

GAAP

Gender, Agriculture, & Assets Project
Led by IFPRI & ILRI



Reducing the Gender Asset Gap through Agricultural Development

A TECHNICAL RESOURCE GUIDE

PARTNERS



ACKNOWLEDGMENTS	2
ACRONYMS	3
<u>SECTION ONE</u>	
INTRODUCTION	4
Objectives of this Technical Resource Guide.....	4
Who should use the Technical Resource Guide.....	4
How to use the Guide	4
<u>SECTION TWO</u>	
GENDER, ASSETS, AND AGRICULTURAL DEVELOPMENT	5
Why gender is important in agricultural development projects	5
Why assets are important	7
Common concerns.....	9
Our intervention is not specifically about addressing gender inequalities	9
Our intervention is not specifically about assets.....	9
Is it sufficient to just target women and women’s assets?	9
This will make the project more expensive.....	9
This is too difficult.....	9
About the Gender, Agriculture, and Assets Project (GAAP).....	9
<u>SECTION THREE</u>	
GENDER AND ASSETS: WHAT DOES THE RESEARCH TELL US?	10
Addressing gender issues in diagnosis and planning.....	10
Addressing gender issues in design.....	18
Addressing gender issues in implementation, monitoring, and mid-course adjustments	24
Addressing gender issues in project evaluation.....	27
A mixed methods approach for working on gender and assets.....	29
Quantitative methods	29
Qualitative methods.....	30
Tools for data collection in the diagnosis and design phases.....	30
Final note on process	31
GLOSSARY	32
REFERENCES	33
LIST OF ADDITIONAL RESOURCES ON GENDER AND AGRICULTURE	36

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Finally, we expect that this guide will be a living document and encourage you to send comments and suggestions for changes and clarifications.

ACRONYMS

BMGF	Bill & Melinda Gates Foundation
BRAC	Bangladesh Rural Advancement Committee
CFPR-TUP	Challenging the Frontiers of Poverty Reduction-Targeting the Ultra Poor
CSISA	Cereal Systems Initiative for South Asia
E-HFP	Enhanced Homestead Food Production
FAO	Food and Agriculture Organization of the United Nations
GAAP	Gender, Agriculture, and Assets Project
HBV	Hybrid Variety
HKI	Helen Keller International
IFPRI	International Food Policy Research Institute
ILRI	International Livestock Research Institute
IRRI	International Rice Research Institute
LHW	Livestock Health Workers
LOL	Land O'Lakes
M&E	Monitoring and Evaluation
MSDDP	Manica Smallholder Dairy Development Program
OSP	Orange sweet potato
OWL	Older women leaders
PIM	CGIAR Research Program on Policies, Institutions, and Markets
REU	Reaching end users
SAS	Statistical Analysis System
SDVCP	Strengthening the Dairy Value Chain Project
SPSS	Statistical Package for the Social Sciences
UCO	Use, control, and ownership
USAID	United States Agency for International Development

1 INTRODUCTION

Assets are fundamental to small farmers' livelihoods. Learning how assets help small farmers expand production and successfully engage with agricultural value chains in the developing world is of increasing interest to researchers, development practitioners, and private sector firms alike. We now know that households and individuals hold and invest in different types of assets and that the ability to accumulate and maintain assets helps to manage risk and overcome shocks.

As important as assets are to all farmers, many research studies have documented that assets are usually distributed unequally between men and women, even within the same household. This difference has come to be known as the "gender asset gap." Men and women typically own different types of assets, and women usually have fewer assets than men or own assets of less value (Doss, Grown and Deere 2008; Meinzen-Dick, Johnson, et al. 2011). However, more sophisticated understanding of the dynamics of asset accumulation and the gender dimensions of their use, control, and ownership (UCO) remains lacking. What are the differences in how men and women acquire, use, and dispose of important productive assets (tangible and intangible) such as land, labor, animals, buildings, natural resources, education, financial capital, and social networks? How do these patterns differ for different categories of assets and in different parts of the world? What do these differences mean for the design, implementation, and evaluation of agricultural development programs?

This guide explores the intersection of gender and assets in the context of agricultural interventions. It grows out of a collaborative effort among international agricultural research organizations, implementing partners, and monitoring and evaluation (M&E) partners who came together to evaluate the impact of agricultural interventions on the ability of men and

BOX 1 RECOGNIZING THE MULTIPLE DIMENSIONS OF ASSETS: USE, CONTROL, AND OWNERSHIP (UCO)

Throughout the guide we will use the acronym UCO to refer to the multiple dimensions of Use, Control, and Ownership of assets. Each of these terms refers to different components within larger "bundles of rights." Use rights involve the ability or permission to employ an asset; control rights signal greater levels of power, including management, exclusion, and alienation. Ownership is the state of independently having all these rights, including sale or other forms of disposal. In practice, however, the definitions are often not clear cut. The acronym will help to remind us that men and women can accrue benefits from assets even without having full ownership rights over them (see section on Diagnosis and Initial Planning, especially Table 2)

women to use, control, and own key productive assets. The project was implemented by researchers at the International Food Policy Research Institute (IFPRI) and the International Livestock Research Institute (ILRI) under the Gender, Agriculture, and Assets Project (GAAP) with primary support from the Bill & Melinda Gates Foundation (BMGF).

Objectives of this Technical Resource Guide

This guide presents the lessons learned from the GAAP activities. The guide seeks to achieve three main goals:

1. Increase the reader's knowledge about the importance of both gender and assets in the development process
2. Strengthen the design, implementation, monitoring, and evaluation of agricultural projects that reduce gender gaps in assets
3. Identify tools drawn from both quantitative and qualitative approaches to support sex-disaggregated data collection and gender analysis efforts on assets

Who should use the Technical Resource Guide

The guide will be of interest to many different kinds of readers working in agricultural research and development. Practitioners who have some experience working on issues related to gender or to assets can expect to understand why a combined focus on gender and assets is helpful for supporting agricultural development. The guide highlights key findings on gender and assets and interprets how they are relevant to the planning, design, implementation, and evaluation of agricultural development projects. Researchers can expect to learn not only about the key research findings that emerged from GAAP but also about the methods used. Others reading the guide may be seeking to integrate greater attention to gender and assets in their own studies or project responsibilities.

How to use the Guide

The guide is designed to allow readers to understand what they need to know about gender and assets, how to collect data about gender and assets, how to design and monitor projects to address gender gaps in assets, and how to evaluate the impact of agricultural projects. For this reason it is organized around the key components of the project cycle: diagnosis and planning, design, implementation and monitoring, and evaluation. At each stage of the cycle, research findings from GAAP illustrate the most important lessons for practitioners and researchers with recommendations highlighted in text boxes. The guide also discusses how both

SECTION/SUBSECTION TITLE	WHAT YOU'LL FIND
Gender, Assets, and Agricultural Development	This section introduces the role of assets in agricultural development. It explains the importance of understanding gender differences in use, control, and ownership of assets for agricultural programming.
Gender and Assets: What does the research tell us?	This section describes key research findings about gender and assets and how each relates to different stages of the project cycle.
Addressing gender issues in diagnosis and planning	This subsection outlines how to capture information about gender differences in asset use, control, and ownership.
Addressing gender issues in design	This subsection provides recommendations for how to design agricultural projects to address the gender asset gap. Building on the data collection efforts described in the previous section, this section describes how different types of asset interventions can have positive influences on men and women.
Addressing gender issues in implementation, monitoring, and mid-course adjustments	This subsection discusses key practices to improve implementation by using monitoring systems to inform mid-course adjustments.
Addressing gender issues in evaluation	This subsection gives a brief review of different types of evaluations. It then discusses key points to consider in conducting evaluations to ensure that impacts on men's and women's assets are accurately identified.
A mixed methods approach for working on gender and assets	This subsection briefly reviews when and how to draw from both qualitative and quantitative techniques for data collection, analysis, and evaluation to address different dimensions of asset ownership and use.

quantitative and qualitative approaches can be used for data collection, analysis, and evaluation. Additional research findings, tools, and project experiences—particularly related to impact evaluation methods and examples—can be accessed via the GAAP website at <http://gaap.ifpri.info/>.

Readers are strongly encouraged to become familiar with all chapters in the guide as each topic intersects with the others. Project design is improved when it analyzes relevant data to capture key issues. Good design articulates a causal pathway from objectives to indicators. Reading the guide in its entirety will clarify how each step of the project—from design to evaluation—needs to attend to gender differences.

2 GENDER, ASSETS, AND AGRICULTURAL DEVELOPMENT¹

This section introduces the role of assets in agricultural development. It explains the importance of understanding gender differences in access to and control and ownership of assets for agricultural programming.

As more research focuses on the relationship between gender, assets, and agriculture it is increasingly clear that agricultural development interventions have impacts on men's and women's stocks of agricultural assets and how those assets can be used to increase productivity and incomes and to reduce risks. This impact however is not gender neutral. That

is, agricultural development interventions can reinforce asset inequalities between men and women or they can be designed to increase women's assets and reduce gender inequalities. As we will describe throughout this guide, aiming for the latter requires an explicit focus on gender and assets.

Adopting a gender and asset focus aims to strengthen women's assets and identify the pathways for closing the gender gap in assets. These are mutually supportive goals. At the same time, we want to "do no harm," meaning that we want to avoid exacerbating inequalities in gender relations. In sum, we ultimately want agricultural development projects that can simultaneously accomplish three things:

1. Reduce the gender and asset gap
2. Strengthen women's assets
3. Do no harm

Why gender is important in agricultural development projects

Incorporating gender issues more widely and systematically in agricultural research, development, and extension systems will contribute significantly to meeting the food needs of the future population or ensuring that productivity translates into the improved welfare of the poor (Meinzen-Dick, Qisumbing, et al. 2011:1).

Millions of the women and girls living in rural communities in Africa south of the Sahara and South Asia are supported by agricultural livelihoods yet remain among the world's poorest

¹ In this guide, "agriculture" encompasses not only the cultivation of plant crops, but livestock, fishing, forestry, and natural resource management. It also includes the value chains associated with these subsectors in all activities from farm to fork.

people. Agriculture has historically been the engine of growth for developing economies, but even in good times with good weather and favorable prices for agricultural produce, smallholder agriculture practiced by small farmers is an uncertain profession, often requiring hard physical labor in a changing market and environmental context. In the years ahead, experts report that climate variability, environmental degradation, and rising populations will together place enormous pressure on small farms not only in these regions but also on the global production base more generally. Poverty further impedes the efforts of both women and men to grow, process, and market their crops or to find employment in the agricultural sector.

In most parts of the developing world, men and women play different economic roles and shoulder different productive responsibilities. The most recent estimates on women's contribution to agriculture confirm that they play an important role: "women comprise on average 43 percent of the agricultural labor force in developing countries, ranging from 20 percent in Latin America to 50 percent in Eastern Asia and Sub-Saharan Africa" (FAO 2011:5).

The FAO report cited above argues that reducing gender inequalities in access to productive resources and services could produce an increase in yields on women's farms of between 20 and 30 percent that could raise agricultural output in developing countries by 2.5-4 percent (FAO 2011).² But men's and women's opportunities to respond to economic signals are not the same, in large part because of how gender ideologies structure their initial asset endowments. Rural women, despite their hard work and creative endeavors, typically face additional barriers from gender discrimination in use, control, and ownership of key agricultural assets—especially land, labor, cash and credit, and education. They often battle restrictive attitudes and institutions that impede their full economic participation in their communities. They should

der more of the household responsibilities alongside their economic activities. And although the data remains ambiguous on the exact extent of the gender gap and although we know that the gap itself varies from country to country, we are nonetheless able to state with some certainty that women typically own less land than do men and that their agricultural plots tend to be smaller than men's (Doss et al. 2013). Reports from country after country find that women use fewer inputs than do men, have fewer meetings with extension agents, find it more difficult to access credit, and as a result their productivity is lower (Doss et al. 2011; Peterman et al. 2014; and Oseni et al. 2014).

The added impediments that limit women's freedom of action or level of endowments based on social expectations associated with their gender identity are referred to as gender-based constraints. They limit agricultural productivity and economic growth by inhibiting men's or women's access to resources—including productive assets, participation, time use, mobility, legal rights, and exercise of power. Gender-based constraints create measurable gender asymmetries in outcomes. Unequal access to information or restrictions on women's control of income derived from the sale of produce they help grow can reduce women's incentives to invest in agriculture and their contribution to household incomes. Research suggests that a more equitable allocation of resources that gives both men and women access to secure land and resource tenure, higher quality seeds, better tools, greater ease of transport, and improved market information can increase smallholder productivity and reduce poverty (FAO 2011). Agricultural interventions should seek to reduce or remove gender-based constraints to achieve greater productivity.

Projects can be consciously designed to counter existing gender-based constraints. To this end, the Gender Continuum³ (Figure 1) was designed to help practitioners consider

2 The data are based on the share of women agricultural holders available for 52 countries. For more detailed information on the definitions and calculations used to quantify the potential gains, consult the FAO report cited above.

3 The Gender Continuum and the definitions used here are adapted from several sources including Manfre and Rubin (2012); Gates Foundation (2012); Caro (2009); and Rubin, Manfre, and Nichols Barrett (2009).

FIGURE 1 THE GENDER CONTINUUM



Source: Adapted from Manfre and Rubin (2012); Gates Foundation (2012); and Rubin, Manfre, and Nichols Barrett (2009).

different levels of engagement with gender issues and move projects towards more meaningful interventions. Specifically, it identifies three ways that gender issues are typically considered—not always consciously—in the process of project design.

- 1. GENDER BLIND efforts typically do not acknowledge the role of gender in different social contexts and ignore the different ways that men and women engage with productive resources.** Households, communities, and other institutions are seen as unitary entities. A gender-blind approach overlooks the interests of women or women's groups and tends to reinforce existing, unequal power relations.
- 2. GENDER AWARE approaches have an understanding of the different needs and interests of men and women.** These approaches develop activities to ensure that both men and women benefit and that neither is harmed. This approach does not deliberately challenge unequal relations of power.
- 3. GENDER TRANSFORMATIVE approaches explicitly engage both women and men to examine, question, and change those institutions and norms that reinforce gender inequalities.** This intentional and collaborative exploration, testing, and resolution process seeks to achieve both economic growth and gender equality objectives.

The continuum explicitly encourages practitioners to analyze the gendered assumptions in the project design process. The goal is to become more attentive to gender issues during design and diagnosis so that projects can be prepared in ways to move explicitly toward gender equality in UCO of assets. Even when projects are designed with little or no awareness of gender issues, thinking about a project's placement on the continuum also serves to hold project implementers accountable to achieving more equitable outcomes.

Why assets are important

It is now widely recognized that ownership and control over assets such as land and housing provide direct and indirect benefits to individuals and households, including a secure place to live, the means of a livelihood, protection during emergencies, and collateral for credit that can be used for investment or consumption. Recent studies suggest that assets are important for reducing poverty, and cushioning risk and vulnerability from natural disasters, illness, or financial crises. At the macro level, a growing literature finds that asset equality is positively correlated with economic growth. Asset inequality, combined with market failures, leads to differential productivity between the asset poor and asset rich, which creates poverty and inequality traps (Doss, Grown, and Deere 2008:2).

For decades, improvement in economic well-being was measured primarily by increases in individual or household income. With the development of approaches associated with sustainable livelihoods and reexaminations of definitions of poverty, a broader understanding of well-being has been constructed which acknowledges the importance of different types of productive assets in people's abilities to achieve well-being.

Assets are multi-dimensional stores of wealth and can be used to create more wealth. Land and labor produce crops; animals can produce more animals; buildings can be sold. Assets such as jewelry can be converted to cash and they can also increase in value. Tangible assets such as homes or buildings may both provide services and generate rent. As noted in the quote above, tangible productive assets generate products or services that can be consumed or sold to generate income. Assets can act as collateral and facilitate access to credit and financial services as well as increase social status. Their flexibility provides both security through emergencies and opportunities in periods of growth. Having land and livestock, homes and equipment, and other resources and wealth enable people to create stable and productive lives. Increasing ownership and control of these tangible assets also enables more permanent pathways out of poverty compared to measures that aim to increase incomes or consumption alone (Doss et al. 2008). Even jewelry, an asset more easily held by women than larger investments, can be used to meet family emergencies or support family rituals. Banks or pawn shops can provide loans against jewelry, giving women a greater chance to reclaim their asset, compared to having to sell the asset outright (Meinzen-Dick, Johnson, et al. 2011). Inceas-

BOX 2 TYPES OF ASSETS

Natural resource capital: land, water, trees, livestock, genetic resources, soil fertility

Physical capital: livestock, agricultural, and business equipment, houses, consumer durables, vehicles and transportation, water supply and sanitation facilities, and communications infrastructure

Human capital: education, skills, knowledge, health, nutrition; (these are embodied in the labor of individuals)

Financial capital: savings, credit, and inflows (state transfers and remittances)

Social capital: membership in organizations and groups, social and professional networks

Political capital: citizenship, enfranchisement, and effective participation in governance

Source: Meinzen-Dick, Johnson, et al. 2011

ingly, cell phones are proving to be a low cost but valuable asset for men and for women, providing access to information as well as to digital financial services.

Other research looks at the role of intangible assets, including human, social, and political capital. The past few years have seen a sharp increase in funding among some donors for human and institutional capacity building (including by the USAID and World Bank), and value chain interventions seeking to build the capacity of producer and marketing associations to better equip them to operate in global food systems are increasing.

Assets give a person the capability to be independent, to act independently, and to shape the livelihood options they can pursue. A woman's ability to use, control, or own assets is an important factor that determines her success in negotiating for rights both in the household and in the larger community. In societies where women's status is closely tied to a marital relationship, independent asset ownership affords women options when faced with widowhood or divorce.

In the GAAP activities, six categories of assets were identified, building on a model developed for a Sustainable Livelihoods approach (Carney et al. 1999). It includes not only tangible but also intangible assets, such as human, social, and political

capital (Table 1). The Sustainable Livelihoods approach, however valuable, was not explicitly gendered. It is easily applied to a household as a whole or to individuals, but does not capture the complexity of both individual and shared assets, decisionmaking, and outcomes of men and women of different ages, within households.

Agricultural development programs may include interventions to strengthen markets and increase income, even if they do not directly involve specific assets as transfers or target outcomes (Table 1). By studying the impacts of these different types of interventions on different assets, it is possible to offer guidance to donors and development practitioners about the pathways that most effectively reduce the gender asset gap and promote positive development outcomes. In this guide, we describe three broad ways that agricultural programming can begin to reduce the gender gap in assets:

1. Develop projects that increase the stock of agricultural assets, such as through asset transfers
2. Design projects that increase the returns to assets
3. Develop activities to protect assets

Each of these avenues are discussed in greater detail in the section [Addressing gender issues in design](#). Throughout the guide, we look into the ways in which men and women are

TABLE 1 HOW TYPES OF ASSETS FUNCTION IN AGRICULTURAL PROJECTS

ASSET TYPE	EXAMPLES	HOW AGRICULTURAL DEVELOPMENT INTERVENTIONS RELY ON THESE ASSETS
Natural	Land, water, trees, planting materials, livestock	These are often necessary assets for interventions which aim to increase agricultural productivity, for example land in the case of crop production. Or they are elements that are used to improve productivity, in the case of water or planting materials. People can also invest in improved breeds of livestock.
Physical	Livestock, vehicles, and transportation; agricultural and business equipment, including cooling tanks or cold storage units; and infrastructure	Physical assets in the form of equipment often feature prominently in production, such as tractors. In value chain projects, these assets include infrastructure that is important for marketing or processing, for example vehicles or dryers, cold storage facilities, cooling tanks, and other equipment. Livestock, when used with a plow, can provide animal traction, and is the basis for dairy production.
Human	Education, skills, knowledge, health, nutritional status	Human capital refers to the knowledge and skills farmers acquire that help them improve their production, processing, and marketing efforts. Interventions build these skills and rely on different vehicles for delivering those skills, including training, mentoring, farmer field schools, and other types of extension. Human capital also includes health and nutritional status, which are essential to farmers' productivity and well-being.
Financial	Savings, credit, remittances	Interventions may provide or rely on savings, credit, or cash that enables farmers to purchase inputs and make other investments.
Social	Membership in groups, professional networks	Interventions may build social capital by forming groups, and rely on social capital both for disseminating information about technology and prices as well as for aggregating products to take to market.
Political	Citizenship, effective participation in governance	These interventions will focus on ensuring that the rules that uphold people's rights are enforced or strengthen people's ability to advocate for their rights. In the context of an agricultural value chain, they also strengthen people's ability to participate in determining and enforcing the terms and conditions of contracts that govern relationships between actors.

differently positioned in their households and communities to have access to, control over, and ownership of not only different types of assets, but also different types of rights over assets. These differences can be identified and measured.

Common Concerns

Our intervention is not specifically about addressing gender inequalities

Your intervention may not explicitly aim to address gender inequalities, but it is likely that you are working with both male and female farmers. Even without a gender focus, it is likely you may be witnessing differences in how men and women interact with, participate in, or perform in your intervention. It is now widely accepted that in order for agricultural development interventions to reach the greatest number of men and women farmers, practitioners need to consider how gender roles and relations impact the design and implementation of their activities. Doing a gender analysis can help structure and design activities to have the greatest impact possible by reaching both men and women, and at the very least to avoid exacerbating gender inequalities. This guide is specifically designed to address gender and asset-related issues, but there is a large body of literature on gender and agriculture more broadly that you can consult if your questions about how to address gender issues in your interventions are not answered here (see list of additional resources at the end of the guide).

Our intervention is not specifically about assets

You might not think your intervention is about assets, but it probably relies on or builds assets. Assets are the resources men and women have available to them as a means of storing or generating wealth. In agriculture there are a range of assets (like land, water, or livestock) that are the primary building blocks of development interventions, with additional assets (like training and extension, farmer groups, and technology or equipment) that help to increase the value of agricultural production and improve farmers' access to markets. Income generated by projects can be used to acquire and accumulate assets. The information in this guide should help clarify the relationship between your work and the assets framework and allow you to think and act differently to design agricultural development interventions with more sustainable and poverty reducing impacts.

Is it sufficient to just target women and women's assets?

The terms "gender" and "women" are often used interchangeably, and many people confuse gender-related work with simply targeting women. They are however two distinct concepts. Gender refers to the social category used to

describe economic, social, political, and cultural attributes associated with being a man or a woman. Targeting women is neither a substitute for nor in conflict with addressing gender issues that affect men and women but is instead only one part of the analysis. Addressing gender issues requires that you analyze women's needs in relation to their relationships with other individuals, both men and women, and to understand intrahousehold gender dynamics that exists not only between men and women, but also across generations. In households in South Asia and in parts of Africa, older women wield significant power over their son's wives. Gender issues related to the institutions that govern the distribution of, and the use and control over assets also need analysis. Strengthening women's assets may not reduce the gender gap if men's assets are also increasing at the same rate. Moreover, strengthening a woman's use, control, and ownership of assets cannot effectively be done without considering how she relates to and is affected by men, women, households, community leaders, and policies that shape the context of her life.

This will make the project more expensive

This might increase the costs of your intervention. It will require greater attention from your staff and may also require support from external consultants to ensure that you are collecting and analyzing the information appropriately. The value of adopting a gender and assets focus will not however be found in the budget for your intervention, but in the potential impact the project may have on improving the lives of its beneficiaries and achieving sustained poverty reduction. Equally important is acknowledging the potential costs of ignoring gender issues when a crisis emerges and when issues need to be addressed as a result of poor design.

This is too difficult

Applying a gender and asset focus will be challenging, but we hope that you will also find that the information in this guide makes knowing what to do a little easier. It will require more intentional and explicit attention to addressing gender issues throughout the project cycle, from the initial diagnosis stages through to evaluation. We've provided guidance in this document to help you along the way, but you may find that you need to complement your understanding of the issues with additional resources. For this reason we've included a list of additional resources in an annex.

About the Gender, Agriculture, and Assets Project (GAAP)

The Gender, Agriculture, and Assets Project (GAAP) was a collaborative effort between researchers, impact evaluators, and project implementers. It was jointly led by the International Food Policy Research Institute (IFPRI) and the Interna-

tional Livestock Research Institute (ILRI) and has been funded by the Bill & Melinda Gates Foundation from 2010-2014.⁴ GAAP's goal was to better understand gender and asset dynamics in agricultural development programs. GAAP core team members worked with eight agricultural development projects in Africa south of the Sahara and South Asia (Box 3) to identify how development projects impact men's and women's assets; clarify which strategies have been successful in reducing gender gaps in asset access, control and ownership; and improve partner organization's abilities to measure and analyze qualitative and quantitative gender and assets data in their M&E plans for current and future projects. A ninth group, The East African Dairy Development project, also participated in some but not all of these activities in the GAAP portfolio.

3

GENDER AND ASSETS: WHAT DOES THE RESEARCH TELL US?

The GAAP project started with a hypothesis or analytic narrative that "gender blind" projects—those designed without awareness of differences in men's and women's asset endowments—would be less successful at reducing the gender gap than projects designed in a gender-aware manner.

Increasingly, agricultural development projects are recognizing the need to consider gender issues in project design. While this gender aware approach is a move in the right direction, project staff members continue to experience challenges achieving gender-equitable outcomes. Maintaining attention to gender throughout the project cycle requires following a systematic approach, using appropriate tools for data collection and analysis, as well as a willingness to make mid-course corrections.

Addressing gender issues in diagnosis and planning

This section discusses types of information about

⁴ For more information see the GAAP project blog at: <http://gaap.ifpri.info/>.

BOX 3 GAAP PARTNERS

BRAC - CHALLENGING THE FRONTIERS OF POVERTY REDUCTION –TARGETING THE ULTRA-POOR (CFPR-TUP)

The goal of the CFPR-TUP program is to assist the ultra poor in rural Bangladesh to move out of ultra poverty and access mainstream development programming. The CFPR-TUP program provides small grants to women in ultra-poor households; participating households are provided with assets (including cattle, goats, poultry, or land for horticulture) and intensive training on how to utilize the assets (including improved technology and management practices). The CFPR-TUP began in 2002 and thus far has reached 400,000 ultra poor women and their families from the poorest regions of Bangladesh.

CARE - STRENGTHENING THE DAIRY VALUE CHAIN PROJECT (SDVCP) IN BANGLADESH

The goal of SDVCP is to improve the dairy-related incomes of 35,000 smallholder farmers in northwest Bangladesh. The project seeks to achieve its goal by addressing the major challenges to improving smallholder participation in the value chain, namely farmer mobilization and education, access to markets for their milk, and access to productivity-enhancing inputs. The project assists in the formation of dairy farmer groups, selection of farmer group leaders, selection of dairy collectors and livestock health workers, and training of all those involved. Within this project, the GAAP component looks at how levels of both tangible and intangible assets for men and women may have changed as an outcome of the intervention.

CSISA - CEREAL SYSTEMS INITIATIVE FOR SOUTH ASIA

The CSISA project was launched in 2009 with a goal to reduce food and income security in South Asia through accelerated development and deployment of new cereal varieties, sustainable crop and resource systems management practices, and better access to information. The project includes widespread delivery and adaptation of production and postharvest technologies to increase cereal production and raise income; and promotion of (i) crop and resource management practices, and (ii) high-yielding, stress tolerant, and disease- and insect resistant rice, wheat and maize varieties and hybrids. In particular, the project looks at how men and women have different levels of ownership, access, and decisionmaking around key livelihood-sustaining assets and whether or not the introduction of new technologies influences these levels.

HARVESTPLUS - REACHING END USERS ORANGE SWEET POTATO PROJECT (REU)

The goal of the HarvestPlus REU Orange Sweet Potato (OSP) project is to increase vitamin A intake and reduce vitamin A deficiency among vulnerable populations (women and children) in rural Uganda by introducing betacarotene-rich OSP and related messages concerning agronomy, nutrition, and marketing. OSP vines were disseminated through existing farmers groups which were composed largely or entirely of women. This project and evaluation were intended to provide a "proof of concept" of a multi-million dollar effort to support biofortification as a strategy to reduce micronutrient deficiencies.

gender and assets that are needed as the foundation for effective design of gender-responsive agricultural interventions.

The initial diagnostic and planning phase is critical to gender-responsive project creation. It explains the context, the extent of the problem being addressed, the potential for response, as well as the anticipated entry points for gender-related activities throughout the project cycle. Each organization should have a clearly defined process for ensuring that gender-sensitive data collection and analysis is done either by in-house staff or with consultants experienced in gender assessments.⁵ The guidance might call for a variety of methods, depending on relative costs and time available, to collect and analyze a core set of sex-disaggregated data points or topic areas.

Research finding #1: Gender issues are context specific

Nearly everyone working in development today is familiar with the difference between the ideas of “sex” and “gender.” Sex is about biology and gender is about culture. **Sex** refers

⁵ See List of Additional Resources on Gender and Agriculture at the end of this document.

to the biological characteristics that define males and females primarily according to reproductive capabilities or potentialities and are the same from place to place. **Gender** by contrast refers to how each society associates expectations of behavior differently with men or women: what it is appropriate for them to do, where they can be, what they can wear, learn, or own (see Glossary).

This distinction between the biological and the social is very important for development work because development is fundamentally about facilitating positive change. Gender relations can and do change. In few parts of the world does a young woman conduct herself exactly as her grandmother did: she might go to high school or college, ride a bicycle, or work outside the home. Unlike in the past, young men and women in some parts of the world have greater freedom to work together, to get married without their parents’ consent, or to get divorced; in other areas, these liberties are now more restricted than in their grandparents’ time. Changes in the ways that men and women live in the world and interact with each other are an expression of changes in **gender roles and relations**.

HELEN KELLER INTERNATIONAL - ENHANCED HOMESTEAD FOOD PRODUCTION (E-HFP)

The goal of the E-HFP program is to improve the nutritional status of infants, young children, and mothers through improved access to nutritious foods year round and the adoption of optimal nutritional practices. The E-HFP program helps young mothers establish homestead gardens in the Fada region of Burkina Faso. The project provides inputs (hens, seeds) and trainings in gardening, irrigation, and small livestock rearing to beneficiary women. In addition, the project establishes and trains a system of community level trainers who in turn train beneficiary women in improved nutrition practices using behavior change communications.

KICKSTART INTERNATIONAL

The objective of the KickStart project is to lift poor farmers in Kenya and Tanzania out of poverty through increased yields and crop production achieved through manually operated low cost micro-irrigation treadle pumps. Indirect benefits of pumps may also include improved hygiene, sanitation, health, and nutrition. The GAAP project collaborated with KickStart to conduct qualitative work to better understand the gender dynamics of who purchases and controls pumps as well as the intrahousehold effects of pump use on health and labor outcomes.

LANDESA - MICRO-LAND TITLING FOR INDIA’S LANDLESS AGRICULTURAL LABORERS

Landesa works with state governments and local communities to reduce poverty through improved allocation and regularization of homestead land in India through the Vasundhara and Gramakantha Paramboke programs in Odisha and the Nijo Griha, Nijo Bhumi program in West Bengal. Both programs explicitly include gender components by promoting the inclusion of women’s names on land titles in order to empower women and promote land security for widows and other vulnerable groups. The programs also provide a variety of forms of assistance for housing and basic inputs (seeds), capacity building in homestead food production, and promote local development of roads, water, and terrain leveling.

LAND O’LAKES - MANICA SMALLHOLDER DAIRY DEVELOPMENT PROGRAM (MSDDP)

The MSDDP in Manica Province has two primary objectives: (1) rebuilding Mozambique’s dairy industry to meet market demand and (2) increasing incomes for smallholder farmers by participating in a sustainable dairy value chain. The program provides inputs (dairy cows), training (fodder crop and pasture management, animal husbandry), and assistance in establishment of producer cooperatives, milk collection centers and marketing campaigns.

EXTRA: LET'S TALK ABOUT "GENDER ANALYSIS"

Gender analysis is a type of socioeconomic analysis intended to illuminate the links between the existing gender relations in a particular society and development problems that need to be addressed. It is a tool designed for two purposes:

1. Describe existing gender relations, such as in a community, institution, or country
2. Organize and interpret information about gender relationships in a systematic way to clarify the importance of addressing gender disparities to achieve project objectives

There are many different gender analysis frameworks used for collecting sex-disaggregated data and analyzing gender-relevant information. No single framework provides an appropriate way to address all development problems. Commonly referenced gender analysis frameworks are listed here:

1. The Harvard Analytical Framework, also known as the Gender Roles Framework
2. The Moser Gender Planning Framework
3. The Gender Analysis Matrix (GAM)
4. The Women's Empowerment Framework (WEP)
5. The Social Relations Approach
6. The Gender Dimensions Framework

More information about these frameworks can be found in March, Smyth, and Mukhopadhyay (1999); and Rubin, Manfre, and Nichols Barrett (2009).

Physical universals cannot predict social behaviors and decisionmaking, such as those related to technology adoption. This realization is a point important to understand before embarking on a design strategy or, in the case of a firm, a marketing approach. Research on the acceptance of treadle pumps, for example, has shown that there is variation both in women's own willingness to use the pumps and men's willingness to let women use them. Although successful in parts of India (Prabhu 1999), Kenya, and Zambia (Kay and Bradden 2000), a study in Ghana (Adeoti 2012) found that both men and women had concerns about using the treadle pumps. Men believed the work "too arduous for women" and the women themselves reported being uncomfortable with the up and down motion required to work the pump (Adeoti 2007: 20). Research conducted in Kenya and Tanzania with KickStart International, one of the GAAP partners, also found a mixed picture: men were the dominant users of the pumps, but both women and children also participated, even as some women expressed a belief that the physical work required to use the pump was "culturally inappropriate" (Njuki et al. 2013).

Ideas about appropriate roles and responsibilities for men and women, old and young, vary across social settings and from one ethnic or income group to another. These beliefs shape our behavior as well as our thoughts and opinions about what we do. These norms and beliefs surrounding our activities, particularly when related to the division of labor for

many tasks, may be expressed as certainties about physical capabilities, but they are not actually linked to what is physically possible. Except for childbirth and breastfeeding, men and women's physical capabilities for different tasks are quite similar, and are shaped more by social convention than physical strength or dexterity. For example, women participate in every phase of cassava production in Southeast Nigeria, from planting to harvesting, and they also control the processing and sale of cassava products such as *gari* and *fufu*. In other parts of Nigeria, men dominate production and profess that the physical demands of harvesting are too much for women. Social beliefs also shape economic opportunities available to men and women beyond production. For example, beliefs about the appropriateness of women in managerial roles may limit hiring and promotion of women as supervisors in processing plants and offices.

Beliefs about time use are manifested in multiple and sometimes contradictory ways. They may restrict women from taking on productive work when it conflicts with their other domestic responsibilities, such as child or elder care. Social beliefs about appropriate ways for women to spend their time can restrict their opportunities to build skills or attend meetings, both of which are ways to strengthen human and social capital.

Social beliefs also shape men's and women's UCO related to different categories of assets or specific individual assets and

how benefits from those assets should be shared. A religious or customary belief that sons should inherit land may in some communities override a national law which stipulates equal inheritance rights for sons and daughters. Inheritance is a form of benefit sharing that operates across generations. In the shorter term, gender ideologies can influence whether men and women (or their children) will benefit equitably from the labor they contribute to agricultural activities, including processing and marketing. For example, women growing vegetables using pumps purchased from KickStart International reported preferences for different crops than men, in part because they maintained greater control over the income from the sale of lower valued crops (Njuki et al. 2013).

It is important in the diagnosis and planning stage to get a handle on the difference between what people say they believe and how they actually act, since there can be divergence between peoples' professed beliefs and their practices. For example, interviews with input suppliers and rural banks in Kenya and Tanzania revealed that many people in positions to extend credit said they believed women were more trustworthy than men. However, they still refused to loan larger sums to women, who had only limited collateral to guarantee the loan. Social beliefs and perceptions often guide behavior but do not necessarily determine the actions of individuals (Rubin, Manfre, and Nichols Barrett 2009).

The important take-away is that gender **norms** and **attitudes**—unlike men's and women's physical characteristics—are not static. Both can and do change when context-specific incentives or modifications are put in place.

RESEARCH FINDING #1 ACTION ITEMS

1. Understand and analyze the context.
2. Identify and assess prevailing norms and practices around assets.
3. Consider how social beliefs and perceptions may guide individual behavior but do not determine it.

Research finding #2: Men's and women's initial levels of asset endowments affect their take-up of agricultural technologies

By design, agricultural development interventions seek to improve the incomes and ultimately the welfare of those who participate in their activities. In recent years, a growing focus has also been to reduce disparities between men and women in the households and communities engaging in the development activities. These efforts are backed by policies that argue that men and women face different constraints as actors in global food systems and that targeted support is needed to "level the playing field." A growing body of research, including that conducted under the GAAP initiative, indicates that gender-based constraints related to assets are a key factor in men's and women's differential abilities to participate in and benefit from agricultural development projects (FAO 2011; Meinzen-Dick, Johnson, et al. 2011).

During the diagnosis and planning phase, practitioners will want to consider the specific assets that are needed to achieve the project objectives. Will smallholders need to have land to participate in an agricultural project supporting crop diversification, or do they need to be able to access the financial capital to purchase or rent land? Different answers to this question can have different and important implications for men and women in the project area. In some areas, women have a harder time than men to get land or loans either as a result of customary laws on land use or as a result of formal restrictions on lending. In Burkina Faso, the HKI Enhanced Homestead Food Production for Improved Food Security and Nutrition project identified women's independent access to land as one of several key constraints, and facilitated an agreement with local governments to provide garden plots on community land. Collecting information about critical limiting assets and how men and women might face different constraints in using, controlling, or owning those assets can be explored in the diagnosis phase so that project design successfully identifies how to build gender-equitable access to these assets.

Similar situations face dairy projects. Do milk producers need to have a cow or a specific number of cattle in their herds at

EXTRA: LET'S TALK ABOUT "TRADITION"

People often justify their continued patterns of gendered behavior by saying it is their "tradition." While both men and women may be strongly committed to following what they believe are long-standing and unchanging practices, cultural history repeatedly reveals that many "traditions" are more changeable and more recent than people think (Hobsbawm and Ranger 1983). When these patterns of behavior are discriminatory or inequitable, they should be viewed not as inevitable, but as a choice. It is the job of development practitioners to offer different and more equitable choices, and to design incentive structures to encourage people to adopt them.

project start up or will the project supply the cows as one of its activities? In the Land O'Lakes project in Mozambique, potential project beneficiaries included both farmers who already had cows and those who did not. Eligible participants were given a pregnant improved dairy cow and training as part of the project. The project was designed initially to prioritize farmers who already had cows, but staff soon realized that there were very few eligible farmers with cows, making it difficult for them to meet their goals without broadening the scope.

Intangible assets can also be the constraint, whether in the form of human, social, or political capital. In situations where people may have adequate land but lack the skills to farm it more productively or market their produce more effectively, development interventions may find it advantageous to focus on the provision of training or facilitate group activities. Recognizing that the poor, and more specifically the ultra-poor, not only lack assets but often also the social networks that would link them to information about how to use assets more productively, the Challenging the Frontiers of Poverty Reduction-Targeting the Ultra Poor (CFPR-TUP) in Bangladesh was designed to transfer key productive assets and provide training so men and women would be able to use the assets. Similarly a Mercy Corps project in Tajikistan provided weekly educational meetings on nutrition, sanitation, and rural development topics to local residents, many of them women. They found that the meetings had benefits for the women beyond increased knowledge, as self-reported increases in decision-making capabilities in the home (Spindler 2009).

The diagnosis and initial planning phase is the time to identify—and not assume—which are the critical assets as the first step; clarifying the gender implications follows.

Men and women have different types and levels of assets

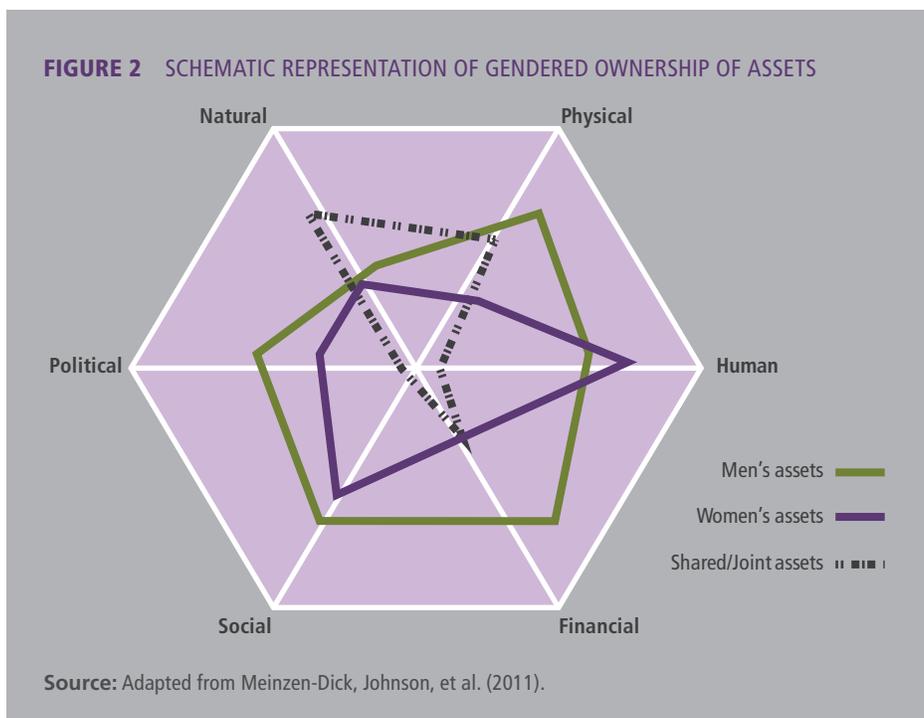
We now acknowledge that men, women, and youth (both young men and young women) use, control, and own different types of tangible assets (such as land, livestock, equipment, and household possessions) and have different types and levels of intangible assets (including education, social networks, and political effectiveness) (Meinzen-Dick, Johnson, et al. 2011).

These gaps have been repeatedly documented at a national level through large scale surveys, some of which focus on a single asset such as land, and some of which look at a wider range of assets as well as other indicators of poverty and well-being, such as the Living Standards Measurement Surveys (www.worldbank.org) or some national agricultural censuses. Other global surveys have been used to create indices of disparities according to specific formulas, for example the Global Gender Gap (<http://www.weforum.org/issues/global-gender-gap>) or the United Nations Gender Inequality Index (<http://hdr.undp.org/en/statistics/gii>). While these indices provide an overall picture at a national scale, for project managers, they cannot substitute for project level data collection and analysis.

GAAP's efforts differed from these studies by collecting data on the gender gap as it specifically relates to productive assets

at the project level. Each of its eight core projects collected data that revealed a difference in men's and women's assets, and found that in nearly all situations, women held fewer assets and they were of lower value than those held by men, a trend that is illustrated graphically in Figure 2.

There is thus a wealth of information available through desktop review to provide background on the general scale of gender disparities by country and by asset, although specific assessments using rapid appraisals or group interviews may be helpful to clarify the most important disparities in a particular community or for particular assets.



EXTRA: LET'S TALK ABOUT "YOUTH"

Today's youth may become tomorrow's farmers and agribusiness entrepreneurs. Yet they face special challenges in taking up these roles, and some of those challenges relate to the constraints they face in accumulating assets. Young men and women, like their elders, use, control, or own agriculturally related assets in ways that are shaped by gender norms specific to the local context in which they live. On the one hand, they may have greater ability than their elders to gain education through the formal school system or to attend training programs designed for youth; on the other, they may be even more restricted in using key assets such as land or financial capital because of age-structured constraints. Young men in many parts of the world have significantly more social and physical mobility than do young women. And where young men's mobility may be even greater than some older men who may be tied down by their jobs or household obligations, in other contexts young unmarried women may have less mobility than their mothers. Projects need to recognize and document differences between both young men and young women and between youth and elders in the design and implementation of new agricultural interventions.

Men and women value assets differently

Through socialization, men and women are taught to value assets differently. In many countries, boys are encouraged to recognize and acquire different models of cars; girls are similarly encouraged to acquire jewelry. Boys and girls often have different levels of interest in education or in studying particular subjects. Qualitative research conducted by the Cereal Systems Initiative in South Asia (CSISA), with data drawn from interviews with separate gatherings of men and women from upper and lower caste groups, allowed the project to capture insights into this aspect of gendered valuation of assets. Surveys conducted in 318 households in 18 villages collected data on household composition and assets. In separate interviews, the principal man and woman were shown pictures of assets and asked, among other questions, what assets were important to them. Both men and women identified farmland, dairy animals, houses, and cellular phones as the most important assets. Men gave significantly higher ranking to bicycles, while women gave higher ranking to jewelry. These

varied valuations reflect in part a difference in control over these two types of assets—that men have greater control over bicycles, whereas women exercise greater control over jewelry—but also the gendered norms around the importance of these assets.

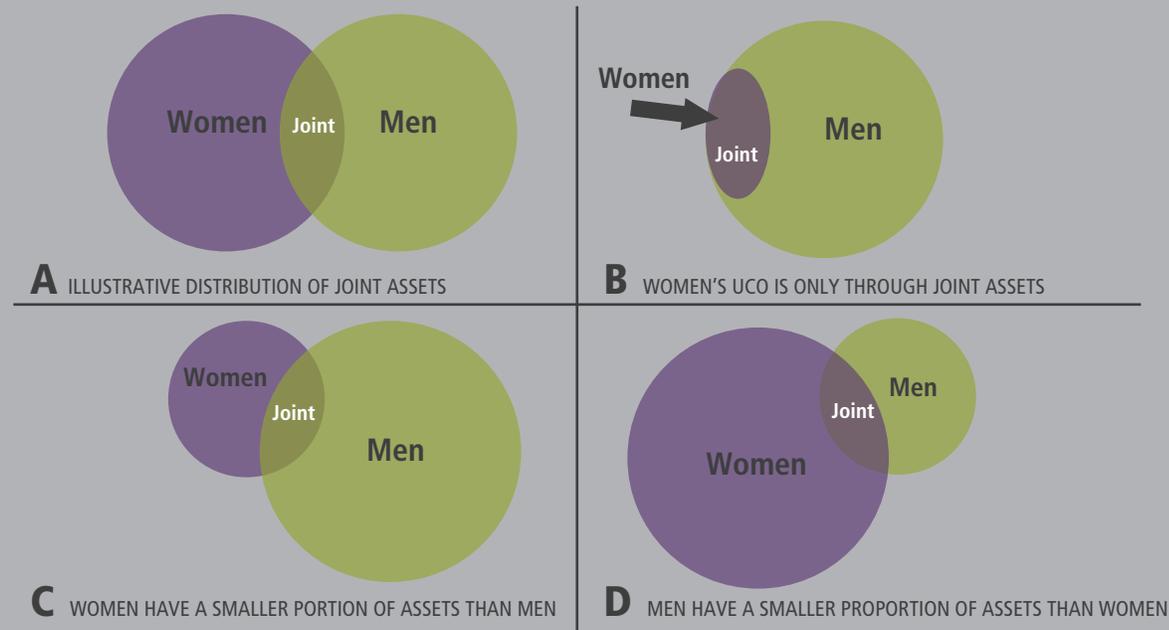
Men's and women's different types and levels of assets can affect how they can participate in the project

The details of men's and women's assets endowments can be complicated to define, and require intentional methodologies to accurately capture. For example, depending on the locale, a horticulture value chain project may need to determine if both men and women have rights to land, whether that be through access to shared household land or through rental or purchase of new individual or shared plots, or even through transfer of other land in the community. Equitable participation of both men and women in the project will depend on

TABLE 2 CATEGORIES OF LAND RIGHTS

CATEGORIZATION	DEFINITION	EXAMPLE (PIECE OF LAND)
Access	Right to use the asset	Individual(s) has the right to physically be on a piece of land and use the land. In many cases, women are an important source of basic labor (weeding, harvesting) on men's fields, but have no control over the output or even their own time.
Withdrawal	Right to claim the output or income produced by the asset	Individual(s) has the right to use or sell the produce grown on the piece of land and, most importantly, to receive the income from the sale. In some cases, women are actually responsible for selling the agricultural products at the market, but have no rights over the financial reward.
Management	Right to make decisions about how to use the asset	Individual(s) has the right to make such decisions as what crops will be grown on the piece of land, what laborers will be hired, and how agricultural inputs like fertilizer and pesticides will be applied.
Exclusion	Right to exclude others from using the asset	Individual(s) has the right to exclude others from physically being on or using the land.
Alienation	Right to transfer the asset to others, such as through sale, leasing, gift, or inheritance	Individual(s) has the right to transfer ownership of a piece of land to others. In the majority of cases, women lack the right to decide what will be done with land or to even receive the land, especially through inheritance.

Source: Johnson and Quisumbing (2009).

FIGURE 2 SCHEMATIC REPRESENTATION OF GENDERED OWNERSHIP OF ASSETS

Source: Adapted from Meinzen-Dick, Johnson, et al. (2011).

their being able to exercise their rights to appropriate parcels of land.

Definitions of use, control, and ownership differ

How people define the terms “use” (or “access”), “control,” and “ownership” differs from one place to another, sometimes according to the assets, and sometimes depending on whether they are being employed by a man or a woman. Further, which dimensions and definitions of rights are the most important for gender and assets research are situational and vary by assets. Take, for example, a dairy cow that is “jointly owned” by a husband and wife. In several East African countries, the husband has the right to claim and sell the milk produced by the morning milking, even if it is the wife who decides what to feed the animal and who does the actual milking, activities that can affect how much milk is produced. The wife may have the right to claim and use or sell the milk from the evening milking. Both husband and wife may claim to “own” the cow, even when their access to its production and the income those products bring in are quite different. Do both of the joint owners have the right to sell the cow? When speaking of livestock, these rights, though complex, are fairly concrete and can, with patience, be disentangled. Table 1 shows how rights might be defined with regard to a plot of land. Doss et al. (2013) also offer an excellent review of the different ways in which land rights can be concep-

tualized. Thirty years ago, most development practitioners accepted (and some still do today) that the household should be considered as a single unit (Becker 1981) in which every member held common interests and pooled their resources that were then allocated to all household members. There have since been significant shifts in our knowledge of how households operate and the dynamics of intrahousehold resource allocation (Haddad, Hoddinott, and Alderman 1997; Quisumbing and Maluccio 2000; Quisumbing 2003). Today we understand it to be a much more complicated unit where conflict, cooperation, and negotiation occur between members of differing levels of power and influence.

This situation’s complexity is recognized by the collective model of household decisionmaking, which allows for differences of opinion among household members regarding economic and other decisions. Unlike the unitary model described in the previous paragraph, the collective model acknowledges that when there is disagreement within a household, its resolution may depend on the bargaining power of individual household members. Sociocultural context and intra-household resource allocation rules determine who within the household has access to a particular resource and for what purpose. In this regard, gender intersects with age in shaping UCO of assets.

TABLE 3 HOW ASSETS ARE BUILT INTO AGRICULTURAL INTERVENTIONS

AIM OF AGRICULTURAL INTERVENTION	MEN'S AND WOMEN'S PARTICIPATION WILL REQUIRE USE, CONTROL OR OWNERSHIP OF THESE ASSETS*	ACTIVITIES WILL FOCUS ON STRENGTHENING OR PROVIDING THESE ASSETS:
Increase agricultural productivity	Land Livestock	Inputs Credit Agricultural extension services Agricultural training and information
Increase smallholder incomes	Land Livestock Access to other physical assets, transportation, storage, chilling plants, equipment for processing	Linkages with buyers or traders Credit Market information
Improve nutritional outcomes of women and children	Land Livestock Planting material or seeds	Other inputs Credit Agricultural and nutrition extension Agricultural and nutrition training and information
Strengthen value chain linkages	Vertical linkages with service providers or buyers Horizontal linkages with other farmers or similar businesses	Credit Market information Access to physical assets, transportation, storage, chilling plants, equipment for processing

NOTE: The project may need to facilitate access to these assets.

A topic that is becoming increasingly important in asset research and which has implications for project activities is that of “jointness.” The concept recognizes that some assets, livelihood strategies, income, or savings are separate for men and women, and some are shared or jointly managed within a household. While the concept can apply to livelihood strategies, income, and risk, it is especially relevant to understanding rights over assets. Jointness involves two or more people sharing some dimensions of UCO over an asset. While most common between spouses, jointness can also be a characteristic of parent-child or sibling relationships, as well as among unrelated people. It is separate and distinct from the unitary model of the household, in which all assets are assumed to be shared, or the bargaining model, in which separately-held assets determine bargaining power.

Jointness embodies all the complexity of different rights of use, control, and ownership. The concept refers to assets in the intersection between individual men's or women's exclusive ownership—although one individual may exert more or less ownership or control. Figure 2a shows a distribution of men's, women's, and shared assets, where the shared amount is relatively small and the level of individual assets is equal for men and for women. In Figure 2b, the men have a greater proportion of assets and women, while having UCO over shared assets, have no individually owned assets. In Figure 2c, men have a greater share of the shared assets; in Figure 2d, as an illustration, women do.

Employing a notion of jointness may help to overcome opposition by beneficiaries who resist the targeting of only men or only women in seeking to reduce the gender gap. It is a useful concept for better understanding the nuances of asset UCO in households. However it's not without complications. It can create more complexity and confusion around men's and women's UCO and requires greater need to distinguish between real and nominal jointness. The value people place on individual versus joint assets also varies. Clarifying the concept with target beneficiaries is important not only in the initial diagnosis but also during implementation and the evaluation process. This is an area which would benefit from more investigation.

RESEARCH FINDING #2 ACTION ITEMS

1. Identify the critical assets needed for the project to achieve its goals
2. Document men's and women's individual and shared asset endowments
3. Clarify the types of rights that men and women have over the UCO of assets
4. Understand that resources are not often allocated uniformly within a household: older and younger men and women have access to different types and levels of assets

5. Understand the importance of individual and shared assets
6. Consider whether increasing shared assets also helps to reduce asset gaps

Addressing gender issues in design

This section provides recommendations for how to design agricultural projects to reduce the gender and asset gap or strengthen women's UCO of assets. It describes how agricultural interventions can be designed using the information collected and analyzed during the initial diagnosis and planning efforts described in the previous section. It will help you find similarities between the issues discussed here about gender and assets and your own projects.

The design of agricultural projects with a gender and asset focus is informed by primary and secondary research about the individuals, households, and contexts where interventions are going to occur. Your diagnosis and planning efforts should have allowed you to understand what assets are at men's and women's disposal, an understanding which will now help you identify the strengths and weaknesses of their asset portfolios and what that means for how you design your activity.

Research Finding #3: The design of agricultural development interventions can affect men's and women's assets

If you intend to include a greater focus on gender and assets in your project, it is important to know how assets are built into agricultural development interventions. Consider for example Table 3, which outlines what assets men and women will need to be able to participate (column 2) in agricultural development interventions with different goals (column 1), as well as the type of assets that will be the focus of activities (column 3). The goals listed in column 1 are not mutually exclusive and some larger interventions may target several of these, such as increasing both agricultural productivity and smallholder incomes.

As you consider how to design your specific interventions you will want to examine the data that you collected to understand where the differences in men's and women's UCO of certain assets will affect their ability to participate in activities. Do men have access, control, or ownership over those assets? Do women? For example:

- ▶ If your intervention is going to **increase milk production**, do women have access to cows or goats so that they can participate? Do men? If access is a problem, then the inter-

vention will need to consider how to **increase the stock of these required assets.**

- ▶ If your intervention is going to **increase smallholder incomes**, what assets do women have access to from which they can generate income? What assets do men have access to from which they can generate income? This approach would examine existing levels of men's and women's assets to **increase the returns from those assets.**
- ▶ If your intervention is going to **strengthen horticulture value chains**, do men and women have networks that can allow them to make connections with buyers? Are they members of producer or marketing associations that would strengthen their entry and position in the chain? If either men or women do not have the appropriate assets for entering the chain, then you may need to consider how you will examine **how to harness men's and women's existing networks** or increase their participation in the groups that will allow them to establish better horizontal and vertical linkages.

The remaining discussions in this chapter describe how to design interventions and activities in ways that can strengthen and build women's assets, drawing on GAAP findings.

Design Approaches

There are several different ways of designing projects to include a focus on assets. To determine what kind of approach is likely to suit your specific intervention, it is important, as described above, to consider the assets that will be implicated in your activities as well as the information that you gathered during the initial diagnosis stage on the range of assets available to men and women.

GAAP grouped the projects (those that they worked with and others) into three broad approaches. It should be noted that these approaches are not mutually exclusive. Interventions designed to increase the return to assets can also increase the stock of agricultural assets for the targeted beneficiaries. And likewise, to reduce susceptibility to shocks, an intervention might seek both to diversify the returns from different assets in a household or increase the overall stock of assets, and to protect them through insurance.

Design Approach 1: Increase the stock of agricultural assets

These projects are designed to stimulate agricultural production by transferring assets directly or by making it easier for individuals to build their stocks of assets. For example, this might include land allocation or the provision of livestock. It can also include layaway programs that make it possible to buy assets on credit or programs that subsidize the purchase of assets. In the short term, this asset transfer automatically increases the number of assets for the individual who receives

the asset, although it does not guarantee that individual's control over the assets over the long-term. Who controls those assets will initially be determined by how the project assigns the rights to those assets and whether those rights can be defended against other competing claims.

Programs that choose to use this approach will need to determine who is eligible to receive assets. Research shows that when projects transfer assets in a general way, that is without targeting specific groups or individuals as recipients, men tend to benefit more than women. Programs can, however, shape how the asset transfer is conducted and require that assets be targeted to women. Transferring assets to women increases the total number of assets they own, thereby reducing the gender gap in assets. At the same time, as discussed in the section below on gender issues in evaluations, women do not always benefit equally when assets are transferred to households, even though they may gain rights to use and some aspects of control.

For example in West Bengal, India Landesa aimed to reduce poverty by providing land and land titles to those without them. The Nijo Griha, Nijo Bhumi ("My Home, My Land") project allocates land to poor households. The project is designed to give priority to female-headed households and requires that land titles issued to households with both male and female adults should be jointly titled to the primary man and woman. In CFPR-TUP in Bangladesh, women in beneficiary households received one or more assets from which they could generate an income. These included cows, goats, chickens, ducks, and seeds. This resulted in a significant increase in assets owned solely by women over the life of the project.

One of the reasons to consider mechanisms for targeting women for assets is to address any gender disparities in the assets required to participate in interventions. For example, if your intervention is going to increase milk production from cows and goats, then access to either cows or goats is necessary. Or if you are aiming to increase the production of indigenous vegetables, then land will be a necessary asset to participate. As part of the intervention, you can choose to supply your targeted beneficiaries with the appropriate assets in order for them to participate. Unfortunately this isn't as simple as it sounds.

The Manica Smallholder Dairy Development Program (MSDDP) distributed exotic cows to existing cattle owners and farmers who did not have cows, with the initial intent to prioritize existing cattle owners. This presented two challenges. First, there were fewer existing cattle owners than expected so it would have been difficult to meet targets pursuing a strategy that favored farmers with cows. Second, because in Mozambique men tend to own large assets, like cows, the

transfers of assets favored men: in over 90 percent of surveyed households the cow was registered in a man's name.

One of the surprising findings emerging from the GAAP research is the degree to which people express joint or shared control over assets. In some places, such as Mozambique, these norms dictate that men should own large assets, like livestock, whereas women may own smaller assets, like chickens. However the rules around UCO are often not as rigid as they may appear, and projects may find that they have greater flexibility to challenge or change those rules in order to allow women to own or access assets if not independently, at least jointly. In MSDDP, despite starting with an approach that facilitated men's participation more than women's, the results from the quantitative surveys conducted by GAAP indicate that over a third of cattle held by households in 2009 were considered jointly owned by men and women. This suggests that despite local norms, there may be greater room for joint ownership, and interventions can be designed from the beginning to include options for joint ownership as a means to increasing women's ownership of assets. Careful monitoring of changes in joint UCO will help clarify if these are positive or negative.

Design Approach 2: Increase the returns to assets

Many agricultural development interventions aim to expand markets by linking smallholders to high-value markets through value chains. These projects often increase the returns to assets, for example of livestock or land, by strengthening smallholder farmers' ability to sell milk, rice, or leafy vegetables. This involves improving the quality and quantity of the product, as well as facilitating market linkages between farmers and buyers. In contrast to the previous approach, this design is not necessarily aiming to increase ownership of assets. The focus is on activities that can increase the market value of milk, vegetables, or other products derived from tangible assets, ultimately increasing incomes from the sale of those products.

Ideally, men or women would own the cow or the land from which marketable products are derived, but in these interventions ownership is not always necessary to participate. The ability of women to use a cow for milking or land for crop production is more important than ownership per se. Interventions can be designed to increase the return on assets which only women use. In Burkina Faso, women can access and control small plots that are independent of their husband's land. These plots often belong to men but in some cases women have some degree of control over the production and marketing of crops on this land. Instead of finding a way of transferring assets to women, HKI used this practice to its advantage by teaching women to use these small plots to which they had access to grow micronutrient-rich foods.

HKI also worked with land owners in the village where the project was operating to have them cede land to women for the duration of the project, thereby finding a way for women who did not have access to the small plots to also participate in the project. Women in the HKI project therefore were growing crops on garden plots of which 44 percent were owned by husbands, 28 percent were owned by another village member, and 21 percent were owned by another male family member (van den Bold et al. 2013).

One advantage of designing an approach based on the asset portfolios of men and women is that it then allows you to be very specific in the tailoring of other activities. For example, by understanding the size and type of land that women have access to for crop cultivation, researchers and practitioners can then design and provide other assets, like seed varieties and fertilizers that are the most suitable for the land. We discuss the importance of appropriate choice and design of new technologies later in this section.

A note of caution however. Since this approach does not strengthen women's control or ownership over land or livestock, the rules around those assets can change and undermine women's access. Women may lose access to land when competition for it increases, for example when the activities being pursued on that land have become more lucrative and attractive (Dolan 2001). One review notes "as soon as a natural resource gains commercial value on the international commodity market, control and decisions over that resource pass swiftly from rural women into the hands of men" (Oxfam 2013). One way of mitigating this is to engage other community and household members in the discussions around how those assets will be used to encourage their support of women's activities. For example, public commitments to support women's use of community land can strengthen women's claim by building the political assets necessary for enforcing agreed upon rules. A list of more formal options to protect women's land rights through titling and legislative reform is available in a recent review (Prosterman 2013).

Agricultural development interventions that aim to increase the returns to assets are most likely to be those that have a value chain approach. These interventions therefore need to consider assets that are necessary for facilitating market access, like transportation, storage, milk collection centers, or chilling plants. Targeted beneficiaries do not need to own these assets, but they will need to be able to access them in order to maintain their participation and position in the chain. CARE-SDVCP located milk collection centers more conveniently within villages to reduce transaction and transportation costs, with the added benefit that it also facilitated women's access to them, which was critical given the local

context that valued female seclusion. Other complementary assets are also discussed in Research finding #3.

In addition to considering the assets required for market participation, it is important for interventions that adopt this approach to design benefit-sharing mechanisms that can reward those that directly participate in market activities. Gender dynamics related to the marketing of products and distribution of income can often interfere in ways that reduce women's access to the income from their milking or crop production activities. Women can often participate in value chain projects without accessing or controlling the income derived from their labor. This means that someone else may benefit from the increased returns to the targeted assets. For example, Dolan (2001) found that despite women providing 72 percent of the labor to produce French beans in Kenya, they were only receiving 35 percent of the income from their work. Projects can influence the benefit sharing mechanisms, designing them so that owners of the asset, as well as those who do the work, can benefit.

Agricultural development interventions can pursue a number of different avenues for strengthening women's access to the income derived from their labor. In Kenya, a processing company buying African Bird's Eye chili from women paid them in cash and in household commodities after it found that women were not receiving the payments. In this way, women received non-cash benefits for their work (Rubin, Manfre, and Nichols Barrett 2009). Interventions may also need to strengthen women's financial assets by facilitating women's ability to open bank accounts in their name and making use of the widening range of digital financial tools that can ensure that women receive income safely, securely, and privately.

Design Approach 3: Strengthen mechanisms to protect assets

The final approach focuses on how assets are important for addressing shocks or reducing risk. Climate variability, illness, death, and other shocks can have a significant impact on men's and women's asset portfolios and their livelihood strategies. For example, women's assets are often liquidated to cover health and medical emergencies, depleting their overall stock of assets. Agricultural development interventions are increasingly designing strategies to reduce risk. Often these interventions benefit men more than women because they are designed to protect assets that are typically owned by men, like land and livestock.

The most common strategy is to use financial instruments, such as insurance, to protect the asset (such as land) or produce and by-products (like crops, meat, or milk). These options can be used to protect the assets the men and

women currently own, for example jewelry, equipment, and other goods. For agricultural development interventions, however, women own fewer of the assets that are typically protected through insurance schemes. Because asset ownership is often a requirement for participation in these schemes, strategies that support men or women who do not own the asset are often overlooked. In the case of typical crop insurance projects, landholders are protected through insurance when crops fail. In this situation, landholders, mostly men, will receive some compensation, while their agricultural laborers, mostly women, may lose their jobs and receive no additional compensation. Even expanding the classes of available insurance, such as weather-based index insurance, may not be any better at meeting women's needs (Meinzen-Dick et al. 2014). If women's assets are disposed of to deal with illness shocks, for example, women might be more likely to benefit from health insurance products.

RESEARCH FINDING #3 ACTION ITEMS

1. Link information gathered during diagnosis and planning to design options
2. Design interventions to explicitly transfer assets to women.
3. Change the rules to allow women to own assets independently or jointly
4. Promote livelihood strategies based on the assets which women can access and use
5. Encourage community and public support of women's activities to strengthen their claim over assets
6. Design benefit-sharing mechanisms that can reward those directly participating in market-oriented activities
7. Design risk reduction strategies for men and women who do not own assets but rely on them for their livelihood strategies

Research Finding #4: Investments in human and social capital both facilitate the accumulation of and increase the returns to physical and natural assets

Most agricultural development projects rely on a combination of assets to achieve their goals. Increasing the productivity of crops requires land, as well as other natural resources, for example planting materials; physical capital such as water; human capital in the form of knowledge and skills; and financial capital, including credit. Strengthening these complementary assets among men and women farmers facilitates their ability to yield greater results for increasing productivity and income, supporting adoption, and improving well-being.

The GAAP research findings reveal that investments in human and social capital interventions in particular can both strengthen the accumulation of and increase the returns to other assets. That is, building men's and women's knowledge and skills on how to prune fruit trees or apply fertilizer can improve the quantity and quality of crops grown. And expanding men's or women's social networks, for example by linking them to buyers and traders, can provide them with more market information that would allow them to negotiate better prices. Human and social capital often work in tandem. Groups serve as vehicles for delivering new knowledge (human capital) via extension, as well as other services like credit and technology.

The discussion below focuses, on the one hand, on training and extension as the primary form of human capital that agricultural development interventions offer and, on the other hand, on the types of networks and groups that comprise social capital (Table 4).

Including men and women in training and extension activities

Training and extension activities are key features of most agricultural development projects. Men and women are trained on a number of issues, like those related to good agricultural practices or nutrition. Training and extension activities aim to build the knowledge and skills of men and women so that they can practice what they learn on their fields or with their livestock, with the hope that the results from these activities will translate into increased productivity.

Projects have a tendency to focus on the training of one member of the household, yet GAAP research findings suggest that training both men and women in the same household can improve the productivity and adoption of new practices. The MSDDP project in Mozambique required that two members of participating households attend training on animal and fodder husbandry techniques, which included milk hygiene. The household head, most often a man, was one of the members and in two-thirds of the households a woman was the second member chosen to attend. Most MSDDP households were able to increase in milk production as well as income, although not always in ways that benefited women.

TABLE 4 TYPES OF SOCIAL CAPITAL

GROUP MEMBERSHIP	SOCIAL NETWORKS
Producer groups	Kinship
Microfinance groups	Friendship
Funeral societies	Contacts
Civic, religious, or advocacy groups	Business associates

GAAP research findings show that targeting women for training and extension activities has yielded additional benefits. Women reported that the contributions they made to the care and maintenance of the cows, as a result of their participation in the training, led their husbands to consult them more in decisions. A similar result emerged in Bangladesh under the Strengthening the Dairy Value Chain Project implemented by CARE (CARE-SDVCP), where women reported they gained greater respect from and improved their status among community and family members after participating in the project's training activities.

Furthermore, GAAP research findings underscore the importance of recognizing the heterogeneity of women in communities where activities take place. Age and marital status influence both men's and women's ability to participate in activities, make decisions, and adopt new activities. The E-HFP project in Burkina Faso understood these differences and took advantage of them to experiment with the most effective way to promote behavior change. The project chose two distinct groups to deliver agriculture and improved nutrition practices to beneficiaries: groups of influential older women leaders, known as OWLs, and village farm leaders, made up of both men and women leaders. This counseling introduced a new form of interaction among village women.

Women's and men's social networks differ in composition and formation

Social networks serve many purposes. Networks can disseminate new information about technology, provide social and business connections, and improve men's and women's resilience to shocks, such as when they can rely on kinship or friendship networks to provide support. Networks are developed and maintained through interaction between people at trainings, meetings, church, social gatherings, and increasingly using mobile phones or other mobile technologies.

Women's and men's social networks differ because of gender differences that limit or facilitate their ability to interact with others. For example women's limited time or restricted mobility reduces their ability to attend trade and agricultural fairs and meet new input suppliers, seed providers, or buyers and traders. This means that men and women may have different information channels for learning about new technologies that could improve their agricultural production.

Research from the CSISA project upholds this: men and women were found to have different social networks, overlapping in only 5 percent of cases for their agricultural contacts. And the differences were not just by gender, but also wealth. Poor women co-heads (in households headed by men) were found to have significantly larger networks than poor men who are heads of households. However the

composition of their different networks positions them differently. Although smaller in size, men's networks were made up of wealthier and more progressive farmers, meaning men were more likely to be connected to information about new technologies. Women's networks in contrast, although larger, were composed of households less likely to adopt new technologies (Magnan et al. 2013).

The importance of these networks for designing interventions becomes clear when examining the results of the HarvestPlus project. Dissemination of OSP vines was conducted through farmer groups made up of mostly or only women. Research found that targeting households with dense networks, that is households that are neighbors of many households, seemed to have an impact on the likelihood of farmers who were not members of the participating farmer groups to adopt OSP.

There remains a significant amount of research still to be done to understand how to harness the differences in the composition and density of men's and women's networks for service delivery. Specifically targeting women's networks, because they may have fewer agricultural contacts to begin with, may be one way. Identifying influential leaders in women's networks, as the discussion above about OWLs in Burkina Faso indicated, may be another avenue to pursue. Similarly, increasing the number of women in extension services may also help to tap into women's social networks. Although the research did not point to any one strategy, what is clear is that examining and understanding the gendered differences in networks is necessary for identifying possible entry points for delivering services that can improve the return on men's and women's assets.

Women's groups can help facilitate asset accumulation

There are many different kinds of groups. They range from funeral societies and church organizations to farmer associations and village savings and loans groups. Depending on the kind of group, its purpose will be different. Many offer opportunities for economies of scale. For example, farmer groups allow individual men or women farmers to collectively purchase inputs or market their produce. They also serve as vehicles for delivering training and extension messages. Participating in a group also provides additional intangible benefits to individuals. Working in a group can improve one's confidence, bargaining power, and control over resources. For example, the mid-term evaluation of SDVCP reported that the group approach that was being used had contributed to building the confidence of the women who were members of those groups.

Similar to social networks, men and women participate in different kinds of groups, sometimes because of gender-based

constraints that exclude them from becoming a member of some organizations. For example, membership requirements for entrance into farmer groups or other professional associations create structural barriers to women's participation. Where ownership of land is a requirement to belong to a farmer group, women who only have use rights to land may be barred from joining. Furthermore the composition of groups sometimes makes it more difficult for men or women to participate fully. When women are able to become members of mixed-sex groups, limitations on their ability to speak in front of men can impact how well they are able to benefit from their membership. Research in Honduras found that women expressed a preference for training with other women because men dominate discussions there (Colverson 1995).

In Bangladesh, single-sex groups, specifically women's groups, have been found to be a vehicle for increasing women's asset accumulation. The producer groups in SDVCP were used for training on improved practices for caring for dairy cows and as a means for women to collectively save money. Some of those groups subsequently used the savings to purchase dairy cows in the group's name, indicating that social capital has helped catalyze the accumulation of livestock capital. Similarly, in a program disseminating technologies related to vegetable gardens and private fishponds, Kumar and Quisumbing (2011) found that areas where technologies were disseminated via women's groups increased women's assets relative to men's more than when technologies were disseminated to households, where they ended up being controlled by men.

Women's groups are not, however, a panacea for building and strengthening women's assets. Single-sex groups create a space where women can work together to identify solutions to common constraints, develop leadership skills, and in some cases accumulate assets. However, these groups also risk reinforcing inequalities in access to resources between men and women. Mixed groups have the advantage of allowing women to overcome their own resource limitations by tapping into men's networks, resources, and information. In SDVCP, several of the women's producer groups strategically chose male members to join the group in order to compensate for skills the group did not otherwise have. For example, they chose a husband of one of the members, who is literate and numerate, to participate. Projects should consider how single- or mixed-sex groups can be used strategically to meet specific objectives, recognizing that different kinds of groups can be helpful in meeting different goals.

RESEARCH FINDING #4 ACTION ITEMS

1. Target both men and women for training and extension activities
2. Target different kinds of women to deliver extension messages, strengthen training, and build new interactions among women
3. Examine differences in men's and women's networks to identify possible entry points for delivering services that can improve the return on men's and women's assets

Research Finding #5: The choice and design of new technology affects adoption by men and women

Equipment and machinery can relieve the labor- and time-intensiveness of many agricultural activities. Technology can also improve the quantity and quality of products through innovations that improve varieties, increase productivity, and reduce harvest and post-harvest losses. Irrigation, for example, can have a significant positive impact on farms: farmers can make use of more land, plant more crops per year, and reap higher yields while reducing vulnerability to climate variability. Technologies are often thought to be gender neutral; that is, the technology is not any more likely to be more suited to or adopted by a man than by a woman. Technology is just technology.

However this is not quite true. Technologies can be designed, marketed, sold, and disseminated in ways that make them more attractive, affordable, or suitable to men and women depending on their different land, incomes, and livelihood strategies. Innovation can be targeted to activities that are primarily under the responsibility of women, such as innovations in planting, weeding, or harvesting. They can also be designed to be more suited for small plots of land under women's control. Research from GAAP and elsewhere contributes to the evidence that consistently points toward the need to understand the differences in men's and women's needs, preferences, and assets that facilitate or impede their adoption of new technologies. They underscore that the choice and design of technologies affects adoption by men and women.

A range of criteria can be used to assess what activities are candidates for innovation and how to design new technologies to improve adoption by men and women. The examples below describe labor-saving, appropriateness, and cost criteria in either the choice or the design of technology.

In Ghana, attempts to modernize shea butter processing technology focused on improving the extraction efficiency rate of different mechanized kneaders. This process, which is

primarily conducted by women, is time-consuming but surprisingly efficient. Various attempts by engineers to improve the traditional processes that women had developed to knead were rejected by women even though the engineers had managed to design kneaders with high efficiency rates. With the input from women, the engineers designed a mechanized kneader with a balance between efficiency and time that the women liked: a slight decrease in the efficiency of the technology was traded for a 66 percent reduction in women's time spent kneading (Appleton 1995).

Labor-saving technologies are tricky because they often impact women both positively and negatively. This is often the case where technology targets activities that women do either as unpaid family members or as wage workers. The labor-saving technologies promoted by CSISA had this effect: women from better-off households gained when the new technologies were introduced because they had more leisure time, while poorer, landless women lost an important source of income when the tasks for which they were being hired were mechanized.

In Kenya and Tanzania, KickStart promotes the use of human-powered irrigation pumps through marketing, education, and awareness-building activities. Sales data from between 2005 and 2013 show that only 6 percent and 18 percent of pumps were sold to women in Tanzania and Kenya, respectively. Aiming to increase sale among women, KickStart marketed the pumps via women extension workers, sales representatives, and outreach activities including other women. The use of women in these roles was in recognition that, despite their important roles in agriculture, women continue to face con-

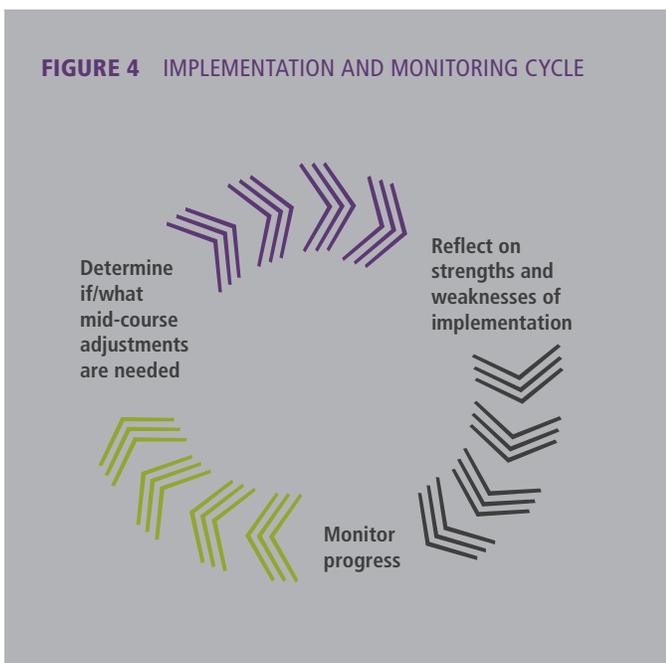
straints in accessing and using technology and might be more inclined to adopt new ideas if presented by other women. Among the different models of the irrigation pump, women preferred the "MoneyMaker Hip Pump" because it was easy to use and had no operational cost. Women also preferred the type of pumping motion it used, which avoided a less culturally appropriate leg motion needed by other models. Other pumps required two people to operate them, making them less attractive for women, who are less able to command the labor of others.

As new varieties of crops are designed and disseminated, researchers are finding that the differences in men's and women's asset portfolios, beyond just land, influence their preferences and ability to adopt improved varieties. Research on the dissemination of hybrid varieties (HBV) of maize in Zimbabwe demonstrates that differences in adoption existed between men and women farmers: women preferred to continue to use the open-pollinated varieties because they have fewer financial assets (including cash and credit) to purchase the certified seed and fertilizer. Furthermore, women were less interested in the HBV maize because they were not well linked to the maize markets where the HBV maize could be sold (Bourdillon et al. 2007). Similarly, the CSISA project promoted mechanization in rice-based cropping systems with equipment and technology that was unsuitable for the size of farms being targeted.

RESEARCH FINDING #5 ACTION ITEMS

1. Consider labor-saving impacts in the choice and design of technology
2. Consider the appropriateness in the choice and design of the technology
3. Consider what other productive or financial resources are needed to adopt the technology

FIGURE 4 IMPLEMENTATION AND MONITORING CYCLE



Addressing gender issues in implementation, monitoring, and mid-course adjustments

Implementation and monitoring are often considered distinct processes that occur between the design and evaluation of a project. We go about implementing activities; parallel to that we collect data to examine the progress of activities against our targets and goals. However monitoring is meant not only to understand how well the intervention has reached its final goals and objectives but to examine the implementation process itself. Throughout implementation, there should be a continual process of reflection and analysis whereby inter-

TABLE 5 HOW TO MONITOR ASSETS

TANGIBLE ASSETS	WHAT TO MONITOR	INTANGIBLE ASSETS	WHAT TO MONITOR
Physical	Use, control, ownership	Social	Density, depth, composition, and formation
Natural	Use, control, ownership	Human	Participation, knowledge, and skills, perception of knowledge acquisition
Financial	Use, control, ownership	Political	Membership in community groups, extent and quality of leadership

Source: Authors' compilation.

ventions use quantitative and qualitative indicators to look for strengths and weaknesses that require further exploration, and whether it is necessary to make any adjustments. That analysis should not wait until the end of the project, but should be done during implementation to determine whether it is necessary to make any adjustments. And then the cycle begins again, the adjustments are implemented, you monitor, you reflect, you decide whether to make adjustments, and so on and so forth (Figure 4).

This process is not different for agricultural development interventions that adopt a gender and asset focus. Practitioners are often skeptical of how quickly changes in gender relations and roles can be achieved. Perhaps this leads them to overlook the importance of examining their monitoring data during implementation. Yet what we learned from GAAP and from evaluating other agricultural development interventions is that change can happen in a short amount of time. And as a practitioner you want to be able to capture those changes, attempt to understand why they are occurring, and adjust if the changes are going in the wrong direction.

Research Finding #6: Accurate measurement of progress requires consistent sex-disaggregated data collection and gender analysis

Sex-disaggregated data is necessary to conduct the monitoring and analysis needed to understand what types of gender-related changes are happening. This means that indicators at the start of the project must be sex-disaggregated and that routine collection of data must also be sex-disaggregated. The data should be collected at the individual level, in addition to data collected at the household level, in order to understand differences and changes in men's and women's asset portfolios.

Different assets are best monitored using different indicators. Monitoring of changes related to tangible assets, like land and livestock, should focus on understanding issues around individual and shared UCO. Other assets, like social networks or knowledge acquisition, need a different set of indicators as outlined in Table 5.

The most necessary aspect of monitoring for interventions with a gender and asset focus is to examine whether, over the life of the project, changes occur in men's and women's

relationship to the assets that are necessary for participating in activities. This is because UCO is variable and interventions can induce changes in the relationship between the targeted assets and the man or woman using those assets. For example in HKI women had access to land to plant vegetables, but those rights are not formalized and therefore potentially insecure in the long-term. One concern is that as the value of the crops grown on this land increases, men may take an interest in the land again and revoke women's use rights. If women no longer had access to this land, it would jeopardize the ability to meet the goals and objectives of the intervention. HKI raised this issue in their midterm report to GAAP, noting also that it would need to identify strategies for supporting women's rights to land ownership, especially to ensure sustained progress once the project ended. This is also true for the REU project where OSP adoption hinged on a complicated relationship between women's decisionmaking and control over land.

Interventions that increase the stock of assets of targeted individuals need to monitor UCO to ensure that the transfer indeed benefits the intended beneficiary, especially if the intervention is targeting women, for example in the Landesa project. In CFPR-TUP, which transferred livestock to women, monitoring whether the transfer was successful was particularly important in the case of cows, because cows are considered a "man's asset." The evaluation found that those assets did remain in the hands of women, a positive outcome suggesting that the gendered rules around ownership can change. However, had the project found during the course of implementation that women were losing control of the cows, it could have chosen to make a mid-course adjustment to help women retain control.

RESEARCH FINDING #6 ACTION ITEMS

1. Understand that successful gender integration in project activities requires on-going attention and capacity building
2. Monitor changes in men's, women's, and shared assets

Research Finding #7: Project activities often have unanticipated consequences on men, women, girls, and boys

Even with the best planning and design, interventions may result in unanticipated consequences, both negative and positive. One reason to ensure you are using your monitoring data effectively is to be able to catch changes that you had not expected. In GAAP there were two areas where changes in the lives of men, women, girls, and boys had some unanticipated consequences: time use and mobility.

Time use

Most agricultural development interventions will impact how time and labor are allocated in farming households. Access to assets can influence how people spend their time. As described earlier, technologies can be designed to intentionally save time. However time use should be carefully monitored during implementation because desired changes in time use may not occur as intended. Both men and women may in fact spend more time in production, processing, or marketing activities when using their assets to achieve greater agricultural productivity. However changes in demands on time must often be weighed against other outcomes.

For example, with the KickStart pump, the time and labor women spent fetching water was significantly reduced, but the time spent for other production-related activities increased. Individual preferences are also important: some women might accept a project that requires more time or money if the result increases income or improves nutrition for themselves and members of their households.

These tradeoffs are present in the dairy value chains. Dairying activities are time-intensive, and the labor requirements, particularly with exotic cows, can be quite high. These demands can increase both men's and women's time requirements, although the consequences of men or women allocating more time to these activities are different. In both MSDDP and SDVCP, the increases in the time women spent caring for cows raised concerns about women's ability to attend to other household chores, including childcare. In both Mozambique and Bangladesh, women and girls are largely responsible for these activities, so when women began to invest more time in dairying activities, the burden of responsibility for those tasks shifted to other women in the household. In particular, young girls were allocating more of their time to domestic work in SDVCP. At the same time, program households were spending less time overall on child rearing. In CFPR-TUP, the increased time spent on dairying activities was perceived more positively, as we will see below.

Mobility

Mobility patterns can both affect and be affected by agricultural development interventions. Men and women have different patterns in space as well as in time. These differences in mobility are sometimes the result of restrictions on where women can travel or the result of other factors, like limited time that would reduce the distance one could travel. In Bangladesh, CFPR-TUP found that the increased time women were spending caring for livestock resulted in their decreased mobility. Qualitative research, however, found that these changes were perceived as positive because working outside the home carried with it a stigma.

In Bangladesh, CARE also expected to attract women into non-traditional positions such as livestock health workers (LHWs). During the midterm review, however, the project found that although the project had successfully targeted women producers (79 percent of the project's producers were women), only 25 percent of the livestock health workers were women, well below the target the project had set (Quisumbing et al. 2013). Interviews with women and men revealed that they had not been able to attract women to become LHWs due to perceptions regarding women's physical security and traveling great distances to attend to clients. Interviews also raised concerns about how in-laws would perceive women working away from home, although the endline quantitative results showed that fewer women in the treatment group reported having to ask permission or facing objections to their going outside the village to seek value chain services. By contrast, CARE decided to build milk collection centers close to the village, which had the positive consequence of accommodating women's mobility restrictions, making it easier for women to sell milk.

Formalization of benefit distribution

In addition to the two areas above, interventions that aim to increase income or the stock of assets should monitor how benefit distribution processes are formalized (such as shifting from distribution of cash to deposits into bank accounts). Earlier in this section, we described the need to monitor how the relationship between men and women, and their relationship with assets, change during project implementation. It is equally important to monitor whether there are changes on UCO in financial assets, like credit or income. Market-oriented activities often establish channels for distributing the proceeds from sales of horticulture crops or milk. These channels may pass through a farmer's group, for example, which makes membership to that group critical to accessing income. Alternatively they may be directly deposited into individual (or joint) bank accounts, into mobile money accounts, or on smart cards. There is an increasing range of digital tools that can be used to securely and privately distribute income to

those who should be paid for their contributions to market activities. And because of the gender dynamics surrounding access and control over income, it is important to monitor whether the channel for benefit distribution being used is successfully reaching its intended beneficiaries, particularly women.

Addressing gender issues in project evaluation

Evaluation is defined as a systematic collection and analysis of information about program and project characteristics and outcomes. The analysis in turn is used to judge how well the program or project achieved its objectives as well as whether it did so effectively, and to inform decisions about current or new programming. In recent years, there has been renewed interest in conducting evaluation. Learning is limited, however, when the foundations for the evaluation have not been well-established, such as when no baseline, whether qualitative or quantitative, has been done against which to compare the achieved results. Without strong evidence of changes that are directly attributable to the project, it is not possible to confidently build on evaluations and scale up the activities.

There are many types of evaluative studies that can be undertaken. Two commonly used at the project level are performance evaluations and impact evaluations. The former involves determining what and how a particular project has achieved and may be done at a mid-point or at the end of the life of the project, or both. Among other questions, it typically looks at issues surrounding the management and operation of the project, how it is perceived and valued by those both connected to the project and by the communities in which it works, and how well it has achieved its objectives. The performance evaluations may use both qualitative and quantitative methods.

Impact evaluations, in contrast, are less concerned with how the project operated but rather what and how much it actually achieved (see also the IFPRI GAAP Toolkit at <http://gaap.ifpri.info/>). They are rigorously structured to allow a comparison between a group that has directly benefited from the project and another group that shares similar characteristics but did not receive the project treatment. The comparison can be tested using either experimental or quasi-experimental methods.

The type of data that will be needed to measure changes in men's and women's asset endowments will vary according to the type of project. In impact evaluations, "[T]here is no 'one size fits all' approach to collecting gender and assets data" (Behrman et al. 2012).

One experimental method using randomized assignment first identifies two communities that are similar on a set of key characteristics except for their participation in the project. Prior to starting the project intervention, each community is randomly assigned either to receive the project treatment or not, with the latter serving as the control. Households that meet the project eligibility criteria are then selected from the treatment and control communities. The evaluation will then compare the outcomes between the two groups of selected households by conducting pre- and post- intervention household surveys and measuring the differences between the treatment and control communities in baseline and endline outcomes. If the randomization was done correctly, the difference between treatment and control communities in the change between endline and baseline outcomes can be attributed to the program. Qualitative methods are used both to inform the survey design and to supplement interpretation of the survey results, helping to provide answers to the "why" as well as the "what." Randomized allocation of the treatment was used to evaluate the impact of introducing vitamin A rich orange-flesh sweet potato varieties in Uganda.

Other methods are used to compare project effects on treatment and non-treatment households when the evaluation is initiated at some time after the project has already started its treatment. In this situation, a popular method is propensity score matching, which creates the comparison group by matching the characteristics of the program participants to nonparticipating households that have similar characteristics, including meeting the criteria for participation in the project intervention. The two groups must be from the same economic environment. The evaluation must also use the same questionnaires with both groups. For example, if a project was designed to improve the nutrition of children under the age of two in households growing sugarcane, then the comparison households that were not participating in the project would also have to have children under two and be growing sugarcane.

What are the key considerations relating to the gender dimensions of asset UCO that should be captured in an impact evaluation? Knowing that the distribution of assets in households and communities are shaped by gender-related factors, the evaluation will want to capture the changes of asset UCO even when gender-related outcomes were not a specific project objective.

Research finding #8: Intangible outcomes resulting from the project may reveal additional benefits to women

If structured to look for them, an evaluation can determine if women have received intangible benefits that are not always explicit objectives of project design. Decisionmaking is one such benefit. Several of the evaluations of GAAP activities revealed some increase in decisionmaking, either over par-

ticular assets or more broadly within the household. The HKI project in Burkina Faso reported more joint decisionmaking with regards to the use and sale of chickens in the beneficiary villages as compared to control villages. In one of the Bangladesh cases, an important outcome of the dairy project was the increased ability of women to work inside their homes as compared to a control group, a positive outcome in an environment that values female seclusion.

Research finding #9: Increasing women's access to assets does not automatically strengthen or increase their control or ownership over those assets

In many cases women are considered to have access to land or other assets, often through husbands, fathers, or groups. However, access or use rights alone do not give women the decisionmaking ability and security that facilitate long-term investments. For that, control or ownership rights are important. HKI facilitated agreements with land owners in beneficiary villages who ceded land to women for the duration of the project, giving them the access they needed to grow vegetables for home consumption and sale. These transfers of land may have an influence on individual or community opinions on women's land ownership, but it has not yet caused any actual increase in women's access to other land at the household or community level (van den Bold et al. 2013). In West Bengal, Landesa's project to put women's names on land titles increased women's perceived tenure security as compared to control households that did not have a woman's name on the title (Santos et al. 2013).

Research finding #10: Transferring assets to the household does not automatically confer ownership rights equally to men and women

Research on intra-household resource allocation has shown that men and women in the same household may or may not pool their resources (Jackson 2005; Quisumbing 2003; Haddad et al. 1997). Findings from the GAAP project support this research by demonstrating that in many households there is a clear division between the assets that men use, control,

and own, and those that women use, control, and own. That is, the household itself does not own an asset; it is owned either individually or jointly by members of the household. As a result, if projects target the household to receive assets, it risks supporting an unequal transfer of assets that follows prevailing social norms about asset ownership. For example, in an area where prevailing social norms support men's land ownership more than women's, transferring land to the household will likely result in the transfer of land to men, unless provisions are made to also confer rights to women.

In Mozambique, cattle are more commonly owned by men. The quantitative survey results found that among the surveyed project households, 43 percent of transferred cattle were owned jointly by men and women, and 52 percent were owned by men. Over the course of the project there were no statistically significant changes in the distribution of ownership within the household (Johnson et al. 2013). Most women were not able to increase their ownership despite having both participated in the trainings on animal care and provided the bulk of the daily labor.

Research finding #11: Increasing women's income does not automatically strengthen or increase their ability to accumulate assets

Many agricultural interventions are successful in increasing women's income, but they often use much of it to meet household consumption needs. Another common use is to pay children's school fees, which is an investment in the human capital of the next generation. But women are not always able to use the income they earn to increase their stock of other productive assets. This becomes problematic if by contrast men are able to use their income to accumulate assets.

Among four of the GAAP activities, only one of the Bangladesh cases provides data to suggest that women are directing the new income they are earning from milk sales toward the purchase of new dairy cows and poultry. Often, "...there are social expectations for women to support their husband's asset accumulation with their additional income, and women's

TABLE 6 MIXED METHODS EVALUATION DESIGN FOR LAND AND LIVESTOCK PROJECTS

MAIN TYPE OF ASSET	LAND	LIVESTOCK		
Project	Landesa	BRAC	CARE-SDVCP	Land O'Lakes
Impact evaluation design	Propensity weighted regressions	Randomized controlled trial	Propensity weighted regressions	Early and late livestock recipients
Quantitative	Baseline and endline surveys; longitudinal			
Qualitative	Focus group discussions and key informant interviews focusing on gender and assets issues			
GAAP contribution	Qual work (FGDs, key informant interviews, life histories); input into quant survey module	Qual work; input into gender and assets modules in endline	Qual work; input into gender and assets modules additional modules for endline	Qual and quant work

control of additional income generated from dairy, and their ability to control household assets, even if purchased from their earnings, remains questionable” (Quisumbing et al. 2013).

In other settings, there is some suggestive evidence that savings groups which provide women with a structured mechanism to regularly save small amounts of cash can promote women’s accumulation of assets when participants also receive capacity building in business development and entrepreneurship. Small pilot programs of this type supported by USAID’s Global Livestock Collaborative Research Support Project in Ethiopia and Ghana achieved some success with this approach in the short run. Women participants reported investing in calf-fattening, goat and sheep trading, poultry raising, cloth dying, and trade in vegetables or consumer goods. In both countries, the program activities were introduced and explained to both men and women, thereby helping to build men’s support for the groups. In Ethiopia, many groups included both men and women members (Rubin et al. 2010). Most women’s resource portfolios nonetheless remained smaller than those of men (Barrett 2008).

A mixed methods approach for working on gender and assets⁶

This section discusses qualitative and quantitative approaches for data collection, analysis, and evaluation to address different dimensions of asset ownership and use.

One of the key findings from the GAAP research was that we need better ways of linking our data sources. That is, we need to understand what methods are best positioned to answer different questions; what kinds of questions can be answered with what type of data; and how we can combine different types of data to understand not only what happened, but why.

⁶ This section draws on some sections of the GAAP toolkit, available at www.gaap.ifpri.info

A mixed methods approach using both qualitative and quantitative data collection tools can be very helpful in understanding these complex situations. Initial qualitative work to understand how households in a particular context define these concepts can help to design a quantitative survey so that it asks the right questions. Quantitative surveys and the resulting data are able to reach large samples with relative ease and to provide information about trends or impacts on a population basis. Qualitative research can also help to interpret survey results and to answer the “why” questions, especially for understanding some issues in specific contexts. Regardless of which tools are used, it is critical to realize that data does not exist in a vacuum. Whether using a quantitative or a qualitative approach, or some combination, the questions one asks should be informed by a theoretical framework or a theory of change.

Tables 6 and 7 show the different types of mixed methods evaluations that were conducted across the set of GAAP

project as an illustration of how both qualitative and quantitative methods can be combined.

Quantitative methods

Quantitative methods make use of mathematical or statistical techniques in order to discern patterns about populations of interest. There are a variety of methods for undertaking quantitative M&E or impact evaluations. Household and individual-level data are typically collected using quantitative household surveys with a standardized questionnaire, typically with fixed coded responses, although some may allow open-ended responses to be coded later. Data for quantitative analyses may include panel data—data collected about the same households or individuals over a number of years—which allow for an analysis of changes over time. Some of the surveys collect data at the level of the individual household member, which allows for comparison between men and women and also helps to capture the full range of livelihood strategies within the household. Sampling to cover the range

TABLE 7 MIXED METHODS EVALUATION DESIGN FOR HUMAN CAPITAL AND AGRICULTURAL EQUIPMENT PROJECTS

MAIN TYPE OF ASSET	HUMAN CAPITAL		AGRICULTURAL EQUIPMENT		
	Project	HKI-EHFP	HarvestPlus	CSISA (IRRI)	CSISA (IFPRI)
Impact evaluation design	Randomized controlled trial	Randomized controlled trial		Auction for laser land leveling services (willingness to pay)	Early vs. late pump buyers
Quantitative	Baseline and endline surveys; longitudinal				
Qualitative	Focus group discussions and key informant interviews focusing on gender and assets issues				
GAAP contribution	Qual work; input into gender and assets modules	Qual work; input into gender and assets modules	Qual and quant work	Funding for analysis time to focus on social networks	Qual work

TABLE 8 BENEFITS AND CHALLENGES OF USING QUANTITATIVE METHODS

BENEFITS	CHALLENGES
<p>REPRESENTATIVENESS: Large sample sizes ensure that data will be more representative of the populations in question.</p> <p>CAUSATION: Econometric methods allow you to test scenarios and attribute causality, and estimate impacts to better understand which aspects of programs are more effective, although this requires good data.</p> <p>ABILITY TO USE EXISTING DATA: Some data of sufficient quality is already publicly available in censuses and other databases making it possible to conduct analysis without collecting new data.</p>	<p>ESTABLISHING CONTEXT: With quantitative data it is more difficult to understand nuances of a given culture and context, leading to more general observations.</p> <p>QUALITY OF DATA: Available data may not be of sufficient quality to conduct gender analysis.</p>

Adapted from: Behrman et al. 2012

of wealth or poverty categories, as well as other types of social statuses or categories such as age, education, marital status, ethnicity, religion, headship, and household size, is critical for these types of surveys. Although some qualitative data is included in the quantitative surveys, researchers analyze most survey data—including qualitative responses—using statistical or econometric techniques in statistics packages such as SPSS, Stata, or SAS.

Qualitative methods

Qualitative data is also an important aspect of gender-assets research, bringing to light dimensions of the issue that are difficult to capture with statistics or surveys. To thoroughly understand gender relations, researchers must also examine additional aspects of well-being, such as status, self-esteem, empowerment (or disempowerment), vulnerability, issues of social differentiation, social norms, and, most importantly, self-perceptions by individuals and communities of what it means to be a man or a woman in a given society. Qualitative data usually draws from a smaller sample of people and thus can be more subjective and difficult to draw out general patterns. The benefits and challenges of this method are highlighted below.

As noted above, attention to gender and assets benefits greatly from a mixed methods approach, especially one that allows for a sequencing and interaction among methods. Qualitative exploration can inform the construction of quantitative surveys, and survey results can be further questioned on the “hows” and “whys” through the use of open-ended interviews and focus group discussions.

Ultimately, understanding the patterns of asset accumulation among men and women will help in the design of agricultural development interventions that raise income, improve nutrition, and achieve greater well-being for all members of the household.

Tools for data collection in the diagnosis and design phases

Key informant interviews

Key informant interviews are open-ended, to allow for wide-ranging exploration of a topic, but can also include structured and semi-structured questions. They are conducted with key informants who are well-informed and willing to speak with you about the topics you want to learn about. They may be able to represent a larger group about a particular topic or they may be a person whose views are influential in a group, whether the family, the community, or on the national scene. Often the key informants are the gatekeepers to other people or to other sources of information among those who are knowledgeable on the topic you are studying.

Beware of sample bias in your key informants. It can be very easy to speak to those who are most easily reachable, and miss those who are not on the main roads or in the largest and best-known institutions. While many men are capable of speaking knowledgeably for and about women, it is critically important to include women among the key informants and let them both speak for themselves and speak about men. In the same way, be sure to include informants of both higher and lower status, different ethnic or religious groups, and different generations to ensure that you are getting information that reflects diversity among the group.

Group interviews

These larger interviews are a good way to get information from a larger number of people and in a shorter time than is possible with key informant interviews. The interview schedules are likely to be more targeted and focused. While all members are encouraged to participate and to respond to each question, this can be hard to manage. The group interview schedule can employ different types of questions, just as in a key informant interview (above). Group interviews composed of about 15 people are quite manageable. It will be important to have identified in your background research and

TABLE 9 BENEFITS AND CHALLENGES OF USING QUALITATIVE METHODS

BENEFITS	CHALLENGES
<ul style="list-style-type: none"> • Allows for flexibility to ask about interesting or emerging lines of inquiry • Explores the “why” and the meaning of behaviors and beliefs • Permits respondents to express their views in their own words 	<ul style="list-style-type: none"> • Methods can be time and training intensive, leading to higher costs • Collected data is complex and difficult to summarize or generalize

Adapted from: Behrman et al. 2012

initial appraisals whether or not to conduct group interviews in single-sex groups or in mixed groups. If the topics to be discussed are somewhat sensitive, then be sure to find out if it is appropriate to use a man to interview a group of women, or vice versa.

Group discussions are very helpful for drilling down into the diversity of views within a group, such as about the range in women’s ability to own land, how they obtained their land, and what rights they have over the land.

Focus group discussions

Focus group discussions are a specific type of group interview. They typically are used to test a finding or position within a group. The discussion is organized around a set of three questions:

1. What are your **experiences** with the topic [such as land ownership]?
2. What are the **challenges** to changing peoples’ attitudes toward the topic?
3. What **actions** can be taken [such as to increase women’s land ownership]?

Focus group discussions are very useful for identifying possible project design issues as well as for monitoring the progress of a project and deciding if mid-course corrections are needed.

Final note on process

The GAAP activities resulted in more than research findings; it also revealed a number of lessons about how to strengthen the project cycle itself. Some of these recommendations may be familiar to you, but they are lessons worth repeating and are important for practitioners and researchers alike.

1. **Do not underestimate the importance or the difficulty of qualitative research.** As discussed above, a mixed methods approach is the optimal avenue for making sure that projects are able to understand not only what happened, but why it happened. Qualitative research is often underfunded and poorly staffed, leading to weak and confusing results. Yet, in some respects it is often more difficult

to navigate and, like quantitative research, requires skilled individuals to ensure quality and consistent results.

2. **Partnerships require trust and understanding.** In this case, GAAP required the collaboration of the implementing organization and the GAAP team. Mutual understanding and trust was important because in some cases, the GAAP research findings challenged the implementation of projects. Being open to learning from mistakes and willing to make mid-course adjustments was a critical element of successful partnerships.

3. **Working collaboratively may require building the skills of partners.** Not all implementing agencies have the required skill set to adopt a gender and asset lens or to be able to include an impact evaluation in their work. When greater attention to gender is desirable, or when an impact evaluation is planned, partners need to find ways of filling these gaps. In this case GAAP provided capacity-building to partners to strengthen their M&E capabilities. Additionally, GAAP was reminded that partnerships often require greater investments of time. They do not operate well with a “take the data and run” approach that leaves implementing organizations without the skills or knowledge to process the findings and make better choices the next time.

GLOSSARY

ASSET	<i>The stock of all resources that a person uses, controls, or owns constitute his or her assets. They are stores of value that may increase or decrease over time and may also create new value (such as by generating income). Assets may be liquid or illiquid, tangible or intangible, internally-embodied or externally-embodied. The term “asset” and “capital” are often used interchangeably. See also the GAAP toolkit at gaap.ifpri.info</i>
GENDER	<i>The set of socially constructed roles, behaviors, responsibilities, and attributes a society considers appropriate for girls, boys, men, and women. In some countries, additional categories are identified. The concept of gender encompasses economic, social, political, and cultural attributes and opportunities as well as roles and responsibilities. Gender is defined differently around the world and those definitions change over time.</i>
GENDER ANALYSIS	<i>Socio-economic methodologies that identify and interpret the consequences of gender differences and relations for achieving development objectives as well as the implications of development interventions for changing relations of power between women and men. It describes the process of collecting sex-disaggregated data and other qualitative and quantitative information on gender issues, including access to and control over assets (tangible and intangible), as well as beliefs, practices, and legal frameworks, and then analyzing that data. An examination of gender disparities, differences, and relationships cannot be isolated from the broader social context. There are many methodologies available for conducting gender analyses.</i>
GENDER-BASED CONSTRAINT	<i>Restrictions on men’s or women’s access to resources or opportunities that are based on their gender roles or responsibilities. The term encompasses both the measurable inequalities that are reviewed by sex-disaggregated data collection and gender analysis as well as the factors that contribute to a specific condition of gender inequality.</i>
GENDER DISPARITY	<i>Measurable differences in the relative conditions between men and women, especially (but not only) as they relate to the ability to engage in economic or political opportunities. These include such things as illiteracy rates, levels of land ownership, or access to finance.</i>
GENDER EQUITY	<i>Fairness in representation, participation, and benefits afforded to men and women. Gender equity strategies are seen as processes used to achieve gender equality. The goal is that both groups have a fair chance of having their needs met and each has equal access to opportunities for realizing their full potential as human beings.</i>
GENDER EQUALITY	<i>The ability of men and women to have equal opportunities and life chances. Since gender roles (see below) change over time, development programming can have an impact on gender equality, either supporting it or inhibiting it.</i>
GENDER GAP	<i>The measurable difference between men’s and women’s conditions. This can be in the amount of income, political representation, level of education reached, or ownership of productive assets, among others.</i>
GENDER RELATIONS	<i>One type of social relations between men and women which are constructed and reinforced by social institutions. They include the routine ways in which men and women interact with each other in social institutions: in sexual relationships, friendships, workplaces, and different sectors of the economy. Gender relations are socially determined, culturally based, and historically specific. They are mediated by other identities including ethnicity, religion, class, and age. Gender relations are shaped and reinforced by cultural, political, and economic institutions including the household, legal and governance structures, markets, and religion. Gender relations are dynamic and change over time.</i>
GENDER ROLES	<i>The behaviors, tasks, and responsibilities that are considered appropriate for women and men as a result of socio-cultural norms and beliefs. Gender roles are usually learned in childhood. Gender roles change over time, through individual choices or as a result of social or political changes emerging from changed opportunities (more education, different economic environment) or times of social upheaval (during disasters, in war, and in post-conflict situations).</i>
SEX	<i>Biological characteristics that distinguish males and females.</i>
SEX-DISAGGREGATED	<i>Collection of data by sex into categories of males and females. Sex-disaggregated data collection allows for valid cross-country comparisons, since sex categories are the same from one country to another.</i>
VALUE CHAIN	<i>The full sequence of activities (functions) that are required to bring a product or service from conception, through the intermediary of production, transformation, marketing, and delivery to final consumers. A value chain can also include the final disposal after use.</i>

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