assist in the recruitment of women applicants. Instead of using an interview process, often disadvantageous to women, the Initiative instead chose an experiential vetting method, training candidates for five days on best practices in agronomy and for three days on training skills, at the end testing their ability to be a good trainer and selecting candidates based on performance.

Tailoring the program to suit women trainers did not stop with the hiring process. Given women's household and childcare responsibilities, the Coffee Initiative has had to change the way it delivers training to both trainers and farmers. When required to travel to project headquarters for training, women agents receive money to pay for the transportation of their children and a caretaker. The in-field, hands-on trainings also accommodate women's schedules and childcare needs, and enable breastfeeding. Due to such policies, there is virtually no attrition among women trainers, with women only leaving to pursue further formal education.

Through its female extension agents and an aggressive female recruitment strategy, female participation has risen to an average of 37% across the multi-country project. Farmers' yields have increased 40% after the first two-year training cycle, well over the 12% goal. The prevalence of women trainers in the Coffee Initiative has empowered young women by making them productive experts in the community, and in doing so has started to break down traditional gender roles and change social perceptions of women.

### **WOMEN'S INFORMAL LEADERSHIP**

Women's leadership in non-employment settings can be more important, and perhaps more feasible, than formal employment of women. Female leadership in farmers' groups, in village-level governance structures, as "lead" farmers in extension models, and within families is necessary for gender and agricultural development benefits to occur, including economic empowerment. Some of the projects we interviewed focused specifically on increasing women's leadership abilities, while others included it as part of a larger integrated approach. In all cases, the inclusion of female leaders strengthened the project in the short-term and empowered women in the long-term.

Women's leadership can come in many forms, but in the projects interviewed generally fell into one of two categories: leadership for policy advocacy and leadership in farmers' groups. In the former, women are taught the skills to take on political systems and influence decision-making processes at all levels of government. Projects such as Fahamu's *We are the Solutions* campaign and ActionAid's WOLAR project focused heavily on this type of women's leadership. Doing so allowed women to inject their own priorities and preferences into local and national political discussions about agricultural development policies and interventions. Ultimately, such leadership creates more positive environments for women farmers, enabling them to become economically successful.

Women's leadership within farmers groups can take various forms. Many projects, such as ACDI/VOCA's Cooperative Development Program (CAP) in Paraguay and Send a Cow Uganda focus on increasing female leadership in cooperatives. Send a Cow even insists that the chairperson, vice chairperson, and treasurer of each group be a woman. Without strong female leadership in cooperatives, women smallholders will not benefit fully from the economic

empowerment opportunities, such as accessing international markets, associated with cooperative participation. Women farmers are easier to reach when other women are in leadership roles at the group level.

WOCAN, implementers of the IFAD-funded Rural Women's Leadership Project, combines advocacy with cooperative leadership by putting women in leadership roles within national and sub-national agricultural producer groups, as well as in district-level organizations. The presence of women leaders in all levels of the groups enables women to benefit from the various funds and programs specifically earmarked for rural women's development.

Finally, other projects build on the rationale of employing female extension officers and use women volunteers as "lead" farmers that train other women. For Helvetas's Sustainable Soil Management Program (SSMP) in Nepal, increasing the number of women lead farmers is a major goal of the program. With women dominating the farming system in which SSMP operates, having women model farmers willing and able to train other women farmers is not only gender-responsive but also a smart strategy to achieve project goals related to environmental protection and strengthening of livelihoods.

## **POLICIES AND INSTITUTIONS**

The importance of the policy and institutional landscape in which an intervention operates was a common theme in the data we collected. Policies and institutions can have both positive and negative effects on project implementation. Policy, including specific national laws that relate to female ownership rights and general national sentiments towards female empowerment, can affect the extent to which targeted communities participate in project activities. While many projects cited negative policy environments, Kenya's recent law mandating at least 30% female participation in farmer groups is helping Vi Agroforestry rework its gender policy in project areas. National land tenure laws for women can greatly affect project success, as discussed above. Both WOCAN's Rural Women's Leadership Program and the Gender Equity and Social Inclusion component of Helvetas's Sustainable Soil Management Program have been supported, organizational representatives stated, by the existence of a gender equality policy in Nepal. While implementation of this national level policy is often considered to be insufficient, its existence is regarded, by interviewees, as supportive of the projects.

However, in addition to general policy regimes, politics and government institutions can influence interventions more directly. Several projects worked directly with government agencies to implement projects. Both Sunhara Walmart and Nobo Jibon worked with local government departments to enact certain aspects of their project. For example, Nobo Jibon used the sites of national immunization campaigns to recruit project participants. FondeAgro worked directly with the Nicaraguan Ministry of Agriculture to implement its extension-based project. After the project's end, the Ministry of Agriculture has implemented a large-scale project based

on the techniques it carried out with FondeAgro. Involving government agencies in project implementation can ensure project sustainability after project completion.

However, government inclusion can also hinder project implementation. The bureaucracy of payments and budgets can hinder government sponsored participatory research.<sup>34</sup> Governments can also have unrealistic expectations of projects, feeding expectations that interventions will stretch beyond the defined target area or audience. For example, local governments in areas served by STRYDE pressure the organization to reach everyone, regardless of age and project resources. On a much more ideological level, some governments, such as the government in Uttar Pradesh where Sunhara India works, have negative views and policies towards women, especially women farmers. Such an environment can be a significant hurdle for women's empowerment projects.

Finally, politics can affect projects more than policies. Two Kenyan projects, the Kenyan Maize Development Project and the Green Belt Movement, complained of politicians interfering in their projects, using maize, fertilizer access, and crop prices as campaign tools. Problems increase during periods of political instability and during election periods, to the extent that farmers' groups can be dissolved or kept from working with projects. Political and legal environments can make or break a project, but prescriptions for dealing with such are hard since they differ by local context.

## **CONCLUSION**

Efforts to empower women in agriculture are moving in some exciting and potentially important directions. While rigorous impact evaluations will eventually be able to demonstrate the impacts of interventions on poverty reduction and economic empowerment, the current interventions targeting women are promising.

While early approaches to agricultural interventions targeted the family farm, the assumptions were typically that the male head of household was the farmer, with women playing a subsidiary role at best. The realization that women were important in agriculture led to projects that targeted only women, ignoring men. Simply targeting women led to backlash from men and to women often losing access to land and other resources as agriculture became profitable.

The latest shift refocuses on households, with a new emphasis on seeing women as key farmers within households and communities. Targeting women within the context of the household and community involves realizing that both men and women must be engaged in projects to empower women. In this way, projects are better able to strengthen women's position within the family and community. Thus, projects may continue to successfully target women, but not in isolation.

The second key lesson from current successful projects to empower women in agriculture is that they use an integrated approach, dealing with the various constraints faced by women farmers.

Not only is it critical for women farmers to increase their production, but also they must learn to successfully market their products. The specific interventions will vary depending on the context, including considerations such as women's rights to land and other resources, social norms about women's involvement in markets, and local and regional market structures. The majority of successful interventions target both the production and marketing. Ensuring women's access to the necessary inputs for increased production may involve the project helping to create an input supply chain and finding ways for the women to finance the purchase of inputs. Creating channels for women to sell their produce, whether through negotiating with wholesalers or creating new demand, may be necessary. Training women to negotiate successfully in the marketplace to obtain lower prices for inputs and higher prices for agricultural products may transfer to women becoming more empowered in other areas of their lives.

Although some of the specific lessons are drawn from smaller, pilot projects, other projects have been scaled up to reach large numbers of women farmers. The potential certainly exists to reach large numbers of women farmers and substantially increase their incomes with the additional impact of empowering these farmers to make positive changes in their communities.

## APPENDIX 1

	<b>Organization</b>	<b>Project Name</b>	<b>Location</b>
1	Agribusiness Systems International	Sunhara Wal-Mart Project	Uttar Pradesh, India
2	Agribusiness Systems International	Sunhara Project	Uttar Pradesh, India
3	ACDI/VOCA	Kenya Maize Development Program	Kenya
4	ACDI/VOCA	Cooperative Development Program	Paraguay
5	ActionAid	WOLAR	Southern Africa
6	Clinton Giustra Sustainable Growth Initiative	TANÁ	Colombia
7	One Acre Fund	N/A	Eastern Africa
8	BRAC Uganda	Agricultural Program	Uganda
9	Vanastree	N/A	India
10	Fahamu	We are the Solutions	West Africa
11	Helen Keller International	Action Against Malnutrition through Agriculture	Nepal
12	Gardens for Health	N/A	Rwanda
13	WOCAN	Rural Women's Leadership Programme	Nepal
14	CARE India	Join My Village	India
15	TechnoServe	East Africa Coffee Initiative	Eastern Africa
16	CARE Tajikistan	Adaptation to Climate Change in Tajikistan	Tajikistan
17	Helvetas (Nepal)	Gender Equity & Social Inclusion component of Sustainable Soil Management Program	Nepal
18	TechnoServe	Shea Nut Processor Project	Ghana
19	USAID	Value Girls	Kenya
20	SIDA	FondeAgro	South America
21	Send a Cow Uganda	N/A	Uganda
22	UCOBAC	Paralegals Program	Uganda
23	Technoserve	STRYDE	East Africa
24	USAID	Green Belt Movement	Kenya
25	Technoserve/ Millennium Challenge Account	Dairy Program	Nicaragua
26	IOCC	Food Security Project	Gaza
27	Save the Children	Nobo Jibon Project	Bangladesh
28	CARE	Shouardo – focus on duck rearing project	Bangladesh
29	Prolinnova	Gender and Participatory Innovation Development	South Africa
30	Mzuzu Irrigation Services	Irrigation technology	Malawi
31	National Biotechnology Development Agency	Processing technology and value-added products	Nigeria
32	AWARD- Margaret Syomiti	How to make livestock rearing more accessible to women via new feed systems	Kenya
33	AWARD- Atsede Solomon	Farmer field schools and improved seed technology	Ethiopia
34	TechnoServe	Maize Mills Project	Mozambique

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<sup>1</sup> FAO, State of Food and Agriculture, 2011.

<sup>2</sup> Contact with these organizations ranged from email exchanges to a series of longer, in-person interviews with gender leaders at development organizations, as described in the “Larger Organizational Trends” section.

<sup>3</sup> The five organizations include ACDI/VOCA, ActionAid, the United Kingdom’s Department for International Development, the International Center for Research on Women (ICRW), and Oxfam.

<sup>4</sup> A measure developed through a partnership between the U.S. Government’s Feed the Future Initiative, the [United States Agency for International Development](#) (USAID), the [International Food Policy Research Institute](#) (IFPRI), and the [Oxford Poverty and Human Development Initiative](#) (OPHI) of Oxford University that attempts to directly capture women’s empowerment and inclusion levels in the agricultural sector.

<sup>5</sup> CARE Pathways Bangladesh. “Stimulating Agricultural Management and Marketing Opportunities for Women (Sammow) Project Proposal.” Implemented in Nilphamari, Kurigram and Rangpur districts in northwest Bangladesh 2011-2016.; CARE Pathways Ghana. “Equal Opportunity for All (EQUAL) Project Proposal.” Implemented in Ghana’s Northern Savannah Zone, 2011-2016.

<sup>6</sup> John Logan of STRYDE detailed problems of the generational gap and a lack of youth in agriculture during our project interview.

<sup>7</sup> Ruchi Tripathi et al. “What works for women: Proven approaches for empowering women smallholders and achieving food security.” London: Oxfam GB, March 2012.

<sup>8</sup> “Gender in Agriculture Sourcebook.” Washington, DC: The World Bank, 2009.

<sup>9</sup> Agnes R. Quisumbing and Lauren Pandolfelli. “Promising Approaches to Address the Needs of Poor Female Farmers Resources, Constraints, and Interventions.” IFPRI Discussion Paper 00882, July 2009.

<sup>10</sup> C. Mark Blackden and Quentin Wodon, eds. “Gender, Time Use, and Poverty in Sub-Saharan Africa.” Washington, DC: The World Bank, 2006.

<sup>11</sup> “The State of Food and Agriculture: Women in Agriculture, Closing the gender gap for development.” Rome: Food and Agriculture Organization, 2011.

<sup>12</sup> CIP-related projects we interviewed include SASHA and Atsede Solomon’s research.

<sup>13</sup> We spoke with researcher Atsede Solomon, who works with the Ethiopian Institute for Agricultural Research (EIAR).

<sup>14</sup> “Market-oriented beekeeping for Women’s Economic Leadership in Ethiopia - honey value chain in Amhara region.” at <http://growselfthrive.org/page/honey-ethiopia> and Gizachew Sisay. “Women Economic Leadership in the Honey Value Chain; promoted by Oxfam GB in Ethiopia.”

<sup>15</sup> The Enabling Rural Innovation (ERI) approach emphasizes the importance of a Resource-to-Consumption conceptual framework, in which processing is an important step. For more information, see Susan Kaaria et al, “Assessment of the Enabling Rural Innovation (ERI) approach: Case studies from Malawi and Uganda.” *Natural Resources Forum* 32 (2008) 53–63.

<sup>16</sup> Agnes R. Quisumbing and Lauren Pandolfelli. “Promising Approaches to Address the Needs of Poor Female Farmers Resources, Constraints, and Interventions.” IFPRI Discussion Paper 00882, July 2009.

<sup>17</sup> Interview with Atsede Solomon, AWARD Fellow and Horticulturalist in Ethiopia

<sup>18</sup> Interview with Julio Montealegre, TechnoServe Nicaragua; this corresponds to data that women make up about only 20% of agricultural labor force in Latin America, compared to upwards of 50 percent in parts of Africa and Asia (FAO 2011).

<sup>19</sup> Data from TechnoServe’s East African Coffee Initiative, gathered from interview with Amanda Satterly

<sup>20</sup> “What Women Farmers Need: A blueprint for action.” ActionAid International, February 2011.

<sup>21</sup> Several papers and studies cited above have emphasized the importance of access to credit and savings, including Tripathi et al 2012, ActionAid International 2011, and Quisumbing and Pandolfelli 2009.

<sup>22</sup> Tensions between men and women over loans have been a problem for Vi Agroforestry beneficiaries in the past.

<sup>23</sup> “Where We Work : Uganda : Microfinance.” BRAC, 2011. <http://www.brac.net/content/where-we-work-uganda-microfinance#.UEC6XGgwAqk>.

<sup>24</sup> “Gender in Agriculture Sourcebook.” Washington, DC: The World Bank, 2009.

<sup>25</sup> Interview with Frances Birungi, UCOBAC.

<sup>26</sup> See, for example, Cheryl Doss, Designing Agricultural Technology for African Women Farmers: Lessons from 25 Years of Experience. *World Development* 29(12): 2075-2092. December 2001.

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<sup>27</sup> Regenerated Freirean Literacy through Empowering Community Technique (REFLECT) is an innovative, group-based self-reflection process in which groups discuss the community's problems or opportunities with the goal better understanding the problems and their solutions.

<sup>28</sup> Interview with Krista Jacobs from the International Center for Research on Women

<sup>29</sup> Agnes R. Quisumbing and Lauren Pandolfelli. "Promising Approaches to Address the Needs of Poor Female Farmers Resources, Constraints, and Interventions." IFPRI Discussion Paper 00882, July 2009.

<sup>30</sup> Ruchi Tripathi et al. "What works for women: Proven approaches for empowering women smallholders and achieving food security." London: Oxfam GB, March 2012.

<sup>31</sup> The projects are: ViAgroforestry's sustainable agriculture and small enterprise development program; the Green Belt Movement's tree-planting program; CARE Bangladesh's duck-rearing project; CARE Tajikistan's Adaptation to Climate Change project; and Women Organizing for Change in Agriculture and Natural Resource Management's (WOCAN) Rural Women's Leadership Program.

<sup>32</sup> Interview with John Meyer, Chief of Party of the Nobo Jibon project.

<sup>33</sup> Interview with Melinda Fones Sundell, former Executive Director of SIDA's FondeAgro Project.

<sup>34</sup> Based on interview with Atsede Solomon, who carries out participatory research in Ethiopia.