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Gender, Assets, and Agricultural Development Programs

A Conceptual Framework

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ABSTRACT

Being able to access, control, and own productive assets such as land, labor, finance, and social capital enables people to create stable and productive lives. Yet relatively little is known about how agricultural development programs can most effectively deliver these outcomes of well-being, empowerment, and higher income in a way that acknowledges differential access to and control over assets by men and women. After reviewing the literature on gender and assets, this paper offers a conceptual framework for understanding the gendered pathways through which asset accumulation occurs, including attention to not only men's and women's assets but also those they share in joint control and ownership. Unlike previous frameworks, this model depicts the gendered dimensions of each component of the pathway in recognition of the evidence that men and women not only control, own, or dispose of assets in different ways, but also access, control, and own different kinds of assets. The framework generates gender-specific hypotheses that can be tested empirically: i) Different types of assets enable different livelihoods, with a greater stock and diversity of assets being associated with more diverse livelihoods and better well-being outcomes; ii) Men and women use different types of assets to cope with different types of shocks; iii) Interventions that increase men's and women's stock of a particular asset improve the bargaining power of the individual(s) who control that asset; and iv) Interventions and policies that reduce the gender gap in assets are better able to achieve development outcomes related to food security, health, and nutrition and other aspects of well-being related to agency and empowerment. The implications of these gender differences for designing agricultural development interventions to increase asset growth and returns to assets as well as for value chain development are discussed. Based on this analysis, additional gaps in knowledge and possible investigations to address them are identified.

Keywords: assets, agricultural development, conceptual frameworks, food security, gender, intrahousehold, livelihoods, welfare

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A Conceptual Framework

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1. INTRODUCTION

Access to, control over, and ownership of assets are critical components of well-being (Sherraden 1991; Carter and Barrett 2006). Productive assets can generate products or services that can be consumed or sold to generate income. Assets are also stores of wealth that can increase (or decrease) in value. Assets can act as collateral and facilitate access to credit and financial services as well as increase social status. Flexibility of assets to serve multiple functions provides both security through emergencies and opportunities in periods of growth (Deere and Doss 2006). In their study of “voices of the poor,” Narayan et al. (2000: 5) found that “the poor rarely speak of income, but focus instead on managing assets—physical, human, social and environmental—as a way to cope with their vulnerability.” Access to, control over, and ownership of assets including land and livestock, homes and equipment, and other resources enable people to create stable and productive lives. Increasing the nexus of control over assets also potentially enables more permanent pathways out of poverty compared to measures that aim to increase incomes or consumption alone.

Similar to typical measures of income and consumption, not only are assets unequally distributed between rich and poor, they are also unequally distributed between men and women, nationally as well as within communities and households (Deere and Doss 2006; Deere and Diaz 2011; Swaminathan, Suchitra, and Lahoti 2011). A growing empirical literature from both developed and developing countries shows that distribution of these assets within the household is critical to household and individual well-being, as measured by outcomes such as food security, nutrition, and education (Deere and Doss 2006; Quisumbing 2003). Thus, an understanding of the gendered nature of asset distribution and how this influences individual and household livelihoods is essential to designing effective development policies and interventions.

Agricultural development programs are increasingly expected to deliver income, nutrition, food security, and empowerment outcomes as well as agricultural growth, yet relatively little is known about how they affect or are affected by differential access to and control over assets by men and women. Sabates-Wheeler’s (2006) review of the relationship between ownership and control over tangible assets such as land, livestock, and machinery and the patterns of agricultural growth concluded that the combination of asset inequality and market failure has a negative impact on growth, and that inequalities tend to reproduce inequalities. This suggests that without specific attention to addressing asset

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inequalities, interventions that promote agricultural growth are likely to reinforce inequalities, which could ultimately undermine their poverty and equity objectives.

This paper explores the potential linkages between gender, assets, and agricultural development projects and aims at gaining a better understanding of how agricultural development interventions are likely to (positively or negatively) impact the gendered distribution of assets. The next section briefly summarizes the literature on gender and assets. Section 3 presents a conceptual framework for identifying the linkages between the gendered distribution of assets and various livelihood strategies, shocks, and well-being. Section 4 looks at the implications of the framework for agricultural development interventions to identify issues concerning gender and assets that are relevant to the intervention, how these issues might be addressed, and what kind of information would be needed to be able to fully assess the impact of the project on the gender-asset gap. The final section summarizes the preceding discussion, identifies gaps in knowledge, and proposes next steps.

2. ASSETS, INEQUALITIES AND THE GENDER-ASSET GAP

Households and individuals hold and invest in different types of assets, including tangible assets such as land, livestock, and machinery, as well as intangible assets such as education and social relationships. These different forms of asset holdings have been categorized as

- **natural resource capital:** land, water, trees, genetic resources, soil fertility;
- **physical capital:** 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; and
- **political capital:** citizenship, enfranchisement, and effective participation in governance.²

As Bebbington (1999) argues, people's livelihoods are based on a range of assets, income sources, and products, as well as interactions with labor markets. Assets are, however, not just a means through which people earn a living; they also give meaning to people's lives (Bebbington 1999). They are not only resources that people use in building their livelihoods; assets give individuals the capability to be and to act. Bebbington's framework of Capitals and Capabilities treats assets as "vehicles for instrumental action (making a living), hermeneutic action (making

² Many discussions of asset portfolios (for example, Bebbington 1999; DfID 2001) only refer to the first five types of assets. For more on the inclusion of political capital see Bauman 2005.

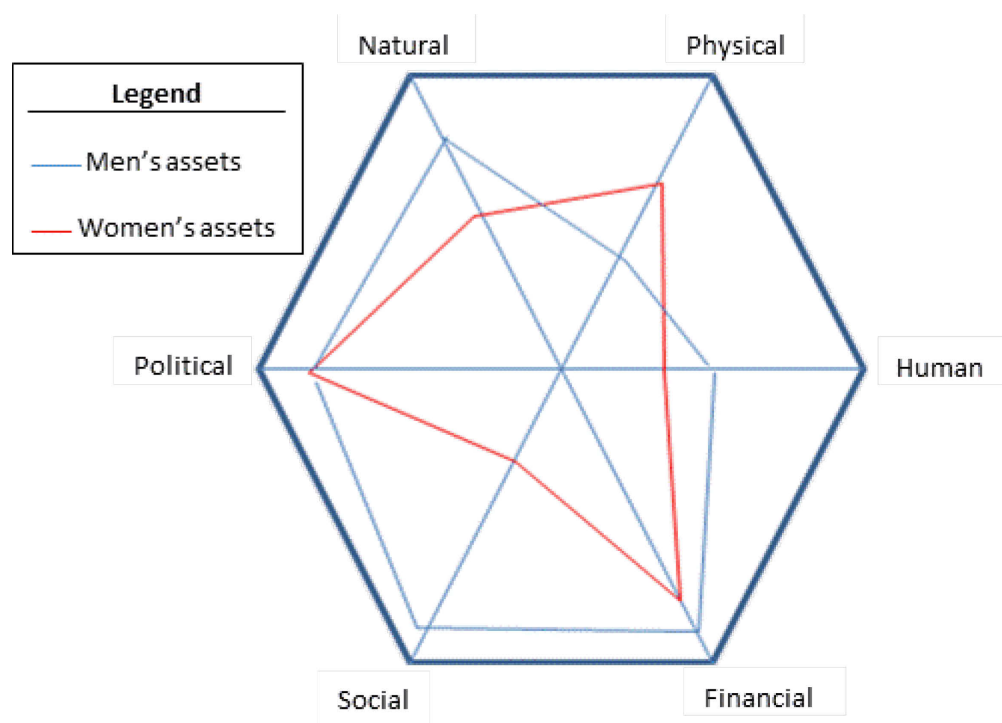
living meaningful) and emancipatory action (challenging the structures under which one makes a living)” (Bebbington 1999: 2022).

There is now substantial evidence to contradict the still-common assumption made in economics (and many development projects) that households are groups of individuals who have the same preferences and fully pool their resources. This unitary model has been rejected in both developed and developing countries, with important implications for policy (Strauss and Thomas 1995; Haddad et al. 1997; Behrman 1997). An alternative, the collective model, allows for differences of opinion regarding economic and other decisions among household members. Under the collective model, when there is a disagreement, its resolution may depend on the bargaining power of individuals within the household (Manser and Brown 1980; McElroy and Horney 1981). One of the determinants of the bargaining power of individuals is the ownership and the nexus of control over assets. As previously mentioned, research shows that within households, assets are not always pooled, but rather can be held individually by men, women, and children (Haddad et al. 1997). Who within a household has access to which resources and for what purposes is conditioned both by the broader sociocultural context as well as by intrahousehold allocation rules. Different types of assets may also have different implications for bargaining power or well-being within the household. In societies as diverse as Ethiopia and Indonesia, assets that women bring to marriage are associated with what they can take upon divorce and their bargaining power within the household (Fafchamps and Quisumbing 2002; Thomas, Frankenberg, and Contreras 2002); in India, ownership of a house is associated with lower incidence of domestic violence against women (Panda and Agarwal 2005).

Figure 1 provides a conceptual illustration of the “gender gap” in asset allocation. The graph illustratively plots the extent of men’s and women’s control over assets in each of these types of “capital” (ignoring, for the moment, the fact that each of these types of assets are multidimensional in themselves, and consequently collapsing any one dimension into a single index would be extremely problematic). A third line could be used to map joint assets.

The graphical depiction suggests, and empirical evidence supports, that men and women own different types of assets. For example, in the rural Philippines, women may have higher average education levels, while men on average own greater areas of land (Quisumbing, Estudillo, and Otsuka 2004). According to Antonopoulos and Floro (2005), Thai women were more likely to own jewelry while men were more likely to own transport vehicles. Examining patterns of livestock ownership by men and women, Kristjanson et al. (2010) found that women were more likely to own small livestock such as poultry and goats while men were more likely to own large livestock such as cattle and buffaloes.

Figure 1: Illustration of hypothetical gender asset gap



Source: Authors.

While women may have greater ownership of certain types of assets as compared to men, a growing body of empirical evidence shows that women typically have fewer overall assets than men. For example, in a statewide representative sample in Karnataka, India, Swaminathan, Suchitra, and Lahoti (2011) found that for all major asset categories except jewelry, women were less likely to own assets. Furthermore, women's share of the total value of assets was lower than their share among asset owners, indicating that even when women own assets, they are often of lower quality and value than men's assets. Similarly, Antonopoulos and Floro (2005) found that in Thailand men's assets were on average worth more than those of women. Likewise, Quisumbing and Maluccio (2003) found that husbands brought greater wealth to marriage than wives in Bangladesh, Indonesia, Ethiopia, and South Africa. Men accounted for a larger proportion of property owners and owned more land in Brazil, Nicaragua, Mexico, and Paraguay (Deere and Leon 2003), while men owned more assets than women in Ghana, Kenya, Northern Nigeria, Mexico, and urban Guatemala (see the survey of the literature documenting gender-asset gaps in Deere and Doss 2006). In formal education, many countries still have a large gender-schooling gap. In countries such as Ghana, Uganda, Cambodia, India, Guinea, Bolivia, and Iraq, men still have on average at least one more year of schooling than women, while others such as Rwanda, Kenya, Palestine, and China show average gaps in the range of 0.6 to 0.8 years of schooling (Hausmann, Tyson, and Zahidi 2010).

Increasing women's access to assets and narrowing the gender-asset gap would directly improve women's wellbeing by reducing their vulnerability and

enhancing their health, self-esteem, and sense of control. It could also lead to improved outcomes for a range of development indicators not only for women but also for their families and communities. Increasing women's control over assets, including land, physical, and financial assets, has positive effects on a number of important development outcomes for the household, including food security, child nutrition, and education, as well as for women's own well-being and empowerment (Kabeer 2010; Quisumbing 2003; Smith 2003; World Bank 2001).³ For example, the greater a woman's asset holdings at marriage, the larger the share the household spends on children's education (Quisumbing and Maluccio 2003). In Bangladesh, a higher share of women's assets is associated with better health outcomes for girls (Hallman 2000). A study by Smith and Haddad (2000) using cross-country nationally representative data found that increases in women's education (investment in human capital) have made the greatest contribution to reducing the rate of child malnutrition, responsible for 43 percent of the total reduction. In addition, research on gender differences in human capital since the 1990s has repeatedly shown that gender inequality in education reduces national per capita income growth (Dollar and Gatti 1999; Abu-Ghaida and Klasen 2004). Recent research on gender disparities in education, employment, economic opportunities, and political participation are consistent with these findings (Hausmann, Tyson, and Zahidi 2010; Klasen and Lamanna 2008); gender inequalities are associated with lower growth, and with higher levels of hunger (von Grebmer et al. 2009). The United Nations estimates that every year of schooling has potential to increase a girl's individual earning power by 10 to 20 percent, while the return on secondary education is even higher, at 15 to 25 percent (United Nations Foundation n.d.).

These and other studies make a convincing case that closing the gap between men's and women's ownership of assets is not only important for women's empowerment and well-being but is also a necessary step towards achieving global development goals. As explained by Doss, Grown, and Deere (2008: 3):

The gender asset gap arguably provides a much firmer basis for understanding gender economic inequality and women's empowerment than just a focus on income or wages and may be a more powerful indicator of progress than others toward Millennium Development Goal 3 (Promoting gender equality and empowering women). Besides being a measure of opportunities (that is, through the ability to generate income or additional wealth) or outcomes (net wealth), ownership of assets is critically important to women's bargaining power and hence their economic empowerment.

The goal of gender-responsive development is not to ensure that men and women have equal control over all assets, but that both have control over important assets that they can use to improve livelihoods, well-being, and bargaining power within their households and communities. In order to reduce the gender gap, it is important to consider what it means to have control over an asset as well as how men and women accumulate assets.

³ Note: In this document, the terms assets and capital are used almost interchangeably, depending on the particular literature.

Assets differ in the extent to which they are tied to an individual or are shared within the household, community, or society. For example, human capital is tied to an individual, as are individual savings accounts and some other assets, such as personal trust networks or jewelry. Other assets, notably land, may be held by an individual, a couple, an extended family, or even a whole community, in the case of common property, as well as by a trust, a corporation, or the state. Some assets like roads are shared with the broader public. It may also be the case that even for individually held assets, others in the household or community may exert claims over the asset, as when a family pressures a woman to pawn or sell her jewelry to pay off jointly held debts.

A simple examination of “ownership,” where an individual either owns an asset or does not, is often misleading, especially for asset types like natural capital. We thus focus on different types of rights and “bundles of rights” that individuals or groups may have over assets. While there are many types of rights, they are commonly grouped as “use or access” rights, for example, the right to live in a house, fish in a lake, or milk a cow, and “control or decisionmaking” rights, such as the right to decide what crops to plant, whether to fence a yard or sell a piece of jewelry and use the money for a daughter’s education (Schlager and Ostrom 1992; Meinzen-Dick, Pradhan and Gregorio 2004). The degree of security that people have over their rights is also important to consider (Place, Roth, and Hazell 1994). Rights may be claimed based on statutory, customary, or religious law, as well as other normative frameworks. To understand the interaction of these different frameworks, it is important to adopt a legal pluralistic perspective (Meinzen-Dick and Pradhan 2002).

Men and women may also acquire assets differently. In Sub-Saharan Africa, men often acquire use and certain management rights over land through inheritance or allocation by their clan or lineage, whereas marriage is the most common way for women to gain access to land (Lastarria-Cornhiel 1997). In this case, women’s rights to land may be either use rights or permanent rights. In Latin America women become landowners mainly through inheritance while men are much more likely to acquire land through purchases in land markets (Doss et al. 2008). There are also varying levels of knowledge on the gendered patterns of asset ownership with relatively more knowledge surrounding physical and tangible assets and education compared to other nontangible assets. Therefore, not only have gendered asset inequalities and their impacts been documented, but there is also evidence pointing to nuanced gendered differences in the exclusivity of asset ownership, bundles of rights, and acquisition.

3. OVERVIEW OF THE GAAP CONCEPTUAL FRAMEWORK

In spite of the recognized importance of assets, few development interventions explicitly consider either how assets precondition men’s and women’s participation in their programs or what impacts projects have on men’s and women’s assets. This omission points to critical gaps in basic research about the extent and consequences of the gender gap in assets, how different types of assets are accumulated by men and women during the different phases of their lives, and which mechanisms best strengthen women’s access to productive assets in what contexts. Although many programs aim to increase women’s asset ownership, very

few have documented successful and sustained ability to reduce the asset gap between men and women. In some cases, while women may accumulate assets, men may acquire them at a faster rate, or even take over the control of women's assets, thereby worsening the gender asset gap.

3.1 Existing conceptual frameworks

The conceptual framework presented here (Figure 2) draws from several other efforts to articulate the critical relationships between assets and poverty, notably the Sustainable Livelihoods (SL) framework (Carney et al. 1999; DfID 2001; Scoones 2009), the Capitals and Capabilities Framework (Bebbington 1999), as well as other work on poverty traps (Carter and Barrett 2006; Barrett and Swallow 2006), and pathways from poverty (IFPRI 2003). However, none of these approaches is explicitly gendered, and applying a "gender lens" to each reveals enough shortcomings to warrant a new framework that examines assets and livelihoods from a gendered perspective.

The SL framework, which is widely used by many researchers and development organizations, has helped to promote attention to the linkages among various types of assets, and how they contribute to diverse livelihoods activities and poverty reduction. A key feature of the SL framework is that it recognizes people themselves, whether poor or not, as actors with assets and capabilities who act in pursuit of their own livelihood goals. Although the original statement of the SL framework is not gendered, this framework is particularly important for highlighting women's agency, so that they are not seen as passive beneficiaries or victims of circumstances. The framework also draws attention to the importance of a vulnerability context, which might be different for men and women. While the SL framework does not, in itself, immediately generate testable hypotheses, it provides a starting point for more specific theoretical modeling in order to derive researchable questions and testable hypotheses (Adato and Meinzen-Dick 2007). In addition, gendering the framework is especially useful for examining the role of different types of "capitals" (assets) in men's and women's livelihood strategies, and how these strategies play out in household and community livelihoods.

Bebbington's (1999) Capitals and Capabilities framework assumes people build their livelihoods around access to different resources (depending on which are most relevant for the livelihoods they wish to pursue), the different opportunities that exist to turn these resources into sources of livelihood enhancement, availability of the means to enhance the way in which the resources contribute to their livelihoods, and finally the use of various networks to gain access to these resources. Bebbington argues that when or where rural people have not been able to improve their livelihoods, the principal reasons seem to derive from a failure or inability to defend their existing assets, failure to identify and secure opportunities to turn assets into livelihoods, failure to protect existing ways of turning assets into livelihoods (for example, by losing a place in a market), or failure to convert one asset into a form that may contribute to livelihoods more directly.⁴ One can

⁴ For example, if factor markets are imperfect, a farmer may not be able to sell a (small) plot of land to buy a tractor that makes it easier to work the rest of the land. Women's assets may be so bound together with household assets that she would not be able to liquidate a portion of these to finance a small business. (We thank a reviewer for this suggestion.)

conjecture that given the limitations in access and control of assets by women they would be less likely to turn these assets into livelihood opportunities, especially if they do not own or manage them.

While the SL frameworks and Bebbington emphasize how assets enable positive outcomes, the literature on poverty traps (Carter and Barrett 2006; Barrett and Swallow 2006) shows how a lack of assets perpetuates chronic poverty. It posits a range of strategies or activities that map a stock of assets into flows of welfare, but the choices of strategies are shaped by preferences and options that are constrained by the assets one controls and the entry barriers for high-return strategies. Although their analyses are not explicitly gendered, Carter and Barrett (2006) suggest that poverty traps can exist at multiple levels—macro, meso, and micro—with linkages between the levels. While not dealing with intrahousehold issues, their examination of multiple scales of assets and action could also be extended to the individual within the household.⁵

The conceptual framework of the “Pathways from Poverty” research program at the International Food Policy Research Institute highlights the importance of three components: (1) settings, (2) assets and (3) activities (IFPRI 2003). In this framework, men, women, and children within households hold an endowment of assets that they allocate to diverse activities. How household members allocate these assets to various activities depends on the settings in which these households live, which includes rules regarding the allocation of rights, resources, and responsibilities between men and women, which are themselves a function of culture and context.⁶ These resource allocations result in a range of outcomes, which include both monetary and nonmonetary measures of well-being. Income and consumption are obviously related to each other, but because part of incomes can be saved rather than consumed, such decisions to save can lead to changes in households’ and individuals’ stocks of assets. Aside from economic measures such as income, consumption, and assets, outcomes of household (and intrahousehold) allocation decisions may also result in gains in other aspects of well-being such as reduced vulnerability, empowerment and improvements in health, self-esteem, and sense of control.

While each of these frameworks is useful, none (except the Pathways from Poverty framework) has been explicitly gendered. The frameworks may be applied to a household as a whole or to individuals, but do not capture the complexity of both individual and shared assets, decisionmaking, and outcomes of men and women of different ages, within households. The unitary model of the household does not adequately capture gender dynamics; however, treating all assets, enterprises, and consumption at the individual level (as in the Pathways from Poverty framework) is also inadequate, as it ignores the instances of sharing that occur within households. Both joint production and consumption are important.

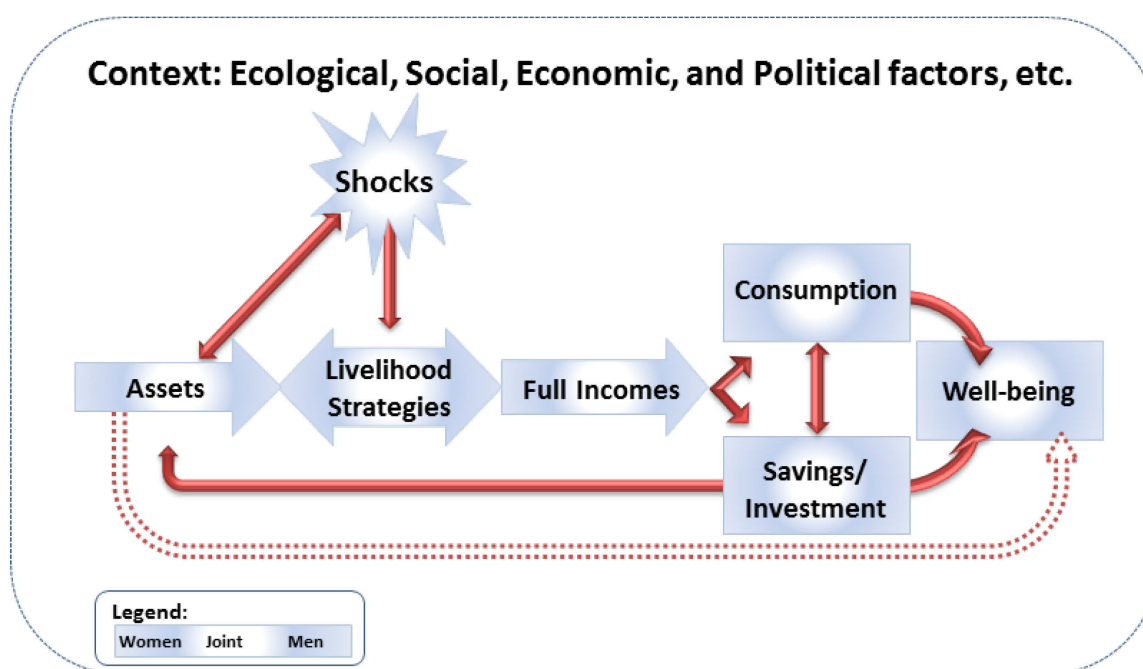
⁵ Quisumbing (2009), extending the Carter and Barrett (2009) framework to take into account joint and individual asset accumulation, finds, for example, that men and women in rural Bangladesh have different asset accumulation trajectories and that their respective asset holdings respond differently to different types of shocks.

⁶ Although cultures and contexts do change in response to a variety of factors, such as new market opportunities, increased migration, and higher educational levels of the population, these changes usually occur over a longer time than that of the typical project.

3.2 The Gender, Assets, and Agricultural Programs framework

The Gender, Assets, and Agricultural Programs (GAAP) framework (see Figure 2) shows the links between assets and well-being while making clear that gender relations influence the constraints and opportunities that occur in each pathway. In the framework, each component is gendered. The shading of each component is a reminder that we need to consider separation and jointness in each box. Women and men often have separate assets, activities, and consumption and savings or investment strategies, but households can also have joint assets, activities, and consumption strategies, among others.

Figure 2: Schematic representation of a gendered livelihood conceptual framework



Source: Authors.

The first element of the conceptual framework is the context, which may include a broad range of ecological, social, economic, and political factors. Even if individuals are living in the same household, men and women typically experience this context differently based on their roles and responsibilities and other social, economic and cultural factors. In some cases, the gendered nature of the context is explicit. For example, cultural norms may define roles and responsibilities for men and women, and in some cases men and women are treated differently by laws or legal provisions. In other cases, it is necessary to look deeper to fully realize differences. For example, while the biophysical context applies to the entire household, its impacts, depending on other contextual factors and assets, may be different for men or women. Low rainfall may be less of a constraint to men if their fields have irrigation and women's do not (or conversely), or if women have primary responsibility for collecting water for the household and must devote more time to this activity. Availability of wild plants may be more important for women

than for men. Conversely, fauna availability may be more important to men who typically hunt. Geographical location, such as proximity to roads and market centers, might appear to have homogenous effects on all members of a household, but in fact men and women may differ in terms of their ability to travel or to engage in certain types of markets. Security conditions may also differentially affect men and women, particularly with respect to women's safety in traveling, working fields, and engaging in gathering activities for firewood or water. In other societies, men may be responsible for providing other crops, including staple grains, important to household welfare. In sum, the links between culture, context, and gender roles cannot be taken for granted. The specific linkages need to be investigated in each situation.

Beyond the visible or concrete contextual factors, it is essential to consider the institutional context in the gender-asset framework. In addition to cultural and legal institutions already mentioned, the "institutions of exchange" are especially important, as they condition the ways through which livelihood strategies are translated into incomes. Markets are the most obvious institutions of exchange, but social reciprocity norms (such as mutual help groups for labor or norms of sharing food) also play a critical role. As previously mentioned, access to markets is often gendered, for example, women are restricted from participating in markets in much of South Asia, however equal participation by men and women is more common in Latin America and women are active as traders, as well as clients, in much of West Africa.⁷ These institutions include not only markets for agricultural production, but also labor markets, in which women's participation tends to be more limited than men's.

Many contextual variables are treated as exogenous by projects. While it is often true that project interventions cannot readily change cultural norms or environmental conditions, it is important that context not be considered as static: weather patterns, access to markets, and certainly institutions (even those considered "traditional") do change over time, and should be regularly reassessed.

Access to and control over assets; as described in the previous section, are key determinants of individual agency. The shading in this and all other components of the diagram reflects that within a household there are assets that are held by women, some that are held by men, and others that are owned and/or utilized jointly. The distribution of assets in a particular household will influence how the household and its members use their assets to further their livelihoods and improve well-being.

The livelihood strategies represent decisions that individuals and households make about how to invest their assets in productive and reproductive activities in order to generate expected returns. The livelihood strategies available in a particular area will depend on many of the contextual factors (agroecology and market access, for example) and may be heavily influenced by gender roles. Whether men and women will be able to pursue the available strategies will further depend on what assets those livelihood strategies require, and on how "household assets" are allocated across different household members to enable them to engage in specific livelihood strategies. In some cases men and women pursue different

⁷ For an analysis of gender relations and control over capital in Indian and West African marketing, see Harris-White (1998).

livelihood strategies; in other cases, these may be joint, as with “family farms” or family businesses. In addition to the arrow from assets to livelihood strategies, the diagram shows a reverse arrow from livelihoods strategies to assets, to capture how some assets like social capital (or even natural capital like soil fertility) can be built in the process of carrying out livelihood strategies rather than as a discrete investment decision at the end.

The actual returns to different activities may also be affected by shocks (negative or positive). Weather, disease, violent conflicts, theft, and even sudden policy changes represent potential shocks. Shocks can also affect a wide area at a given time (so-called covariate shocks, such as weather shocks or widespread food price increases), or could be specific to the household (death or illness of an income earner) or an individual (divorce or abandonment). The majority of shocks we list here have a negative effect, but there are also positive shocks, as well as shocks which have both positive and negative effects for different people in a given household. For example, a drought that reduces crop yields on a broad scale and leads to higher prices can benefit the people who have irrigation and can still produce, or people who produce a particularly drought-resistant crop, via higher selling prices. Shocks may also have effects that go beyond their (economic) impacts on production or consumption, if such unforeseen events also affect social status, self-esteem, and leadership. Being divorced by one’s husband or being diagnosed with HIV/AIDS could lead to loss of social status in many contexts, for example.

How are shocks gendered? First, men and women experience shocks differently depending on their different roles and responsibilities. Men who own livestock are more directly affected by cattle rustling or by drought that reduces the availability of good forage; women who keep poultry will be more affected by diseases such as avian influenza. Human diseases are likely to have a disproportionately large effect on women, as women are often affected not only by their own illnesses and typically have lower access to healthcare, but also responsible for taking care of other sick family members.

The second way that the impact of shocks is gendered is through differential ability to withstand shocks. Do men and women have equal access to irrigation or water harvesting methods to address the effects of droughts, or have insurance to deal with extreme weather or pests? Thirdly, assets can play an important role in withstanding or responding to shocks, and men’s and women’s assets are often used differently to respond to shocks. For example, in Bangladesh, Quisumbing, Kumar, and Behrman (2011) found that women’s assets are disposed of to respond to family illnesses, whereas men’s assets are used for marriage expenses and dowry. This has important implications for gendered asset accumulation if the incidence and magnitude of both shocks and asset disposition vary over time.

In addition to general shocks, there are also shocks that specifically affect women and lead to loss of their assets and a threat to their livelihood strategies. For example, divorce or death of a husband can lead to women losing their assets especially in cases where marriage is governed under customary laws that do not protect women’s rights to property (Peterman 2010).

The livelihoods strategies and shocks result in a household’s full income, which is defined as the total value of products and services produced by the household members, some of which are consumed directly and others sold for cash

or traded for other goods or services. The concept of full income also includes leisure time of household members. Because it is more likely for women's time to be devoted to nonmarket or reproductive activities—including growing food consumed at home, caring for children, and caring for the ill—measures of income that do not take into account the value of time will tend to underestimate women's contribution.

Household members differ in their contributions to household income, and they also differ in their control over how that income is used. Under the unitary model of the household this distinction is not an issue, but where household members have different preferences, household expenditures will differ depending on how control over income is distributed within the household. A large body of evidence shows that, in many parts of the world, men and women spend money differently: women are more likely to spend the income they control on food, health care, and education of their children (Haddad, Hoddinott and Alderman 1997; Lundberg et al. 1997). Evidence from Malawi and Uganda showed that women were more likely to spend more of their income on food compared to men while men were likely to spend more of their income on assets than women. On average, women spent 23 percent of their income on food and 14 percent on assets while men only spent 8 percent of their income on food and 25 percent on assets (Njuki et al. 2011). Asset ownership, in particular, is among the factors that may influence women's control over income and bargaining power in household negotiations (Doss 1999; Thomas, Contreras and Frankenberg 2002; Quisumbing and Maluccio 2003).

Neither the unitary model of a household pooling all income and allocating for the needs of all, nor the bargaining model of individuals bargaining based on their individual interests, is likely to fit most situations. Rather, when considering consumption (of goods, services, and leisure) and savings and investment, it is useful to consider which decisions are made individually, and which collectively. Who bears responsibility for the children? Because full income also includes the value of time, it is important to consider the distribution of leisure within the household—or conversely, whose time is most occupied in productive and reproductive activities. When both market and household work are taken into account, time allocation studies show that women work significantly more hours than men (Juster and Stafford 1991; also see World Bank 2001: 66).

In simplified terms, savings are the balance of income that is not consumed. How savings are invested will affect asset accumulation (or loss) for the future. If kept in a bank account, savings would increase financial capital; if used to purchase equipment or build a house, savings builds physical capital; if used to buy land, plant a tree, or install irrigation (water control) then savings increase natural capital.

Although much economic theory dichotomizes between consumption and savings, in fact the dividing line is not so clear. Certain types of consumption can also increase intangible assets of human and social capital. Consumption of healthy food, clean water, adequate shelter, and a clean environment improves nutrition and health outcomes for adults and children, which is an important aspect of human capital. Ceremonial expenses, hospitality, the ability to wear decent clothing, and even some types of conspicuous consumption of prestige goods, as well as spending time with others (either informally or in group meetings) can all contribute to social capital (see, for example, Cancian 1972).

Again, the relevant question is, “how are investment patterns gendered?” For example, how are women’s, men’s, and joint income used for different types of investment by different family members? What affects their respective decisions on investment? What are the common and differential opportunities for men and women to invest? These include both formal opportunities as well as the practical obstacles. For example, even if a country legally allows women to own land, if most land is held under a customary tenure regime where decisions are dominated by men, then women will be effectively excluded from this avenue of asset accumulation. Policies that give husbands and wives joint tenure over land acquired during marriage and implement practical steps to ensure application of the policy, can result in an increase in joint asset ownership. In the case that women (or men) are precluded from investing in one type of asset, are there other types of assets that they can accumulate, and how valuable are they for creating good livelihood options, or for strengthening bargaining power? Does building assets through women’s groups help to shield them from capture by men? Do women’s investments in social capital constitute an asset in themselves?

Measures of or changes in savings and assets are not always positive. In the case of a severe shock (such as a major drought, or family illness), a household may need to dip into its savings or liquidate particular assets in order to maintain a certain level of consumption. As described above, men’s and women’s assets may be used differently to buffer shocks. Children (often girls) may be kept out of school, reducing human capital accumulation. In cases of negative savings (debt) and investment it is important to ask whose savings or assets are being liquidated to keep the individual or household consumption levels and whether there will be other mechanisms for those who lose to replace their assets. For example, women’s jewelry is often used to meet family emergencies. Where banks or pawn shops are available to provide loans against the jewelry, there is a greater chance that the women can reclaim their asset, compared to having to sell the asset outright.

The purpose of our framework is to show how gender and assets influence well-being of households and individuals. Many outcomes related to well-being that are of interest to policymakers and development donors are linked to the results of consumption (education, food security, nutrition, health), though with clear links to investment and asset accumulation since achieving these well-being outcomes requires the ability to maintain and build up assets over time. Other aspects of well-being, such as self-esteem, one’s status within the household and society, agency, and empowerment, are less easy to measure, but are also important, and are increasingly being considered as development goals in themselves. One would like to see, for example, agricultural development projects not only expanding individuals’ incomes and consumption choices, but also empowering them—expanding their ability to make strategic life choices, particularly in contexts where this ability had been denied to them (Kabeer 2001).⁸ Being empowered has also been shown to positively affect the health and nutrition of children and their mothers (for example, Smith et al. 2003 and studies reviewed therein), so these goals are interrelated. This gendered conceptual framework helps to identify these

⁸ There is a growing literature on the measurement of empowerment (see Kabeer 1999; Alsop and Heinsohn 2005); the most recent studies attempt to develop multidimensional indices because empowerment is a multidimensional concept. See, for example, Ibrahim and Alkire (2007).

development outcomes and to propose hypotheses that can be tested, not only to measure the impacts of agricultural development programs but also to better understand individual and household decision making.

Assets have a positive impact on well-being, but affect it via different pathways. Assets may: (1) directly impact well-being through the increased status and empowerment that asset ownership conveys; (2) enable different household members to pursue various livelihood strategies; (3) provide a buffer against shocks; and (4) strengthen household members' positions in the broader community as well as within the household in terms of bargaining over how income is spent or invested.

This framework leads us to three gender-specific hypotheses that can be tested empirically:

- Different types of assets enable different livelihoods, with a greater stock and diversity of assets being associated with more diverse livelihoods and better well-being outcomes.
- Men and women use different types of assets to cope with different types of shocks.
- Interventions that increase men's and women's stock of a particular asset improve the bargaining power of the individual(s) who control that asset.

To improve livelihood strategies, access to an asset like land may be sufficient, but to buffer against shocks and affect decisionmaking, control over assets will be important. The multiple roles that assets play have implications for which livelihood strategies individuals pursue (generation of income versus control of income) and for which assets they invest in (high returns in livelihood strategies versus ease of disposition versus negotiation power).

The shading in the framework is a reminder that all of the key components may be different for men and women, or may be shared by members of a household (or even community). This prompts us to consider how the differences in context, assets, livelihood strategies, risks, and other components for men and women may affect outcomes for individuals and households (with particularly important implications for children and the intergenerational transmission of poverty). The degree or balance of shading represents the extent of the gender gap in assets and in bargaining power. We therefore propose a fourth hypothesis:

- Interventions and policies that reduce the gender gap in assets are better able to achieve development outcomes related to food security, health, nutrition, and other aspects of well-being related to agency and empowerment.

Ultimately, the framework demonstrates why focusing on cash income (as many development interventions do) may not lead to a direct or even necessarily a positive effect on key development outcomes like food security, health, nutrition, equality, and empowerment. Gender considerations relating to access to and control over assets play a major role in determining how income does or does not translate into welfare.

Although the framework is primarily at the (intra)household level, it can also be used to consider collective assets. For example, common property such as

forests, rangelands, or water systems, can be considered as a type of asset, and we can examine the extent to which it is controlled by men, women, or jointly, and what implications that has for livelihood strategies or empowerment (such as through leadership opportunities in the group managing the common property). Furthermore, there can be interactions among individual, household, and collective assets and action. For example, if a development intervention uses women's groups as a mechanism to build women's individual or collective assets, the assets of the individual women and dynamics within the household may affect who can participate, and participation can, in turn, build not only the specific asset (such as livestock, collective garden, or a joint fishpond), but also social capital, which may have repercussions for women's empowerment. Thus, it is important to consider both an individual's assets and shares of group assets.

4. GENDER, ASSETS AND AGRICULTURAL DEVELOPMENT INTERVENTIONS

The framework describes the importance of gender and assets in livelihoods and welfare, and thus could be used to inform the design and implementation of a range of policy and programmatic interventions. In this section, we use the framework to assess the implications of gender and assets for agricultural development interventions. However, the overall framework could also be used to examine nonagricultural development projects such as microfinance or employment as well.

Despite the lack of knowledge about what works to reduce the asset gap, we now have substantial experience demonstrating "what works" in gender targeting of agricultural development interventions. This includes knowledge surrounding improving women's participation, increasing the chances that women will benefit from the project activities, and working with men to change attitudes and behaviors that limit women's opportunities in economic, social, and political spheres (Quisumbing and Pandolfelli 2010; Kristjanson et al. 2010). While these methods are well known, they are still not widely used in development projects. Lack of knowledge and/or capacity—from field implementers through to project managers and donors—has led to a situation where what is common practice is often far from what is known to be "good practice." Kabeer (2010: 108) lays out a continuum from "gender-blind" projects that do not take account of gender issues and may thereby reinforce gender-based constraints, to "gender-aware" projects that use information to avoid reinforcing constraints, to "gender-transformative" interventions. The latter would go beyond simple participation to ensure that women capture meaningful benefits and are empowered by the intervention process. Only by conducting rigorous analyses of alternative interventions that include well designed and implemented strategies for reaching women can we begin to identify which pathways provide the greatest opportunities to build women's assets and offer guidance about policies that help reduce the gender asset gap.

The current framework can assist in the design of development programs by better conceptualizing how the gendered asset distribution affects the uptake and eventual outcomes of programs, and how the accumulation of assets by men and women is affected by interventions. By specifying the linkages between assets, livelihood strategies, risks, and outcomes, it can also help to design better impact assessments that show which strategies are most effective in different contexts.

Agricultural development interventions tend to influence assets in three major ways. First, some interventions increase the stock of agricultural assets such as land, livestock, water, or machinery, enabling farmers to increase production or build up the stock of intangible assets (human capital, social capital, or political capital, which can also be crucial in enhancing empowerment and women's decisionmaking roles) that may be complements to traditional agricultural assets. Second, interventions can increase the returns to assets such as land or labor that are used in agriculture by increasing productivity, for example through improved technologies or interventions to strengthen markets and increase income. Third, they can reduce risk, thereby protecting assets. In reality, many projects affect assets through a combination of these three approaches.

4.1. Programs to increase the stock of agricultural assets and remove gender-specific barriers to building those assets

Many land reform, redistribution, and/or titling programs have the goal of stimulating agricultural productivity by improving access to land, security of tenure, and providing means and incentives, via credit markets, to increase investment in agricultural production. Irrigation development programs, fish ponds, and livestock distribution schemes similarly seek to increase the asset base so that people can increase their productivity in agriculture. Beyond natural and physical capital, programs also invest in strengthening human capital (via training including extension services) or social capital by building or strengthening organizations, including women's groups as well as community organizations, especially those involved in managing common property such as forests or water supplies. These programs can, in turn, help build or strengthen other assets (such as financial capital from women's savings groups or natural capital from commons management).

In terms of application to the framework, these programs translate into an increase in the size or value of the asset component. Its impact on the asset hexagon and ultimately the shading of the box indicating jointness or relative control by men or women will depend not only on how the program assigns rights, but also on whether these rights defined by the program can be defended against other competing claims that might exist in the household and community. Whether the individuals and households are willing and able to maintain the asset will depend on how a particular increase in asset stock contributes to welfare.

The impact of the asset building programs on food production and income will depend in part on who ultimately uses the asset in what livelihood strategies. This, in turn, will depend on current gender roles, especially in reference to labor and access to complementary inputs (such as credit and knowledge). Control over the "income" generated by the assets (whether in kind or cash) will also be important both in terms of incentives of household members to use the asset and in terms of how the products and services it generates translate into well-being for household members. Finally, the ownership of the asset itself may alter intrahousehold negotiations by strengthening the bargaining position of its owners at the expense of others.

In practice, many agricultural projects provide more than one type of asset, because they recognize that complementary assets may be needed for people to take advantage of the main asset being transferred. For example, Heifer

International (www.heifer.org), an NGO that distributes livestock to poor households in developing countries, not only transfers an animal; it organizes recipients into groups that will receive training on how to care for the animal and requires that recipients share offspring with others, thereby strengthening human and social capital as well. In Mali, the Millennium Challenge Program (MCC) (www.mcc.gov), a foreign aid agency of the U.S., provides women with irrigation, but also training, seeds, and assistance in forming women's farming associations.

Landesa (www.landesa.org), a nongovernmental development organization working to secure land rights for the world's poorest people, works to transfer homestead plus garden land titles to poor families, an example of a program that seeks to intervene directly in strengthening assets. It is also a good example of one that seeks to strengthen joint assets, with the husband's and wife's names on the land title, and also pays attention to ensuring daughters' inheritance rights. The project organizes community discussions and boys' and girls' groups to address gender discrimination and early marriage, in order to ensure that the provision of land to poor households will also benefit the daughters (Middey and Fletschner 2010).

Certainly not all (or even a majority) of agricultural programs that aim to increase the stock of assets, whether through distribution, subsidized purchase, or other means, target women. To the contrary, many assume that men are the farmers, and therefore transfer assets to the (male) "head of household". Such gender-blind programs are likely to increase the gender asset gap; by being more gender-responsive in their approaches, projects can redress this bias and bring greater benefit to women. For example, if women do not have control over land or water resources, a project can work to identify land for group gardens or collective irrigation.

Strengthening human or social capital might appear to be an option for targeting asset-poor individuals and households, but programs often inadvertently put in place asset-based barriers. While often well intentioned—it is true that human or social capital may not translate into new livelihood strategies if people cannot access complementary inputs—poorly designed or overly simplistic criteria for program participation exclude people who could benefit. For example, producer associations often require land ownership as a prerequisite for membership, thus limiting the participation of women and youth who may have access to household or community land but no claim to ownership. Our conceptual framework can be used as a diagnostic tool to identify barriers that prevent gender-equitable participation in these programs: if a particular type of intensified production requires certain assets or increases returns to certain assets, and if poor households or women farmers (either in female-headed or male-headed households) do not have those assets, then they will not be able to benefit from the intervention. Ensuring that they benefit may require either selecting interventions that increase returns to assets they do have, or looking for ways to improve their access to the assets they need.

For example, a study in Uganda by Nkedi-Kizza et al. (2002) found soil fertility levels were higher in plots managed by husbands compared to those managed by wives. This will influence women's ability to plant certain crops. Projects seeking to benefit women would need to focus on crops that can be grown on their plots, or on making fertilizer more accessible, such as the sale of fertilizer

in smaller bags, rather than the 50 kilogram bags that poor farmers are unable to afford (Gladwin 2002), and that women may especially have difficulty transporting.

Diagnosing this type of situation *ex ante* can allow agricultural programs to make provisions for more equitable participation, or develop technologies or extension strategies that are adapted to gender differences in human capital (levels of schooling). For example, a polyculture fishpond technology program implemented through the government extension system in Bangladesh and targeted to households primarily benefited men from wealthier families, even if women were required by the donor to account for 30 percent of project beneficiaries, because adopting the technology required ownership of a pond, or land on which to construct the pond. To reach landless women with this technology, an NGO made provision for groups of women to rent water bodies that they could use collectively to grow fish (Hallman, Lewis, and Begum 2007), or to excavate fishponds using food-for-work funds.⁹ Similarly, in developing soil fertility replenishment strategies in Kenya, the World Agroforestry Centre recognized that women had limited property rights to plant trees on their land, and often lacked the cash or transport needed to acquire chemical fertilizer. They therefore used plants that grow in hedgerows and “interstitial spaces” where women could harvest the leaves and transfer biomass to improve their soil fertility on land that they cultivate, but do not “own” (Rocheleau and Edmunds 1997). Adapting the outreach materials so that they were understandable by illiterate women further meant that lack of human capital (education) was not a barrier to adoption; the result was that women adopted on a par with men (Place et al. 2007).

Human capital—such as health and nutritional status, or agricultural knowledge—can also be built directly by agricultural development projects. Human capital interventions are often enhanced if projects also empower the women in the household. For example, the HarvestPlus initiative (www.harvestplus.org) promotes varieties of staple crops that are higher in micronutrients, the consumption of which improves nutritional status. This intervention essentially improves the quality rather than the quantity of food produced by the household—which is another way to improve productivity. However, whether or not that improved productivity translates into improved nutrition depends on the willingness and ability of household members not only to plant the new crop but also to feed it to members of the household who are nutritionally vulnerable. To help ensure that this happens, seed distribution is often accompanied by social marketing and behavior change campaigns to encourage consumption of these nutritious products (de Brauw et al. 2010). Similarly, dairy development projects such as the East African Dairy Development (EADD) project are testing nutrition awareness messaging to encourage households to dedicate some of their increased milk production to the nutrition needs of target groups such as children and pregnant women (EADD 2010).

⁹ Land rental markets are also another way that women can get access to land. It may be even easier for women to lease land than to purchase it because leasing does not create long-term secure property rights in the borrower/lessee; see examples from Burkina Faso in Bruce et al. (2006) and Ethiopia in Holden et al. (2007).

4.2. Interventions to increase returns to assets: strengthening market linkages

Many programs do not focus on building assets themselves, but can be seen as increasing the returns on the assets that people already have. Market expansion, linking smallholders to high-value markets, is the avowed aim of many current agricultural value chain programs by governments and NGOs. Examples of market-oriented interventions include infrastructure—roads, communication systems, collection and storage facilities—as well as investments in better information and better organizational on the part of producers and/or other actors in the value chain. Market investments are often accompanied by technology investments based on the logic that increased market opportunities will provide an incentive to invest in improved productivity. As with other elements of the framework, looking at these interventions as part of the entire cycle can draw attention to complementary interventions that may be needed, as well as to the other factors that condition returns to program interventions and how they are distributed within households.

It is important to consider how participation in different types of value chains is gendered. The type of product or commodity as well as the type of market can also influence who markets and subsequently who controls the income from the commodity (Njuki et al. 2011). In a study in Malawi and Uganda, women were more likely to participate in local markets for legumes and livestock products such as milk than in cattle markets or markets for cash crops such as tobacco. The setup of marketing arrangements can have an important influence on the degree of separate or joint control of incomes within the household as well. For example, in Bangladesh where women are restricted from going to markets, a dairy value chain project hired women to be milk collectors and redesigned the vehicle they were to use to make it easier for them to visit the homes and collect the milk from other women producers (CARE-Bangladesh 2010). In some cases, special training (for example in negotiation skills) may be needed for women to participate in markets. Women often participate in more informal markets, accepting buyers' offers rather than negotiating for better prices for their commodities. Training in negotiation skills can enhance women's bargaining power. As markets get more formalized and further away from their homes, women can be disadvantaged if interventions to increase their participation and benefits from these markets are not implemented.

In many cases, access to markets may depend on other assets such as transportation or communication equipment like carts to get produce to markets or cell phones and radios to find out market opportunities and prices. For example, a DfID-funded project in Kenya used mobile phone networks to make fish pricing more transparent, benefitting 350 women's fish trading associations (ILO Coop-Africa 2009).¹⁰ Here again, our framework would draw attention to the question of whether women and men have these necessary complementary assets.

In addition to intrahousehold bargaining power, the frequency and size of income receipts matter. Small incremental payments may not allow for much savings unless there are microfinance institutions available, likewise, lumpy income receipts (such as at an annual harvest) can lead to disproportionately high consumption followed by a hungry season unless there are appropriate ways to

¹⁰ Recent promising efforts to employ ICT in agriculture and the gendered dimensions of doing so are summarized in Manfre (2011 forthcoming).

save and reinvest. Looking at how access to these channels are gendered will help in ensuring that increased income does, indeed, translate into improved assets and a reduction in the gender gap in assets.

It is important to also note that targeting women alone for market-oriented agricultural interventions may backfire, leading to appropriation by men as women's enterprises become profitable. Many agricultural development programs, even those which ostensibly attempt to increase women's production and income, result in men taking control of the output that women have produced (for classic examples, see Dey 1981, cited in von Braun and Webb 1989 and Jones 1983). The key questions revolve around the strategies needed to ensure women both earn income and have control of the income they earn. In situations where increases in women's assets result in their being taken over by men within their households, other forms of collective ownership—such as through women's groups—may need to be explored to guarantee women's continued control of productive assets. In cases where men take the produce to market and get paid for it, they may also be taking the decisions on consumption and investment by themselves, leaving women with little influence over these critical decisions that affect their own welfare and those of the children.

New options to make payment into women's microfinance accounts, or new mobile phone applications that handle payments for crop payments directly at the market (see Manfre 2011 forthcoming) can help to ensure that women retain control over income and consumption decisions. Commitment savings products, whether through individual or group accounts, may be ways of protecting women's savings (Ashraf, Karlan, and Yin 2010). However, these innovations also depend on women having access to financial capital (savings accounts), physical capital (cell phones), or social capital (women's groups and group savings programs) to equitably implement a given program design. Technological approaches are not the only way to ensure income for women. In Malawi for example, integrating gender training in a market development program and having multiple crops and livestock enterprises and focusing on different types of markets led to more income under the control of women (Njuki et al. 2011). Working with both men and women and with multiple enterprises may secure women's participation and management of income.

4.3. Innovations to reduce risk

A growing number of agricultural development programs seek to address shocks through insurance, for example, but most of these only target men. There are two important linkages between such programs and assets that have important gender dimensions: whether it requires assets to participate in the programs, and whether these programs help to protect the assets of men and women. Traditional crop insurance programs, for example, can only protect land holders, although agricultural laborers also suffer loss of employment when crops fail. Newer weather-based index insurance products are being designed so that they can be purchased by landless families or women (IBLI 2011). Nevertheless, if women are less involved in agricultural production, or if weather shocks do not directly affect their asset holdings, they may be less willing to pay for weather insurance. Conversely, if women's assets are disposed of to cope with illness shocks, a health insurance project might be an important avenue for social protection for women. In

general, our framework should serve as a reminder of the importance of shocks in the lives of the poor, and to assess whether new livelihood strategies being introduced will increase or decrease vulnerability to such shocks. Are the new crop varieties more susceptible to fluctuations in water, temperature, or pests? If aiming for specialized markets, will that introduce price fluctuations and the risk of produce not meeting grading standards? If so, is there a differential ability for men and women farmers to bear these shocks? Use of this framework can draw attention to other types of shocks that may affect particular livelihood strategies. For example, if malaria, HIV, or other diseases are a constraint on labor availability, teaming with health interventions to redress those shocks may be essential to the outcome of the program. As noted above, women often bear a disproportionate burden for illness shocks, so health interventions may be especially important for gender-equitable participation.

The same considerations of whether men and women can both participate also apply to government programs such as public works projects that act as a form of insurance. Kabeer (2010) contrasts the Bolivia's Social Emergency Fund, which had 99 percent male participation, with India's National Rural Employment Guarantee Scheme, which set and exceeded a quota of 30 percent female employment through a gender-aware design that included child care facilities and location of employment close to residences to enable women to participate. In a recent study of livestock insurance, 42 percent of insurance contracts were purchased by women although it was not clear whether it was insurance against women-owned livestock. For example, with evidence that most of the camels were owned by men, 37 percent of the contracts for insuring camels were sold directly to women (IBLI 2011). Focus group discussions showed the high number of women purchasing insurance was as a result of the absence of men due to migration with livestock.

4.4. Interactions between agricultural programs and the gender distribution of assets

Although agricultural development programs are affected by—and affect—the distribution of assets within the household, very few efforts have been made to examine these impacts. This is partly because the linkages have not been prominently identified, and partly because gender-disaggregated asset data is scarce. The examples of programs identified above each give only a partial picture, but there are some common themes across the different types of interventions.

The first theme is the need to consider all of the assets—tangible and intangible—needed to participate in a program, and how the distribution of those assets may exclude women or men (or those of other groups or categories) from participating.

A second theme is the need to do a gender analysis, not just focus on women (or men) in isolation. Programs for women alone may not achieve their aims, or even backfire, if they do not involve men. Complete sharing of assets and interests within the household should not be assumed, but neither should the element of jointness among family members be overlooked. For some enterprises, households may pool their assets; for others, they may compete for control of assets. Any sound gender analysis needs to be context-specific, considering a host of cultural factors of the particular group at that particular time.

And what of the outcomes of these interventions? Much more attention is needed to document and understand the impacts on assets and wellbeing. There is suggestive evidence that interventions that attempt to equalize the gender asset gap may have better impacts on health and nutrition outcomes. In a gender-blind Bangladesh fish pond program that targeted information regarding the technology to the households and by default, husbands (Hallman, Lewis, and Begum 2007), Kumar and Quisumbing (2010) and Quisumbing and Kumar (2011) found that participation in the program increased husbands' holdings (relative to their wives') of land, livestock, and total value of assets, whereas in programs targeted to women's groups, women's assets increased faster than their husbands', even though husbands still owned the majority of household assets. Moreover, while the gender-blind program had the largest gains in terms of consumption expenditures and household assets, improvements in nutritional status of women and children were less than those in the programs targeted to women's groups (Kumar and Quisumbing 2011). One could argue that one way to reduce the gender gap would be to reduce men's assets, and consequently the overall household holdings, however this is obviously not desirable. Ideally, men's, women's, and joint assets would increase, but women's would increase more rapidly in situations where they have had less control over assets.

The mode of project delivery also matters for outcomes. Many programs use group-based approaches to delivery, either for building assets (for example, savings groups or Heifer Project's supplying animals to one member of a group), for accessing markets (such as through producer cooperatives), or risk mitigation (such as through microfinance insurance products). In addition to their effect on tangible assets, such programs affect social capital and may have direct empowerment effects. For example, Kabeer (2010) reports that a group-based livelihoods program of PRADAN, an Indian NGO, had a positive effect on intrahousehold relations and women's bargaining power. However, collective approaches are not a panacea: a number of the fish pond groups included in the Hallman, Lewis and Begum (2007) study had broken down, indicating the need for careful attention to factors affecting collective action when group-based approaches are used.

5. SUMMARY AND IMPLICATIONS

Tangible and intangible assets play a multifaceted role in increasing well-being: they are required to pursue certain livelihood strategies, buffer against shocks, and provide for status and bargaining power for those who hold them. There is also increasing evidence that assets are not shared or distributed equally, even within households, with women usually controlling fewer assets than men. However, the implications of the gender gap in assets have not been fully examined, nor has the knowledge that does exist been consistently applied to development programs.

The conceptual framework presented in this paper offers a starting point for examining how gender and assets influence the well-being of households and individuals. The first step in applying the framework is to identify the relevant contextual factors, then consider how access to and control of assets affects livelihood strategies and ability to withstand shocks, to result in full income (including not only cash, but in-kind products and leisure). Rather than focusing

exclusively on income, the framework highlights how income is allocated between consumption and savings or investment, affecting welfare of household members and asset accumulation (or loss). Once again, assets may influence bargaining power over the decisions on how income is used.

A key element of this framework is that each component is gendered, allowing for men and women to have different assets, livelihoods, shocks, income, consumption, but also for some elements of each of these to be shared within the household.

This framework can be used to generate hypotheses about individual and household decisionmaking and the influence that the norms, practices, and decisionmaking processes of community and group organizations can have on individuals and households, and to measure the impacts of agricultural development programs. In addition, beyond the research and impact assessment applications, the framework can also be used by program designers and implementers to examine how their interventions are gendered, and are likely to interact with other elements and play out in terms of ultimate welfare outcomes and long-term asset accumulation. While we still need a stronger evidence base on how programs can reduce the gender gap in assets, understanding the linkages and the impact of these programs on key outcomes of food security, health, nutrition, and empowerment and agency can contribute to more effective development programs, particularly in the agricultural sector.

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