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Gender and Property Rights in Sub-Saharan Africa

A Review of Constraints and Effective Interventions

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Abstract

Strengthening women's ownership, control, and use of land, livestock, and savings assets matters for poverty and shared prosperity, as unequal property rights can lead to intrahousehold inequality in wealth; allocative inefficiencies, which are costly in lost economic output and productivity growth; and women's control over household resources and spending decisions, with welfare implications for this generation and the next. Yet, there is ample evidence to show that the distribution and control of these key assets are skewed toward men across Sub-Saharan Africa. This paper examines the underlying constraints that potentially give rise to these inequalities, assesses the impact evaluation evidence on how to narrow existing gaps and boost welfare, and outlines a set of priority research and policy questions. On land, the review uncovers promising evidence on joint land titling and notes the need for work from urban settings and complementary interventions that address multiple market failures. On savings, those products with an element of illiquidity and a soft commitment show promise for women in experimental settings. On livestock, the review points to a striking dearth of evidence on the causal impact of livestock transfer programs—aside from bundled ultra-poor programs and nutrition interventions.

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Gender and Property Rights in Sub-Saharan Africa: a Review of Constraints and Effective Interventions*

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I. Introduction & Motivation

Property rights play a central role in the framing of investment incentives, the allocation of resources, and economic development more broadly (North and Thomas 1973; Besley 1995; Acemoglu, Johnson, and Robinson 2001). However, policies and institutions across Sub-Saharan Africa on land (Deininger 2003) and other key assets are constraining investment and productivity, while population growth and environmental degradation place greater pressures on productive resources. A lack of effective property rights can lead to a number of undesirable economic outcomes (Galiani and Schargrodsky 2011): fear of expropriation can lead to under-investment; a lack of transferability can impede the efficient functioning of markets (for land in particular); an environment of uncertain property claims can impede the collateralization of land and other assets; and insecure property rights can adversely affect women's labor and reproductive decisions, as well as their decision-making within the household, with the potential for knock-on investment and welfare effects.

Securing property rights over productive assets is of particular importance. Assets can serve as a store of wealth and buffer against shocks, can shape the set of productive economic opportunities available to women and men, and help determine the relative bargaining and decision-making power of individuals within the household (World Bank 2011).

There are three sets of productive resources that matter most for households and individuals in Sub-Saharan Africa: land, livestock, and savings and bank accounts[1] (FAO 2011a):

- *Land*: Land is the central productive asset held by rural and urban poor (A. V. Banerjee and Duflo 2007), and a key fixed asset for agriculture and entrepreneurship. In rural areas, household asset portfolios tend to be heavily weighted toward land and livestock (Aryeetey and Udry 2000). In an economic sense, land is unique as an asset as a store of wealth and for collateral in that it is both immobile and virtually indestructible (Binswanger and Rosenzweig 1986). Land also holds an important socio-cultural meaning, provides social standing, and serves as a source of income from rental or sale. Despite land's importance, land rights are perhaps among the most poorly defined "among rival and excludable assets, in particular in developing countries" (Galiani and Schargrodsky 2011).
- *Livestock*: Livestock and animal products have a number of attractive features for poor households, including: their reproductive potential, mobile nature, store of value, and ability to be bought and sold in whole or from derived animal products (FAO 2009). Livestock also serve as an important complementary input for agricultural production, contributing both draught power and soil organic matter (Sheahan and Barrett 2014). Pica-Ciamarra et al. (2011) examined evidence from household surveys in 12 countries and found that most rural households hold some livestock, and livestock ownership for the bottom 40% of rural households (in terms of expenditure), is even higher, at 68%. In Tanzania, for example, analysis from a nationally-representative dataset reveals that 61% of rural households derive some income from livestock activities and that, among these households, revenue from livestock makes up 22% of their total income (Covarrubias, Nsiima, and Zezza 2012).
- *Savings and bank accounts*: Savings can help poor households grow assets and smooth consumption. Formal savings in particular confer a number of advantages over informal savings. Storing one's savings at home poses risks such as theft or appropriation by a family member and heightens the risk of temptation to spend (A. V. Banerjee and Duflo 2007).

[1] There a number of other types of non-productive assets that are not included in this review (e.g., jewelry). We restrict our focus to those assets that can serve as a safe store of wealth and offer a non-negligible return. In addition, gender differences in human capital are not considered in this review.

Formal savings can thus offer added security[2] and insulation from behavioral biases. Despite the advantages, formal savings rates remain relatively low. While approximately 60% of adults in Sub-Saharan Africa report having saved in the previous twelve months, only 34% report having some type of account at a financial institution or a mobile money platform (Demirguc-Kunt et al. 2015).[3] And only a quarter of adults own a savings account among the poorest 40% of households.

Despite the importance of these assets to rural and urban households, we have ample evidence to show that the distribution and control of these key assets are skewed toward men. Indeed, there are substantial gender disparities in the ownership,[4] control, and use of land, livestock, and savings. For example, Deere et al. (2013) rely on individual-level asset data and find that married women in Ghana own only 19% of the couple's total wealth, and this gender asset gap is more pronounced in rural than in urban areas. The gender gap in physical assets, such as the home residence and land, is larger than the gap in financial assets, including formal and informal savings – though these types of assets make up a smaller share of overall household wealth (Deere et al. 2013).

Agarwal (1994) argues that gender differences in the ownership and control over property serve as the chief determinant of gender inequality. Addressing the gender gap in property rights can provide a key pathway toward women's economic empowerment.

There are three principal reasons why strengthening women's property rights could improve development outcomes. First, the gaps in ownership, control, and use have implications for poverty and shared prosperity, since unequal property rights can lead to intra-household inequality in wealth. Women's relative asset inequality can also shape their long-term wealth accumulation and poverty dynamics. As Quisumbing et al. (2011) observe, men and women enter into marriage with different asset levels (with the imbalance in favor of men on average), they accumulate assets at different rates (contributing to a widening of that imbalance), and they acquire different portfolios of assets on average. In a study of four countries

Overlap with the Gender Innovation Lab's Other Thematic Areas & the World Bank Group's Gender Strategy

The World Bank's Gender Innovation Lab (GIL), which tests innovative and scalable interventions to address gender inequality in the economic sectors, aims to deepen the global knowledge base on gender and women's economic empowerment. The theme of this White Paper, property rights, encompasses several topics that relate to each of the other GIL focal areas. This White Paper will address some of these linkages. However, other areas – such as the importance of land for agricultural productivity, the role of savings or in-kind asset transfers in fostering women's entrepreneurship, and the nexus of social protection, women's assets, and empowerment – will receive a deeper examination in companion White Papers on these respective topics.

Moreover, this White Paper explores a set of priority questions that directly relate to the World Bank Group's 2016-2023 Gender Strategy, which identifies the removal of barriers to women's ownership and control over assets as a key pillar.

[2] The risk of savings capture by a spouse is particularly salient for women, who tend to have lower bargaining power than men within households.

[3] One-third of these account holders (12% of adults) in Sub-Saharan Africa has a mobile money account (Demirguc-Kunt et al. 2015).

[4] A focus solely on ownership rights over assets would be incomplete. The literature on property rights underscores the variety of ownership and control types that can be exercised over a given asset. These "bundles of rights" can take a number of forms, including: use rights; the right to use any earnings or returns obtained from the asset; the right to manage and exclude others from using the asset; and the right to transfer a given asset (Di Gregorio et al. 2008).

– including two in Sub-Saharan Africa – Quisumbing and Maluccio (2003) find persistent evidence of marital asset inequality. Dillon & Quiñones (2011) analyze the long-term changes in relative asset positions of women and men in Kaduna State, Nigeria, and find evidence of growing asset inequality. Men tended to enjoy higher relative price increases on the assets – particularly livestock – that they held, while the value of women's assets, such as jewelry and durables, did not grow as quickly.

Second, the inequality in ownership, control, and use of productive assets can lead to allocative inefficiencies, which are costly in terms of lost economic output and productivity growth. In Ghana, Goldstein and Udry (2008) show that women's insecure property rights can lead to economic inefficiencies and a considerable loss of potential output. Women have lower social and political standing and thus face a higher risk of asset expropriation. As a consequence, women under-invest in their land and realize substantially lower agricultural yields than their husbands on average (Goldstein and Udry 2008).[5] Duflo (2012) also links the costly and inefficient gender allocation of resources on agricultural plots in Burkina Faso (Udry 1996) to women's relative lack of property rights, noting that a wife could rent her land to her husband to increase – via more intensive input use – overall household productivity. Yet the wife's relatively weaker property rights prevent her from pursuing such an arrangement that could make all household members better off.

Third, this inequality in ownership, control, and use of productive assets can further impede women's control over household resources and spending decisions, with welfare implications for this generation and the next one (World Bank 2011). While the first wave of evidence on the links between women's control over resources and within-household outcomes relied mostly on data sets that could not account for unobserved factors,[6], recent evidence establishes a stronger causal relationship.[7] For example, a growing literature provides strong evidence of the lack of income pooling within households in developing countries (Attanasio and Lechene 2002; Qian 2008), including in Sub-Saharan Africa.[8] Evidence from Côte d'Ivoire shows that women and men respond differently to exogenous changes in relative income: household spending tilts more toward food expenditure and female private goods following an increase in women's agricultural income, while a comparable increase in men's income is instead put towards alcohol, tobacco, and male private goods (Duflo and Udry 2004). Evidence from South Africa suggests that there may also be gender differences in preferences.[9] Duflo (2003) examines the impact of a pension program in the country and uncovers a differential impact on boys and girls: putting resources in the hands of women led to improved anthropometric status of girls (though this effect is only significant for maternal

[5] Women's insecurity and limited usufruct rights may also constrain the efficient functioning of asset markets, particularly for land (Holden and Bezabih 2008; Holden, Deininger, and Ghebru 2011).

[6] For example, evidence from Ghana suggests that a woman's asset position within the household can influence that household's spending pattern. Doss (2006), in an analysis of two rounds of nationally representative data from Ghana, finds that a woman's relative share of land, savings, and business assets was significantly correlated with household expenditure decisions. An increase in women's relative asset share (particularly land assets) was associated with an increased share of household spending on food and education.

[7] Doepke and Tertilt (2011) summarize the key findings from the literature on women's access to resources and household expenditure patterns. They find robust evidence that: households do not pool income; an increased female budget share is associated with increased spending on children; and an increased male budget share is linked to increased spending on alcohol and tobacco (Doepke and Tertilt 2011).

[8] Helping deepen women's asset base can also help cushion them from shocks, particularly in countries such as Ethiopia, where spouses do not pool risk (Dercon and Krishnan 2000).

[9] Doepke et al. (2012) point out that perceived gender differences in preferences could instead be driven by existing economic and legal gender inequalities. For example, women – who face higher barriers to saving than men – may instead spend more on their children as a form of self-insurance for the elder years.

grandmothers). The conclusion from this body of research points to a strong potential for improving household outcomes through the strengthening of women's command over resources.

The remainder of this White Paper review is presented as follows. **Section II** offers some stylized facts on the degree to which women's and men's property rights over land, livestock, and savings differ in Sub-Saharan Africa. In **Section III**, we examine the potential drivers – related to contextual factors and endowments – of the gender gap in property rights. **Section IV** presents the conceptual framework and outcomes of interest. **Section V** takes stock of the gender-differentiated evidence from rigorous impact evaluations of programs, interventions, and legal changes related to property. We conclude the White Paper in **Section VI** by outlining the pressing knowledge gaps and GIL's frontier research agenda around gender and property rights in Sub-Saharan Africa**.**

II. Gender gaps in the ownership, use, and control of productive assets

This section documents the existence – and magnitude – of gender gaps in the ownership, use, and control of land, livestock, and formal savings across Sub-Saharan Africa. The information is presented by productive asset category.

Land

The existence of a stark gender gap in women's ownership, use, and control over land is well established. Women in Sub-Saharan Africa are less likely than men to report owning land or having documented ownership over land, they own and manage less land overall, and they farm smaller agricultural plots (C. Doss et al. 2015). For example, in all six of the African countries for which LSMS-Integrated Surveys on Agriculture data are available, the share of land owned solely by men is greater than that of women. The ratio of documented land area under male versus female control ranges from 2 to 1 in Malawi and Uganda to 12 to 1 in Niger (C. Doss et al. 2015).

Women have also greater tenure insecurity over the land that they use relative to men (Goldstein and Udry 2008; Goldstein et al. 2015). In Rwanda, for example, female household heads experience lower levels of tenure security than men, which constrains their willingness to make or maintain investments in structures such as bunds, terraces, and dams (Ali, Deininger, and Goldstein 2014). And gender differences in tenure and land characteristics can also influence productivity outcomes (World Bank and The ONE Campaign 2014).[10] In Niger, for example, men enjoy higher returns – in terms of increased farm productivity – than women to land ownership and changes in plot elevation, suggesting that differences in tenure and land quality contribute to the country's large gender gap in agriculture (Backiny-Yetna and McGee 2015).

[10] While some studies suggest that men and women also use land of different quality (e.g., soil fertility levels), the limited evidence drawn from objective measures of quality is not yet conclusive. In Ghana, there were differences in organic soil matter between male- and female-managed plots but these differences did not influence yield outcomes (Goldstein and Udry 1999). A small study in Uganda found no difference in soil fertility levels between husbands and wives in the same households (Nkedi-Kizza et al. 2002).

Livestock

There is ample evidence in support of a gender gap in livestock holdings – particularly at the household level.[11] Male-headed households in the FAO's RIGA (Rural Income Generating Activity) database have larger livestock holdings than female-headed households in Ghana, Madagascar, Malawi, and Nigeria (FAO 2011a; FAO 2011b). In Mali, only 39% of female-headed agricultural holdings have any cattle, compared to 68% for male-headed holdings (FAO 2011a). Covarrubias et al. (2012) conducted a detailed descriptive analysis of livestock using household data from the Tanzania National Panel Survey. They find that rural male-headed households are more likely than their female-headed peers (65% vs. 51%) to report any income from livestock activities and they manage herds that are a third larger than female-headed household herds (Covarrubias, Nsiima, and Zezza 2012).[12]

Women's concentration in small-scale production is also well documented (FAO 2011b).[13] Covarrubias et al. (2012) find that the composition of female-headed household's herds is weighted more toward small animals and less toward cattle when compared with those of male-headed households.[14] A similar pattern, in which men keep large animals while women keep smaller ruminants and poultry, is observed in other contexts in Africa (FAO 2009).

Gender gaps in the ownership and control of livestock assets likely influence women's access to markets as well. While there is variation across contexts, even when women are involved in livestock production, they tend to be less involved then men in the marketing of livestock or decisions on how to use the revenue (Kristjanson et al. 2014). In their analysis of livestock market participation across three countries in Eastern Africa, Waithanji et al. (2013) find that, while women were more likely to sell the products that they managed (e.g., chickens, eggs, milk), men made up the bulk of the share of cattle and large livestock sales. Time and mobility constraints may also limit women's market participation: the authors found that women were more likely to sell their products at the farm gate, while men were more likely to rely on outside markets.

Savings

Formal savings rates – particularly in rural areas of Sub-Saharan Africa – remain low, as under-supply remains constrained by steep transaction costs, regulatory hurdles, and a lack of trust (Karlan, Ratan, and Zinman 2014). Savings demand is further dampened by unfavorable – and sometimes negative – real interest rates, deposit requirements, distance to deposit-receiving institutions, and the behavioral and liquidity constraints of poor households (Jack 2013).

Meanwhile, there are clear divides in terms of gender and financial inclusion in Sub-Saharan Africa. More than 38% of men hold some type of account compared to 30% of women (Demirguc-Kunt et al.

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[11] Evidence on the individual-level gender gap in livestock is limited due to the lack of data on intra-household ownership and control of livestock (Njuki and Sanginga 2013). As a consequence, we know very little about any potential individual-level gender differences in livestock productivity (Kristjanson et al. 2014).

[12] Interestingly, Covarrubias et al. (2012) do not uncover gender gaps in terms of animal management within male-headed households. Nearly two-thirds of households have joint male-female management of livestock, while 18% have exclusively male managers and 17% have only female managers. Yet households with only female managers (including in female-headed households) report lower levels of input use (e.g., animal fodder) and animal vaccinations, and lower values of live animal sales than male managers.

[13] There may also be gender differences in the quality of livestock breeds used by women and men (Herrero et al. 2013), but the evidence in support of this argument is inconclusive.

[14] As Covarrubaias et al. (2012) note, gender differences in cattle ownership may be linked to supervision and labor constraints that female-headed households face relative to male-headed households -- leading to a preference for smaller animals that can remain near the home for supervision.

2015).[15] And this gap is similar when restricting to accounts at a formal institution (33% vs. 25%) and savings at a formal institution (18% vs. 13%) (Demirguc-Kunt et al. 2015).[16] There is also a gender gap in Africa's rapidly growing mobile money sector: 10% of women hold such an account, compared to 13% of men (Demirguc-Kunt et al. 2015). Nevertheless, men and women save at roughly comparable rates (58% vs. 62%) – which suggests that women face a particular set of constraints that limit their access to formal channels.

III. Underlying gender constraints to women's ownership, use, and control of property

This section assesses the available evidence on potential constraints to women's ownership, use, and control of productive assets in Sub-Saharan Africa. **Figure 1** presents the Gender Innovation Lab's harmonized constraints framework.[17] The constraints in **bold** represent those underlying factors that give rise to gender differences in the ownership, use, and control of property. These constraints have been identified in the literature as potentially binding factors that impede women's access to and control over property. The first set of constraints relates to the norms and institutions that frame women's and men's access to and control over property. The second set of constraints relate to gender differences in endowments that may limit women's ownership, control, and use of these assets. The degree to which these constraints may bind on women's property rights varies both by context and by type of asset (land, livestock, and financial accounts).[18]

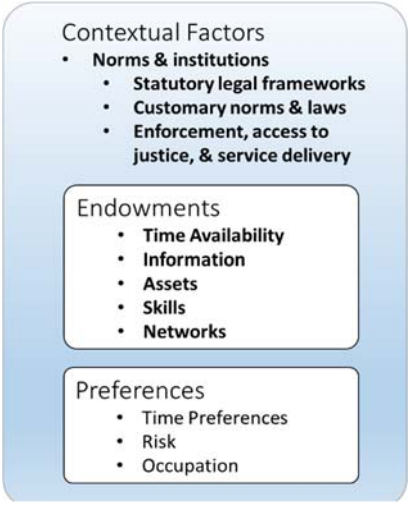

Figure 1. Gender constraints framework

Gender constraints: Contextual factors

- **Norms & institutions**
  - ***Statutory legal frameworks***

Formal legal frameworks – including family codes, land and inheritance laws, and property regimes – in many countries across Sub-Saharan Africa often give men primacy of place or, if gender-friendly, are ignored because customary law holds *de facto* sway over formal law (Hallward-Driemeier and

[15] The ability to accumulate savings is conditioned on (among other factors) one's access to income. Only 13% of adult women in Sub-Saharan Africa received any wages in the previous 12 months compared to 21% of adult men (Demirguc-Kunt et al. 2015).There do not, however, appear to be stark gender differences in the individual-level receipt of agricultural income, government transfers, or remittances (Demirguc-Kunt et al. 2015).

[16] The available nationally-representative data sources do not allow us to assess whether men have larger savings balances than women on average.

[17] See the Africa Gender Innovation Lab website (http://www.worldbank.org/en/programs/africa-gender-innovation-lab) for details on the Lab's work.

[18] The constraints related to these productive asset gaps are likely inter-related. Take land and livestock, for example. In contexts where women's access to land is particularly circumscribed, women may instead choose to rely on livestock assets for their livelihoods (FAO 2011b). Limited land access may also limit women's ability to manage herds, given the need for larger expanses of grazing land for these animals. Lack of documented land ownership, in some contexts, could limit women's access to credit for the purchase of productive assets. Similarly, a lack of liquid savings can impede women's access to land or livestock through market channels.

Hasan 2012).[19] These frameworks impede women's ownership, use, and control of productive assets in a number of ways. [20] For example, in an analysis of legal frameworks in Sub-Saharan Africa, Hallward-Driemeier and Hasan (2012) found that under half of all countries make specific provisions for the right of women to own land, and very few countries – particularly low-income countries – allow for the co-ownership of land.

The default legal distribution of marital property in a given country also plays a role in women's access to property. Marital property regimes govern the allocation and control of assets during marriage and the division of those assets upon the dissolution of marriage (in the event of death or divorce). The default property regime can partially determine the relative bargaining power of husbands and wives and the socio-economic outcomes of household members in a given context. Three of the most common types of default regimes in Sub-Saharan Africa and elsewhere include separation of property (in which all property acquired prior to and during marriage remains individually owned), community of property[21] (in which all property acquired after the union is owned equally, except for individual inheritance or gifts), and customary regimes[22] (Hallward-Driemeier and Hasan 2012).

Default community of property regimes tend to be more common in countries with a civil law tradition, while default separate property regimes are more common in countries with a sizable share of polygamous unions and/or a common law tradition (Hallward-Driemeier and Hasan 2012). Although community of property regimes, which can be full or partial in nature, tend to be more favorable toward women, there are some exceptions. For example, despite having a partial community property regime, five countries[23] in Sub-Saharan Africa give husbands the right to administer jointly-owned property (World Bank and IFC 2015).

The default property regime may also influence women's access to formal savings accounts. The authors of the World Bank's *Women, Business and the Law 2016* report uncovered a correlation between a country's default property regime and financial inclusion levels (World Bank and IFC 2015). They found that countries with a community of property regime had a higher proportion of adult females, on average, with an account at a financial entity. When comparing those community of property regime countries with and without husband provisions (and controlling differences in gross

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[19] Customary law is officially recognized in the constitutions of 27 of 47 countries in Sub-Saharan Africa (Hallward-Driemeier and Hasan 2012). Eight of those countries have constitutions that explicitly exempt customary law from principles of non-discrimination (Hallward-Driemeier and Hasan 2012). Since formal laws tend to accord women stronger property rights, these patterns can contribute to gender inequality in the ownership and control of property.

[20] There are, however, a number of efforts to promote gender parity in property rights and other domains. Countries in Sub-Saharan Africa have initiated 18 legal and policy reforms in the previous two years to strengthen women's economic empowerment (World Bank and IFC 2015).

[21] Community property regimes can be further divided into partial (with pre-marriage assets treated as separate and post-marriage assets as joint), full (with pre- and post-marriage assets held jointly), and deferred (with all assets held separately until dissolution of the marriage, when full or partial regimes apply) community property regimes (World Bank and IFC 2015).

[22] Default customary regimes are less common: only three countries in Sub-Saharan Africa have customary regimes (Botswana, Burundi, and Swaziland), but many other countries include statutory provisions for customary marriages (Hallward-Driemeier and Hasan 2012).

[23] The following countries have a partial community of property regime while granting husbands the right to administer jointly-owned property: Cameroon, Chad, Democratic Republic of Congo, Republic of Congo, and Côte d'Ivoire. Swaziland, which has no default property regime, also grants husbands the right to administer marital property.

national income), the authors found that financial account penetration was at 57% among women in countries that allow for joint control, and only at 18% among women in countries where husbands administer marital property (World Bank and IFC 2015).

Other statutory restrictions further impede financial inclusion. In Niger, banks are required to inform male spouses when a married female tries to open a bank account with funds received from her husband (World Bank and IFC 2013). In five countries in Sub-Saharan Africa (the Democratic Republic of Congo, Gabon, Mali, Niger, and Togo), a married woman is legally obliged to obtain her husband's consent to set up a bank account or withdraw funds obtained via her husband (Hallward-Driemeier and Hasan 2012). Hallward-Driemeier and Hasan (2012) also note that, in many other countries where this not officially stipulated as law, banks are allowed to require a husband's signature for a wife's transactions.

Head of household provisions, meanwhile, also restrict women's ownership and control over property. Men are automatically designated as the head of household in nearly half of the low-income countries in Sub-Saharan Africa (Hallward-Driemeier and Hasan 2012). These requirements, typically included in family codes or other statutes of civil law countries, can restrict women's access to government services – particularly for land titling and land redistribution programs.

In addition, formal inheritance laws in several African countries leave women, including widows and daughters, with unequal inheritance rights. Default marital regimes typically grant widows less than half of the estate, including land (with a usual range of 0 to 30 percent) – and these restrictions are even tighter under customary law (World Bank 2011).[24] In Ghana and Zambia, for example, the laws guiding intestate transfers to women (for those lacking in will documentation) do not include family or lineage property, thereby limiting widows' access to land (Hallward-Driemeier and Hasan 2012).

The complexity of legal frameworks may also limit women's property rights. Changes to a legal framework do not necessarily translate into changes in women's property rights unless they can appropriately address the challenges of legal pluralism – in which statutory law operates and overlaps with customary and religious legal systems (Lastarria-Cornhiel et al. 2014). The ambiguity of legal pluralism, which allows for the co-existence of statutory and customary land tenure regimes, also provides scope for forum-shopping in ways that could further constrain women's use and control of land. For example, there are five distinct – yet overlapping – legal regimes for marriage in Kenya (civil, Christian, Islamic, Hindu, and customary), with differing and sometimes conflicting rules over the merging and disposition of marital assets (Deere and Doss 2006). Such arrangements can further contribute to uncertainty around women's rights to property.

- ***Customary norms and laws***

Customary laws over property tend to prevail over formal laws in practice in Sub-Saharan Africa – particularly in rural areas (Pande and Udry 2006). Property rights over land and other assets typically consist of a complex set of overlapping claims held by multiple members of the household and community. Access and use rights over land, for example, are embedded within social relations, and these rights are conferred through one's position and membership in social groups or via exchange (Berry 1989). Men in rural areas, who are viewed as autonomous members of the

[24] Widows may be particularly vulnerable to unequal statutory protections on inheritance. Nine countries (Burundi, Guinea, Kenya, Mauritania, Senegal, Sudan, Swaziland, Tanzania, and Uganda) across Sub-Saharan Africa fail to provide equal inheritance rights to widows (World Bank and IFC 2015). Peterman (2012) analyzed Demographic and Health Survey (DHS) data from 15 countries in Sub-Saharan Africa and found that, among widows, only 47% report having inherited any assets from their deceased spouse.

community and lineage, are generally perceived as the owners or care-takers of land and are accorded a wider of span of authority over the asset. Women's customary land rights, meanwhile, are generally limited to use rights – with restrictions on transfer, long-term investments, etc. – and are determined by their relationship with a male spouse or relation in the kin group or community.[25] In addition, the patrilocal residence patterns of most rural households, whereby women typically migrate to their husband's community for marriage, further undermines their recognition as a member of the community or their husband's lineage (Joireman 2008).

Gender differences in property rights under customary settings also arise *within* households. In Ghana, women have less political power within local hierarchies and thus face a greater risk of land expropriation, leading them to fallow their land for shorter periods than men (Goldstein and Udry 2008). These women's lower levels of tenure security and investment have costly consequences, leading wives to achieve substantially lower farm yields than their husbands.

Customary norms also shape and constrain women's access to and use of non-land assets. For example, norms around wives sharing income and other resources with their husbands may inhibit women's savings activity (Anderson and Baland 2002; Schaner 2015c). And social norms to share resources with other family members may also dampen women's asset accumulation. Jakiela and Ozier (2015) conducted a field lab experiment which offers insights on the social pressures that lead women to sacrifice economic returns. Women who received larger endowments through the experiment were more likely to forego investment earnings and hide their income when their relatives were in attendance. Meanwhile, men did not hide their income in the presence of their kin network.

Norms over livestock ownership may limit women's access to and control of this productive resource as well. In Ethiopia, rural smallholders rely heavily on draught animals for agricultural production. Yet cultural norms discourage women from using oxen (Holden, Deininger, and Ghebru 2011). Nationally-representative data from Ethiopia show that female plot managers use significantly fewer oxen per hectare on their plots than male managers (Aguilar et al. 2014). These livestock differences can translate into differences in productivity for women and men (Pender and Gebremedhin 2008).[26]

Furthermore, women's tenuous customary rights over land and other assets can evaporate in the event of the death of a spouse. In an analysis of 15 countries across Sub-Saharan Africa, Peterman (2012) finds that widows on average inherit no assets – including land – in more than half of these countries. Women in customary contexts also face threats to dispossession through divorce. In Ethiopia, for example, Fafchamps and Quisumbing (2002) find that more than half of men anticipate claiming all of the household land assets in the event of a no-fault divorce. Even after maintaining control over land, these women still face threats to expropriation. Households headed by widowed and separated women in Uganda, for example, were more likely than male-headed households to experience land conflict on their plots (Deininger and Castagnini 2006).

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[25] Men hold a wide set of rights over customary lands via their membership in corporate groups, but these rights do not generally include the right to transfer the land without authorization from the group itself (Lastarria-Cornhiel et al. 2014). Platteau (2000) argues that norms opposing women's ownership rights over land stem from fears of land being sold to families outside of a man's lineage.

[26] The productive potential of livestock holdings is non-trivial. Across the six countries included in the World Bank's LSMS Integrated Surveys on Agriculture program, approximately 32% of households had animals suitable for traction, as compared to 1% of households who own a tractor (Sheahan and Barrett 2014).

And even when religious law may provide women with greater protections, customary norms may still govern the allocation of property rights. Among predominantly Muslim communities in the Senegal river valley, as Aldashev et al. (2012) note, community members tended to ignore more favorable Sharia law provisions on the inheritance share for girls and instead followed patrilineal inheritance customs. The authors posit that women refrained from challenging this norm via customary institutions since it would jeopardize their social standing and protections afforded by customary law (Aldashev et al. 2012).[27]

Nevertheless, customary norms in some settings may provide sufficient flexibility for women to access land and other key assets, even in the presence of tenure insecurity. Indeed, customary norms are mutable and can evolve toward more secure, individualized rights for women. In traditionally matrilineal areas of western Ghana, for instance, women slowly gained access to land after the introduction of a labor-intensive cash crop. Husbands transferred parcels of land to their wives in exchange for farm work on cocoa fields – leading to an expansion of women's land rights (Quisumbing et al. 2001).

- ***Enforcement, access to justice, and service delivery***

Women may face obstacles in adjudicating claims via formal or customary institutions that are shaped in part by the social norms and biases of the local context (World Bank 2011). Indeed, national and local administrative and customary institutions, in which men are over-represented, may not make decisions that advance's women's rights to productive assets (Meinzen-Dick et al. 1997), even when the statutory legal framework is favorable toward women.[28]

A related factor may be the lack of female representation in formal judicial processes. Legal systems themselves in Sub-Saharan Africa are characterized by under-representation of female justices and lawyers (World Bank and IFC 2015). In Kenya, for example, women made up only 19 of the 51 judges on Kenya's High Court in 2009, and none of the 12 Court of Appeal judges was female (Hallward-Driemeier and Hasan 2012). In Cameroon, women made up only 22% of judges in the Magistrates' court and 19% of the courts bailiffs and process servers in 2009 (Hallward-Driemeier and Hasan 2012).

Differential adjudication of customary law may further contribute to gender differences in property rights. Customary courts and other local decision-making bodies tend to be male-dominated and issue rulings that are less favorable toward women (Hallward-Driemeier and Hasan 2012).[29] In Uganda, Khadiagala (2001) argues that the establishment of local councils, designed in part to resolve disputes in a consensual manner, failed to protect women's customary land rights. Local level institutions might also be insufficiently aware of the statutory laws that are designed to safeguard women's property rights.

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[27] Under customary arrangements, a woman is accorded the right to return and work on her father's land in the event of divorce, or remain on her own land in the event of widowhood until her son reaches adulthood (Aldashev et al. 2012).

[28] Agarwal (1994) distinguishes between the legal and social recognition of rights and the fact that a recognized right in one domain might not necessarily be an enforced right.

[29] Sandefur and Siddiqi (2013) examine household data from Liberia and find that women engage in forum shopping: female plaintiffs are much more likely to use formal systems of adjudication of land and other disputes when the suit is against a male (and opt for customary institutions when suing another female). They argue that men's relative privilege in customary settings may lead women to seek out formal means of settlement.

And there are other hurdles that can prevent women from seeking legal recourse: In the Democratic Republic of Congo and Liberia, women still are required to obtain permission from their spouses before initiating a legal proceeding (and, for the DRC, to register land) (Hallward-Driemeier, Hasan, and Rusu 2013). Women may also be less aware of their rights or lack the capital (both financial and social) to undertake a potentially costly and lengthy exercise. Literacy, mobility, and time constraints may further dampen women's willingness to defend and adjudicate their claims to property (World Bank 2011).

And women may also be at a disadvantage when trying to access government services to improve property rights. For example, there may be gender differences in access to land administration services, particularly given the default selection of the household head for documentation (World Bank, FAO, and IFAD 2008).[30] Lastarria-Cornhiel (1997) argues that the individualization of private property during the land formalization process, with its emphasis on the male household head, can lead to an erosion of women's secondary rights to use and cultivate land within the household. There is, however, little empirical evidence from impact evaluations to support this assertion.[31]

Gender constraints: Endowments

- **Time availability**

Women's household and reproductive roles place limits on their time availability, and female land managers in particular tend to live in smaller, more labor-constrained households (World Bank and The ONE Campaign 2014). The risk of expropriation is a key channel through which property rights can affect economic outcomes. In a context with insecure or uncertain tenure arrangements, individuals may engage in strategic – yet inefficient – behaviors to guard their claims to property. For example, insecure property rights can lead one to spend more time than is necessary (for production alone) on agricultural labor to serve as a signal of one's claim over land and to lower the risk of expropriation (Besley and Ghatak 2010; Houngbedji 2015). Experimental evidence from Benin has shown that, when women face differential tenure security over their plots of land, they reallocate their labor and production toward less secure land – and this strategy has adverse consequences for their overall yields (Goldstein et al. 2015). Time availability may also limit women's participation and control over other productive assets as well. For example, Waithanji et al. (2013) argue that women's time constraints, among other factors, likely impede their participation in livestock markets.

- **Information**

Even when the legal and regulatory environment is favorable toward women, they may be less aware of their rights under existing law and may thus be less likely to exercise those rights (Deininger and Feder 2009). Indeed, the sex-segregated nature of women's information networks and the smaller size of these networks in Africa may impinge on women's ability to benefit from policy and regulatory reforms (World Bank and The ONE Campaign 2014).

The available evidence suggests that there is indeed a gender gap in the *awareness* of property rights in Africa. Kumar and Quisumbing (2015) analyzed nationally representative data from Ethiopia following land certification and family law reforms. They found that female-headed households were significantly less likely to have heard of the country's land registration process (90% vs. 75%), were

[30] While there are clear gender differences in access to agricultural extension services (World Bank and IFPRI 2010), the evidence on possible gender gaps in livestock extension and veterinary services is much less robust.
[31] Yet there is stronger evidence of gender differences in service delivery *across* households. Keswell and Carter (2014) recently examined the impact of a market-oriented land redistribution program in South Africa. When comparing approved households in the pipeline to receive a grant, they found that female-headed households were significantly less likely than male-headed households to receive a grant for the purchase of land.

less likely to be aware of public information meetings prior to their occurrence, and were less likely to receive written materials about the intervention (Kumar and Quisumbing 2015). Similarly, in Benin, female heads of household were less aware of the country's certification program when compared with male heads, and they were less likely to attend informational meetings about the program (Goldstein et al. 2015). And, in the wake of Uganda's 1998 Land Act, which lifted non-discrimination exemptions for customary law, females under customary land tenure regimes reported lower levels of overall knowledge about their land rights than males (Deininger, Ali, and Yamano 2008).[32] Nevertheless, the extent to which these knowledge gaps translate into differences in property rights has not been established.

- **Assets**

While it may seem tautological, gender differences in capital assets may widen the gender gap in women's ownership, use, and control of property. In particular, gender differences in credit access may limit women's access to productive assets through market channels. For example, to acquire livestock, women tend to rely on gifts (from a spouse or family), inheritance, grants from development projects, and market purchases (Kristjanson et al. 2014). However, women may face added barriers not only to purchase large pack animals, but also to maintain the animals with feed, inputs, and veterinary services. Similarly, women's access to land markets could be undermined by a relative disadvantage in credit or savings availability.

Gender differences in asset levels may also affect a woman's access to formal savings via a bargaining channel, to the extent that a woman's relative asset position determines her bargaining power within the household. Addressing gender differences in other assets such as land could therefore expand women's access to and control over savings products.

- **Skills**

Gender differences in skills and financial literacy could also be a factor behind gender gaps in property rights – although there is relatively little evidence to support this assertion. For example, it has been argued that skills differentials in terms of livestock management and care – stemming from gender differences in training and extension access – may also shape women's ownership and control over livestock holdings (FAO 2013). And, given that financial literacy may also serve as an important constraint for financial account access (Cole, Sampson, and Zia 2011), such a constraint could bind for women in particular.[33] In addition, gaps in financial literacy may also hinder women from getting a mortgage in the few cases where mortgage markets function properly.

- **Networks**

Social networks may mediate women's access to and control over productive assets as well.[34] As noted previously, women tend to have smaller (female-dominated) networks and those networks tend to have less social and political power. Differential access to networks may be particularly salient for savings, since one's social peer groups can influence savings decisions (Karlan, Ratan, and Zinman 2014). Women with larger social networks, meanwhile, may have a higher degree of access to property. Njuki and Mburu (2013) analyzed the correlates of livestock ownership in Kenya, Mozambique, and Tanzania and found that, while group membership was not correlated with the

[32] The statistical significance levels of these gender differences were not reported.

[33] However, the causal link between savings and knowledge constraints has not been well established empirically (Karlan, Ratan, and Zinman 2014).

[34] Leveraging women's networks may also help women expand their asset base. Quisumbing and Kumar (2011) observe a positive correlation between group-targeted agro-fishery interventions and women's asset levels – along with a narrowing of the gender asset gap – using panel data from Bangladesh.

ownership of livestock, it was correlated with the number of tropical livestock units (a standardized measure of livestock) that they owned.

IV. Conceptual framework and outcomes of interest

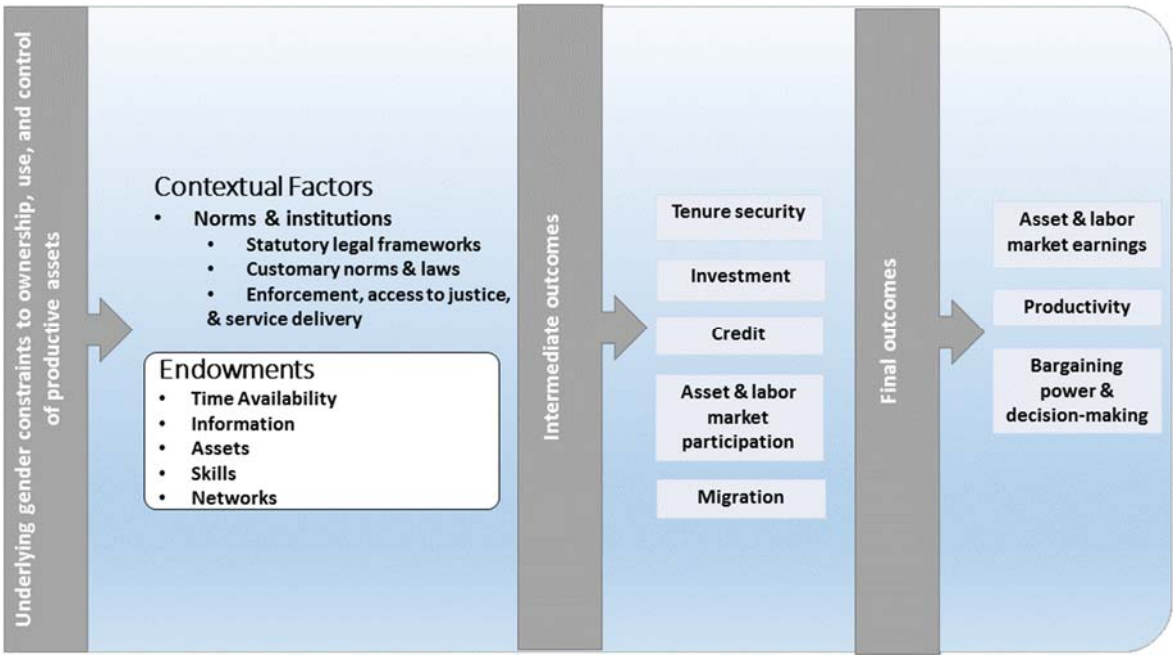

Figure 2 illustrates the conceptual framework for the Gender Innovation Lab's policy research agenda on gender and property rights. Gender constraints related to endowments, situated against the backdrop of a discriminatory set of norms and institutions, engender a pronounced set of differences in men's and women's access, control, and use of property in Sub-Saharan Africa. The framework assumes that addressing at least one or some sub-set of these constraints – which may bind at different points, in different settings, and for different types of assets – could lead to the key

intermediate and final outcomes discussed in this section.[35] This framework will guide GIL's future knowledge and research agenda on gender and property rights.[36]

[35] Measuring the extent to which these constraints change women's ownership, control, and use of productive assets is of course a first step; the set of initial indicators (e.g., joint savings account adoption, share of household land under female control, total assets under female control, female share of inheritance received) to be used for each GIL study will vary by asset and intervention type.

[36] Property rights interventions can of course influence a number of other outcomes not included in the framework in

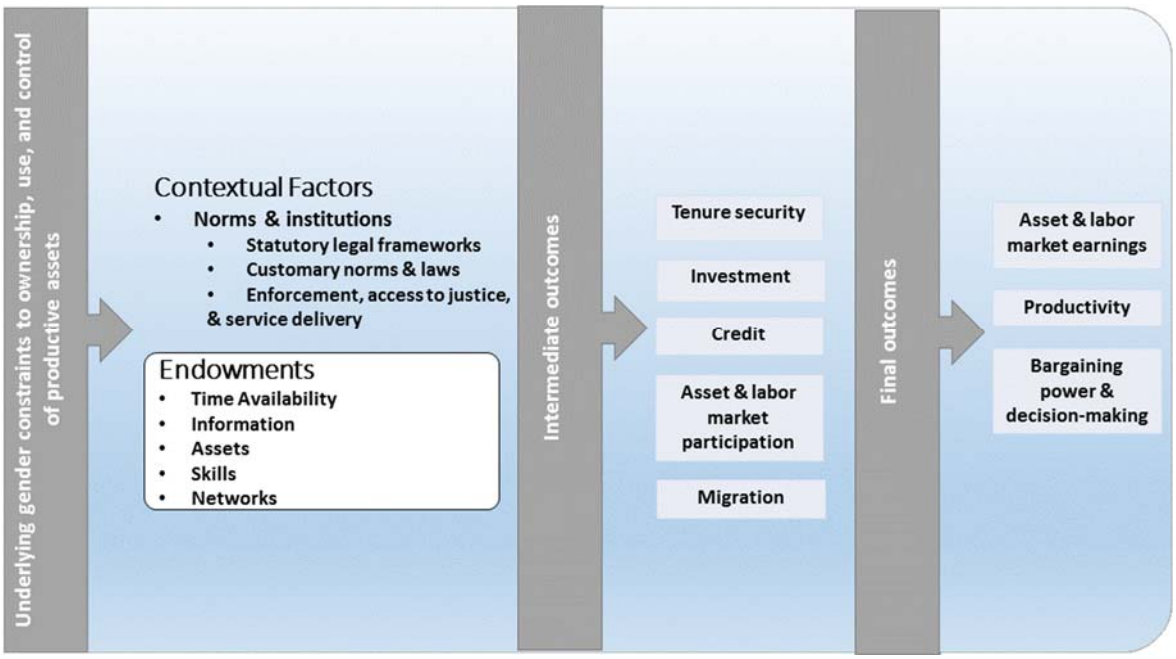

Figure 2. For instance, livestock production could yield nutritional impacts – and these effects may vary by gender (Jin and Iannotti 2014). Nevertheless, the framework's selected outcomes are limited to those which contribute to women's economic empowerment, which is the focus of GIL's work program.

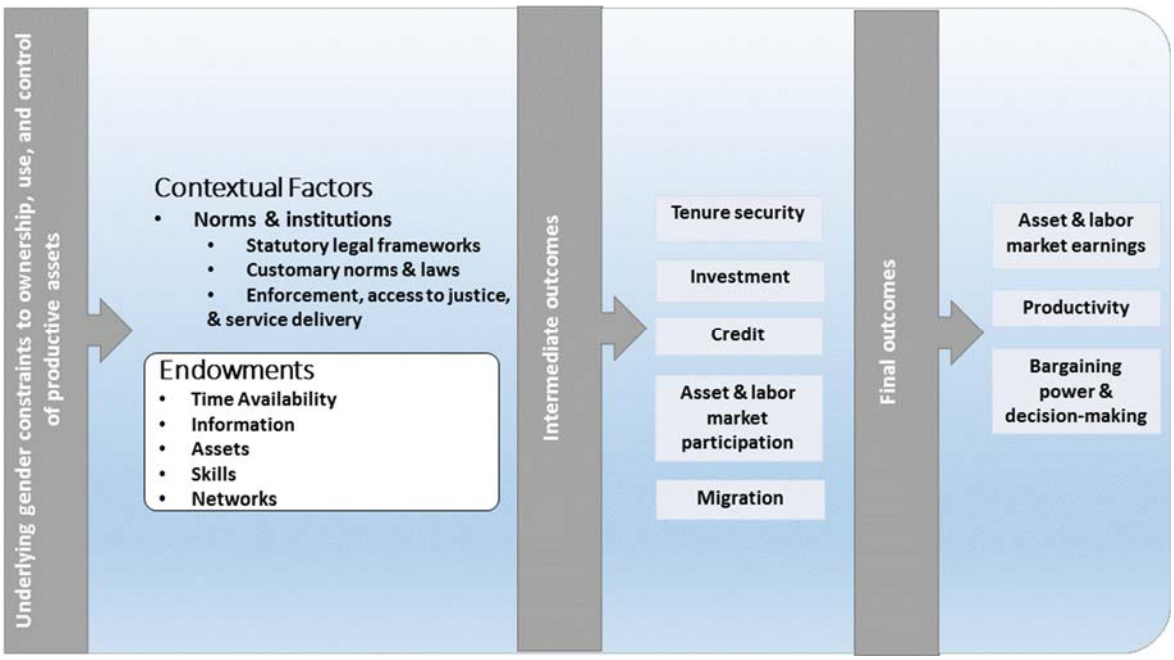

Figure 2. Gender and property rights conceptual framework

Intermediate outcomes

Tenure security and investment: The theoretical and empirical links between property rights and tenure security and investment are well documented – particularly for land assets. Moreover, there is a growing body of evidence pointing to gender differences in the tenure and investment impact of property rights interventions (e.g., Ali et al. (2014)).

Credit: The empirical evidence on a credit impact – let alone a gender-differentiated credit impact – of land formalization interventions is thin, particularly in Sub-Saharan Africa (Deininger and Feder 2009; Collin, Sandefur, and Zeitlin 2015). This holds true even for urban areas of developing countries (notably in Latin America) where one would anticipate a collateralization effect (Galiani and Schargrodsky 2011). However, given its importance in the theoretical literature on the possible channels of impact of property rights interventions and its relevance to women's economic empowerment, this outcome still warrants attention.[37]

Asset market participation: Asset markets, such as those for land and livestock, may offer a pathway for some women to obtain productive resources or generate earnings from the assets that they own and/or control. Deepening women's access to land markets, for example, can contribute to overall productivity and efficiency and even help households migrate and transition out of rural agriculture (World Bank 2007). But even when women can engage in land rental markets, they face challenges and risks. Female-headed households in Ethiopia, for example, were more likely to rent out their land to less productive farmers than male landlords (Holden and Bezabih 2008). The authors attribute this difference to the steep social costs to eviction that females face (as these farmers were in-law

[37] Piza and Moura (2015) use a difference-in-difference approach to test for gender differences in the impact of land titling on credit in urban Brazil. They find an increase in the overall use of formal credit, but the effect did not vary by sex of the household head.

family members), and the high transaction costs related to screening for productive tenants. The finding on women's higher eviction costs suggests that strengthening women's tenure security may also improve the efficient functioning of land rental markets (Quisumbing and Pandolfelli 2010).

Labor market participation: Property rights interventions can affect labor supply decisions – particularly when households face labor supply constraints – and this effect likely varies between rural and urban settings (Galiani and Schargrodsky 2011). A land titling intervention in urban Peru, for example, led households to increase their labor supply, but this shift was driven primarily by adult men (Field 2007). Panel data analysis from northern Tanzania also suggests that giving women stronger property and inheritance rights could be associated with improved employment outcomes. Women were more likely to work outside the home and receive higher earnings in communities that experienced positive changes in women's inheritance rights (Peterman 2011).

Yet there remain substantial knowledge gaps on the effects of land formalization interventions on labor market and self-employment outcomes, especially in rural areas (Deininger and Feder 2009). Even less is known about the gender-differentiated labor impacts of these types of interventions in Sub-Saharan Africa.[38]

Migration: A growing body of evidence points to causal links between changes in property rights and migration decisions (Chernina, Castañeda Dower, and Markevich 2014; Valsecchi 2014). Indeed, a reduced fear of expropriation following a property rights intervention may induce some households to leave their land and migrate to an area with more economic opportunities. In Mexico, de Janvry et al. (2015) found that households whose lands were certified were 28% more likely to have a migrant relative to non-certified households. Interestingly, the authors find that this positive correlation between migration and certification is significantly stronger for female-headed households, who faced higher *ex ante* tenure insecurity than male-headed households. Migration and property rights likely interact with labor force outcomes as well. Emran and Shilpi (2014) exploit historical variation in malaria incidence in rural Sri Lanka to examine the adverse effects of land market restrictions on migration and wage earnings. They find that, while restrictions on land transfer increase women's labor force participation, women also experience lower earnings – likely due to the higher costs of out-migration to areas with higher wages.

Final outcomes

Land and labor market earnings: Facilitating women's access to land, livestock, and labor markets may also help them derive additional sources of income and increase market efficiency. Deininger et al. (2015) analyze detailed household data, collected by the World Bank's LSMS-ISA initiative, from six African countries to identify correlations in land market participation. They find that women may benefit more – in terms of earnings – from the renting out of land to the average producer rather than relying on their own production. The authors hypothesize that women's lower relative tenure security is a chief impediment to their land market participation, given the heightened risk of expropriation that leasing out could entail (Deininger, Xia, and Savastano 2015). Experimental evidence from a savings intervention in Sri Lanka has also uncovered a relationship between savings deposits and increased wage income (Callen et al. 2015). Given the potential for labor market impacts of property rights interventions, it will therefore be important to measure changes in labor market earnings and test for gender differences in earnings outcomes.

[38] Labor market participation also has relevance for savings interventions. Recent experimental work from Sri Lanka demonstrates a positive link between formal savings and wage labor outcomes (Callen et al. 2015).

Productivity: Understanding the down-stream productive impacts of property rights interventions will be essential to understanding whether these programs can increase women's economic empowerment and improve household well-being. Evidence from the savings (Dupas and Robinson 2013a) and land (Ali, Deininger, and Goldstein 2014) literatures has uncovered gender differences in impact on productive investment outcomes, and new empirical work from a land formalization program in Benin shows that productivity effects can also vary by gender (Goldstein et al. 2015).

Bargaining power and decision-making: The extent to which a woman controls and owns property can also help determine her bargaining and fallback position within the household (C. R. Doss, Grown, and Deere 2008; Panda and Agarwal 2005). Empirical evidence from impact evaluations has also established this link. For example, helping women access commitment savings products has been shown to influence their decision-making power (Ashraf, Karlan, and Yin 2010). Assessments of the differential impact of property rights interventions on women and men should therefore include indicators related to bargaining power. Despite the methodological challenges related to the measurement of within-household decision-making (Peterman et al. 2015), questions around expenditure decisions and other intra-household choices can serve as proxies for women's bargaining power. Decisions around fertility will also be included under this category, as strengthening property rights has also been shown to change women's reproductive outcomes (Field 2003; Galiani and Schargrodsky 2010).

Agency and gender-based violence: Property rights interventions have the potential to influence measures of agency, including a key component of agency: freedom from violence (Klugman et al. 2014). In a recent examination of the macro-level factors associated with intimate partner violence across 44 countries, Heise and Kotsadam (2015) find that a given country's legal restrictions and practices around women's property rights are strongly (and positively) correlated with the incidence of partner violence. Using household data from India, Panda and Agarwal (2005) uncover a significant association between women's ownership of property (particularly immovable property such as land and house) and a lower risk of violence. These studies, however, cannot account for unobserved factors that may be driving the correlation between a woman's property status and her likelihood of experiencing violence.[39]

V. Impact evaluation evidence on gender and property rights

Evidence from rigorous impact evaluations can yield important insights on the policies and interventions that effectively narrow gender gaps in productive resources and enhance socio-economic welfare. This section draws on the available evidence from impact evaluations on land, livestock, and savings interventions, as well as other interventions that report impacts on land, livestock, or savings outcomes. These impact evaluations were identified through an extensive search of the academic and policy literature. We only consider impact evaluations that rely on a carefully-identified and credible counterfactual, employ an experimental or quasi-experimental design to estimate the causal impact, and report gender-differentiated effects or treatment effects on women. Whenever possible, we place an emphasis on evidence from Sub-Saharan Africa. We first synthesize the impact results of statutory and policy reforms that define the legal parameters of women's and men's property rights over land, livestock, and savings. We then present the available impact

[39] It is possible that the frictions generated from a redistribution of property rights within the household may engender a short-run increase in gender-based violence.

evaluation evidence by asset category and intervention type. A detailed summary of the impact evaluations from Africa included in this analysis can be found in the **Appendix**.

Figure 3 ties the set of interventions on property rights to the principal underlying gender constraints that these interventions address.[40] The column to the right also distinguishes between those interventions and policies for which rigorous evidence is available from Sub-Saharan Africa (bolded in black) or only available from other developing countries (bolded in brown). No rigorous gender-differentiated evidence is available for those interventions bolded in white. This visual depiction reveals that several of the programs and reforms to be examined in this section tackle multiple gender constraints (with varying degrees of success). Yet two of the potential constraints to gender equality, time availability and networks, receive comparatively little programmatic attention. In addition, the figure reveals that savings interventions tend to take as given the norms, laws, and institutions that frame women's savings behaviors, suggesting that future savings research should attempt to link changes in intra-household and community norms with attempts to improve women's control and use of savings.

[40] The list of interventions for each asset category in **Figure 3** is not exhaustive. However, the interventions presented here are those for which rigorous evidence is available and/or offers the potential to narrow gender gaps in property rights.

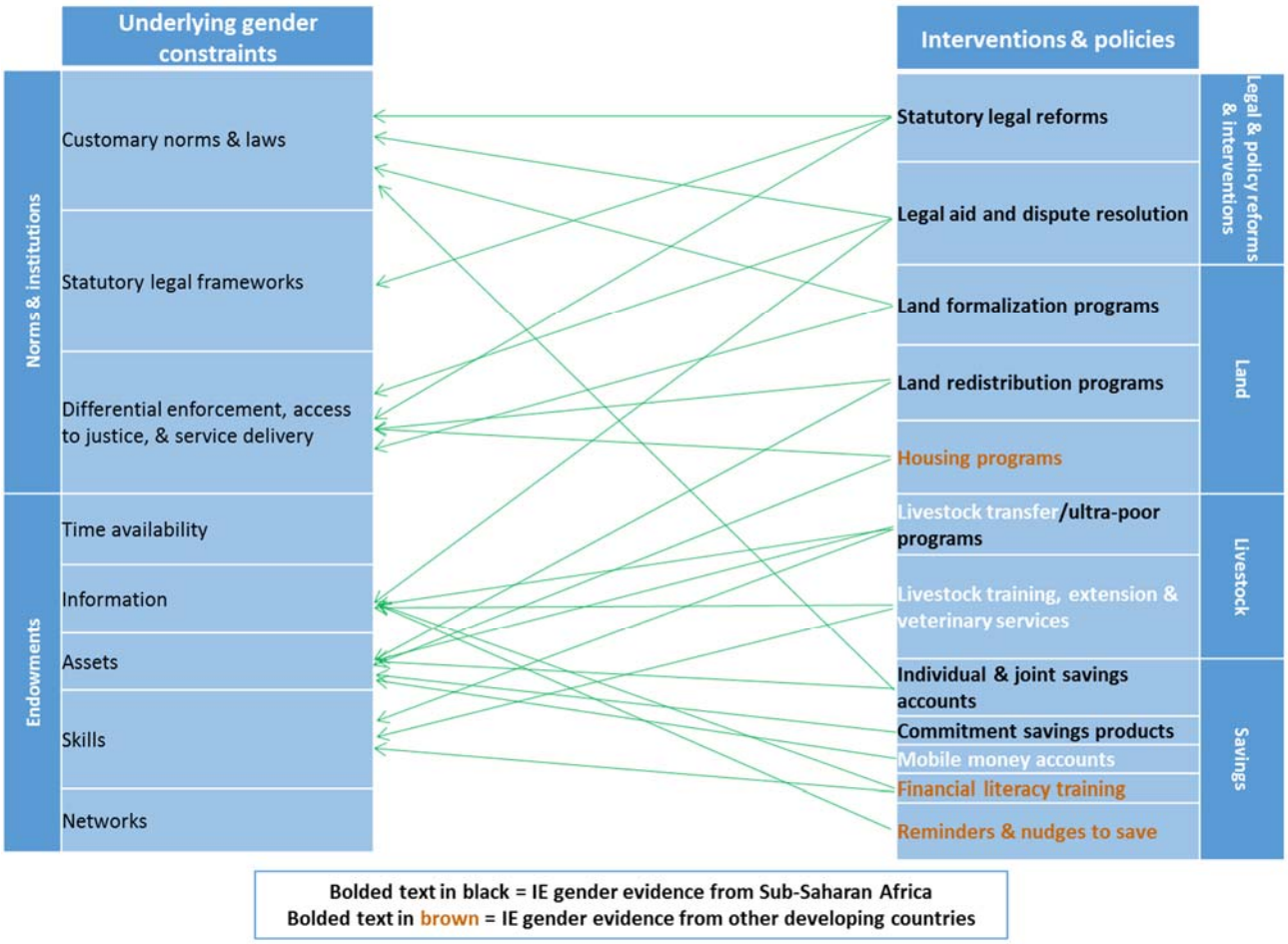

Figure 3. Constraints and evidence on gender and property rights.

Impact evaluation evidence: Legal and policy reforms and interventions

This sub-section considers the available rigorous evidence on the impact of legal reforms and legal interventions related to gender and property rights. The available impact evaluations from Sub-Saharan Africa on this topic can be found in **Appendix Table A1**.

Statutory legal reforms

There is a steady accumulation of evidence pointing to the promising impact of legal reforms on women's economic empowerment in developing countries (World Bank 2011). However, legal reforms appear to be a necessary but insufficient step toward closing the gender gap in women's ownership, use, and control of productive assets. Indeed, as **Figure 3** illustrates, while these reforms target norms and institutions that contribute to gender inequalities in property rights, they tend to ignore the underlying gender differences in endowments that also exacerbate the gap.

A few recent studies rely on quasi-experimental methods to tease out the impact of legal reforms in Sub- Saharan Africa. One example comes from Ethiopia, whose Family Code reform in 2000 lifted restrictions on women's work outside the home, conferred joint spousal rights to administer marital property, and increased in the minimum legal age for marriage. Relying on a difference-in-difference strategy, Hallward-Driemeier and Gajigo (2013) found that the reform was associated with an expansion in women's – particularly younger women's – work outside the home and paid employment. Harari (2014) recently examined the long-term impact of Kenya's 1981 Law of

Succession, which formally granted equal inheritance shares to male and female siblings. Using a difference-in-difference approach that exploits variation in pre-reform inheritance regimes, the author found that the reform is associated with higher human capital investment for women and greater say for married women within the household. La Ferrara and Milazzo (2014) uncover evidence of strategic behavior among households exposed to a change in Ghana's Intestate Succession law that effectively strengthened the inheritance rights of children living under matrilineal customary norms. Relying on a difference-in-difference strategy, they find that the reform led to a 10% reduction in boys' schooling completion rates among a matrilineal ethnic group exposed to the change – suggesting that fathers in landholding matrilineal households shifted their investment in boys from human to physical capital.

The bulk of the available evidence on the gender impacts of property legal reforms outside of Africa comes from India. These studies also rely on difference-in-difference estimations and variation in regime types to discern impact. Deininger et al. (2013) found that the equal inheritance reform under the Hindu Succession Act increased girls' likelihood to inherit land and boosted their schooling levels. However, the reform did not fully erase the gender gap in land inheritance. Mookerjee (2015) also uncovers increases in women's mobility and participation in household decision-making as a result of the reform.[41] In contrast, Roy (2015) relies on a triple-difference strategy and detects no impact of the reform on women's propensity to inherit land. Roy's analysis finds that fathers instead made strategic *inter-vivos* transfers of joint property to sons to circumvent the legal requirements; they compensated their daughters with higher dowry transfers and education investments.

Legal aid and dispute resolution

The provision of legal aid may also strengthen women's claims over and access to property by addressing gender constraints related to enforcement and service delivery gaps (Billings, Meinzen-Dick, and Mueller 2014), as well constraints related to customary adjudication.

Community paralegal programs have been implemented in Lesotho, Rwanda, and Uganda, among other countries (Lastarria-Cornhiel et al. 2014), yet there was little evidence until recently on the gender-differentiated impact of these programs. One recent example comes from Liberia, where Sandefur and Siddiqi (2013) conducted a field experiment that provided trained community paralegals to mediate legal disputes on a range of topics, including land and debt disputes and criminal acts. When analyzing the gender impacts of the program, the authors find that treated women report a significantly higher level of satisfaction with the outcome of their case than treated men, and a greater degree of satisfaction with the overall justice system than men (Sandefur and Siddiqi 2013). These findings suggest that facilitating women's access to formal law could redress some of the imbalances they face in resolving legal disputes through customary channels.[42] The other piece of evidence comes from Tanzania, where Mueller et al. (2015) conducted a randomized control trial on a one-year community-based legal aid and education program. On average, the program only yielded a modest impact on women's and men's legal knowledge and a slight shift in female perceptions around women's inheritance rights.

[41] The same study also reveals an increase in the decision-making power of *husbands*, at the expense of their parents and other relatives, following the reform.

[42] Qualitative evidence from southwestern Uganda suggests that women prefer to pursue property disputes in magistrates' courts rather than local customary bodies, due in part to perceived gender discrimination linked to patrilocal marriage patterns (Khadiagala 2001).

There is also new evidence from Liberia on the impact of a dispute resolution program. Blattman et al. (2014) examined the effects of the experimental provision of an alternative dispute resolution education campaign in a context where land and property conflicts are rife but courts and other state organs are weak. The program aimed to promote the local mediation of conflicts, including disputes over land, outside the realm of courts and administrative bodies. Mediation led to an overall drop in the duration of land disputes and a decline in property violence, and these effects did not differ by sex of the community member. The program did not, however, register an impact on community norms around women's rights.

Overall, these findings suggest that, while legal aid intervention can increase women's reported satisfaction with dispute outcomes, there is no strong evidence to show that it improves overall property rights.

Impact evaluation evidence: Land

While there is a sizable literature on the effects of land interventions in developing countries, including in Africa, there is a small but growing body of rigorous evidence – particularly for rural areas – on the gender differences in program impact. This sub-section presents the synthesized gender findings by land intervention type. We also include a summary of the consolidated land evidence from Sub-Saharan Africa in **Appendix Table A2**.

Land formalization programs

Land formalization programs have the potential to address gender constraints related to customary law and differential enforcement and service delivery. The empirical evidence suggests that, when coupled with the right policy framework, these interventions can improve outcomes for women and narrow some gender gaps. Impact evaluations of these programs in Sub-Saharan Africa examine two principal types of interventions: land titling and land certification. Both intervention types rely on a systematic land demarcation process and confer formal written evidence of land rights, but they differ in the scope of rights accorded to landholders (Goldstein et al. 2015).[43]

The gender evidence on titling in Sub-Saharan Africa comes from two studies of interventions that promoted the joint registration of both spouses. Quasi-experimental evidence on the impact of Rwanda's pilot land tenure regularization program, in which married female spouses were registered as co-owners of land by default, shows that the program boosted rural land investment among male-headed households by 10 percentage points and the impact for female-headed households – at 19 percentage points – was nearly twice as large (Ali, Deininger, and Goldstein 2014).[44] However, the program resulted in a drop in documented land ownership for women who were not legally married.[45] Married women, meanwhile, enjoyed an increase in documented ownership. A recent experiment from urban Tanzania, where women's documented land ownership is low, demonstrates that a small conditional subsidy can induce households to adopt joint land titles without dampening

[43] Land certification programs, which are sometimes based on customary law, tend to offer a more restrictive set of use rights and proscriptions against alienation, while land titling interventions confer a greater span of ownership and transfer rights to the individual(s) listed on the title.

[44] The positive results from the impact evaluation of the Rwanda land tenure regularization program also illustrate the importance of the underlying legal and institutional framework. The country's 1999 inheritance law, which was integrated into the 2003 Constitution, afforded women greater protection with respect to property during marriage and after its dissolution (Ali, Deininger, and Goldstein 2014).

[45] This finding helped the Government of Rwanda to remedy the situation and strengthen the property rights of women in informal unions (World Bank and The ONE Campaign 2014).

demand for the title (Ali et al. 2014). However, the experiment's focus on take-up does not generate lessons on the socio-economic impacts of joint titling.

Evidence on land titling from urban Latin America, meanwhile, suggests that these interventions can also yield impacts on women's agency and reproductive decisions. In Peru, Field (2003) exploits differences in program timing to measure the impact of titling for urban squatters through a difference-in-difference approach. She uncovers a substantial drop in fertility rates due to the program, and the decline is even larger for households that opted for joint land titles.[46] In Argentina, titles provided to urban squatters resulted in a decline in teen pregnancy rates (Galiani and Schargrodsky 2004) and a follow-up study also uncovered a fertility impact from land titling (Galiani and Schargrodsky 2010). The observed decline in fertility coincided with an increase in educational attainment among school-age children, which suggests that the program provided an important channel for human capital investment.

There is relatively less causal evidence on the gender impacts of rural land certification interventions.[47] Goldstein et al. (2015) present results from a randomized control trial in Benin. The findings, which focus on the initial effects of systematic land demarcation in a customary setting, portray a mixed picture on women's productive outcomes. The authors find that the process led to an increase in long-term land investment and perceived land rights for both men and women landholders. The program also closed the gender gap in fallowing – a key soil fertility investment – across male- and female-headed households. Yet demarcation also engendered a shift in agricultural production among female-headed households. In response to a change in relative tenure security across parcels, women reallocated production to their parcels located outside of treatment areas to guard those claims. The production shift led to a potentially short-term widening of the gender productivity gap.

Land redistribution programs

The available gender-differentiated evidence on land redistribution programs in Africa comes from Malawi's Community Based Rural Land Development Project (CBLDP). The market-based land resettlement program combined conditional cash grants to poor families for the purchase of larger plots with agricultural inputs and extension services, as well as the provision of individual and group land titles. The combined results suggest a somewhat unfavorable impact for women's property rights.

Datar et al. (2009) rely on propensity score matching methods to assess the short-run impact of the CBLDP. They find that asset levels for treated female-headed households increased relative to treated

[46] Field (2007) also finds that land titling issuance led households to increase their labor supply – but this effect was concentrated among adult men. Women's labor supply did not increase in response to the program.

[47] Suggestive evidence from Ethiopia's experience with customary land certification points to a potential increase in women's property rights. Deininger et al. (2008) examine Ethiopia's low-cost land certification program, which included mandatory joint documentation in some regions and quotas for women's participation in local land committees. Women were more likely to be included on land documents in regions that mandated joint titling. However, gender-differentiated impacts on women's investment and productivity were not causally identified (Deininger et al. 2008). Ethiopia's land certification program may have also lifted women's participation in land rental markets. In the Tigray region, certification was correlated with increased land market participation among women. They were more likely to rent out more of their land – likely due to a lower perceived risk of expropriation (Holden, Deininger, and Ghebru 2011). Melesse et al. (2015), meanwhile, present preliminary evidence of joint certification's impact in Ethiopia using propensity score matching methods. They uncover improvements in women's knowledge of land rights and local political participation.

male-headed households. However, they also observed a significant increase in cash crop production, but only for treated male-headed households. Mueller et al. (2014) use a similar estimation approach with additional rounds of data and find that, while the program improved the documented ownership rights of male and female heads, the program may have diminished the property rights of women within male-headed households. Women in those households reported a lower relative share of land purchased with a title and leased compared to the male head. Mendola and Simtomwe (2015) also use propensity score matching to test for gender differences in impact along a range of outcomes.[48] They find improvements for male-headed households on farm yields and food security, but not for female-headed households (though this may partially be driven by statistical power differences). Increases in asset levels across both groups, however, were similar.

Housing programs

There is a paucity of rigorous evidence on the effects of housing interventions.[49] One of the few exceptions is Wang (2014), who presents difference-in-difference estimations on the impact of a housing privatization scheme in China and finds changes in household consumption patterns. The transfer of individual property rights to men boosted household spending on male-oriented goods and the time that women spent on household chores, while strengthening women's property rights reduced men's consumption of these goods.

GIL'S ONGOING GENDER AND PROPERTY RIGHTS IMPACT EVALUATIONS

The Gender Innovation Lab's current portfolio of impact evaluations aims to tackle a number of key research questions related to gender and property rights. In **Benin**, **Ghana**, and **Rwanda**, GIL teams are partnering with other researchers to assess the long-term effects of land formalization programs on women's and men's investment and productivity outcomes. The studies will also examine women's bargaining and employment outcomes following these large-scale interventions. A GIL team in **Uganda** is conducting an experiment to reshape property rights within the household. The impact evaluation, nested within a large titling program, will uncover the effects of providing incentives to households for the joint registration of land in the names of both spouses.

In **Ghana**, the Lab is partnering with a local bank to roll out a new savings collection service and commitment savings product for women and men. And in **Niger**, the Lab is carrying out impact evaluations on savings (testing SMS reminders and lockboxes) and livestock (testing the provision of matching grants to agro-pastoral groups) interventions.

New GIL experimental studies on property rights are also underway in **Côte d'Ivoire**, **Nigeria**, **Tanzania**, and **Zambia**.

Impact evaluation evidence: Livestock

Interventions that provide livestock to rural households, and women in particular, are common throughout the developing world. There is nevertheless a striking dearth of rigorous research on the socio-economic impact of these programs (Kristjanson et al. 2014), aside from the literatures on nutrition and ultra-poor asset transfer "graduation" programs.[50] There is also no rigorous evidence on livestock-support interventions that provide training or extension or veterinary services to holders of livestock. Consequently, there is virtually no rigorous evidence of the gender-differentiated impact of livestock programs. The emerging experimental literature on the strong

[48] Neither Mueller et al. (2014) nor Mendola and Simtomwe (2015) reports the significance levels for differences between male and female propensity score estimates.

[49] The only experimental evidence on housing in developing countries comes from Latin America, where Galiani et al. (2013) examine a multi-country slum upgrading program. No gender-differentiated effects are reported.

[50] Recent attempts in the literature to assess the household-level effects of livestock transfer programs were not able to isolate the causal impact (Argent, Augsburg, and Rasul 2014).

poverty-reducing impact of ultra-poor programs, however, offers some possible clues. These programs offer a bundled combination of productive assets (typically livestock), intensive training, temporary cash or in-kind grants, savings support, and health and life skills information. No study to date has disentangled the specific effect of livestock transfers, however.

The overall tenor of the gender evidence on ultra-poor programs is mostly positive. In Bangladesh, randomized experiments reveal that, while a large-scale ultra-poor program generated substantial increases in women's earnings (Bandiera et al. 2013), it may have also eroded their property rights over newly-obtained household resources (Shalini Roy et al. 2015). The program may also have diminished women's mobility and decision-making power (Shalini Roy et al. 2015). However, the asset transfer program, which targeted women, also led to impressively large longer-term increases in household land and livestock holdings, as well as enhanced savings and earnings outcomes (Bandiera et al. 2015).

A comprehensive set of experimental evidence across six countries, including two in Africa, finds a significant impact after two years on an index measure of women's empowerment (A. Banerjee et al. 2015). This effect, however, did not persist after the three-year mark. Despite this promising evidence, more work is needed to unbundle the impact of these programs and isolate the effects of livestock provision on women's property rights and other outcomes.

Impact evaluation evidence: Savings

Descriptions of the available gender evidence from Sub-Saharan Africa on savings interventions is provided in **Appendix Table A3**.[51] This section also draws on evidence from other continents to augment the analysis. The bulk of these savings interventions directly address the gender asset constraint (which, in turn, may shape gender differences in bargaining power) through the provision of savings technologies. As noted previously, these interventions tend to elide the broader sets of constraints, such as statutory restrictions and customary norms around sharing, which can further widen gender gaps in savings. The combined findings from these impact evaluations suggest that demand for secure savings products from women is high and that the impact of savings interventions is generally favorable towards women (Buvinic and Furst-Nichols 2014).

Individual and joint savings accounts

Recent findings from the experimental literature highlight the productive potential associated with the increase in women's ownership, use, and control of formal savings products. Dupas and Robinson (2013a) assess the effects of offering interest-free individual bank accounts with high withdrawal fees on the saving behaviors of female vendors and male bicycle taxi drivers in Kenya. Women enjoyed a substantially larger impact than men from the program: they increased their savings rates, expanded their business investment,[52] and boosted private expenditure. Similar effects were not observed on men. The findings suggest that women may prefer formal accounts over private savings

[51] Karlan et al. (2014) synthesize and assess the latest evidence on savings interventions from rigorous impact evaluations and provide a number of conclusions, including: 1. Subsidized and targeted savings products can lead to substantial income and welfare gains. 2. While adoption rates are modestly favorable, usage rates after setting up an account are markedly lower. 3. Commitment savings products with somewhat looser restrictions tend to out-perform more stringent commitment savings accounts. 4. Differences in intra-household bargaining power and preferences reduce overall savings rates. 5. Modest, time-bound subsidies can boost take-up and even yield persistent impacts. 6. Peer groups offer an important platform for the dissemination of savings technologies. 7. Financial literacy training in its current form does not yield much of an impact.

[52] While the gender treatment differential on investment was large in magnitude, the difference was not statistically significant due to the small sample size and noisiness of the indicator (Dupas and Robinson 2013a).

that could be captured for other uses.[53] And the illiquid nature of the savings account (given the high costs of withdrawal) may have contributed to women's adoption of the account – in spite of its negative real and effective interest rate.

The provision of individualized, *secure* savings products might be particularly important given the growing evidence of a lack of income pooling and risk sharing in households. For example, Robinson (2012) introduces exogenous income shocks to married couples in Kenya and uncovers evidence of pareto inefficiency: husbands only spend more on private goods when they experience a positive windfall, while wives opt not to increase their expenditure after receiving a positive shock. The degree to which husbands and wives have similar preferences may also matter. Schaner (2015c) presents experimental evidence that couples with divergent intertemporal preferences are more likely than well-matched couples to forego more deeply subsidized joint savings accounts in favor of individual accounts with lower rates of return.[54] In a follow-up study with the same sample, Schaner (2015b) finds that – two-and-a-half years after providing subsidies to open a savings account – subsidies for husbands increased household assets (via an increase in entrepreneurship). Subsidies for wives did not, however, register any longer-term impacts. Schaner presents evidence to suggest a mental accounting explanation for this finding, whereby men parceled out their earnings into separate mental categories—including for their enterprise. Men thus responded to the subsidy by apportioning a larger share of spending toward business investment. Subsidies for joint accounts, meanwhile, led to an increase in joint household assets such as livestock and home investments, and they also fostered greater agreement over household decisions. Dupas et al. (2015) also introduced exogenous variation in bank account access across and within households in western Kenya. The account was offered to a randomly-selected spouse to examine the intra-household impact. They found that demand for individual accounts among men and women was much higher than for joint accounts. They also uncover gender differences in use, with accounts offered to husbands being used more intensively than those offered to wives.

Schaner also provides experimental evidence on the reduction of transaction costs with savings account use (Schaner 2015a). She finds that the distribution of ATM cards – which lower withdrawal fees and offer more flexible account access – led to an increase in account use, but only for men's accounts. The author ascribes this differential impact to gender differences in relative bargaining power. Those women with low levels of baseline bargaining power actually use their bank accounts less when they receive a free ATM card.

Findings from other contexts shed further light on intra-household impacts and women's adoption decisions. Kast and Pomeranz (2014) provide experimental evidence on the provision of individual savings accounts to (mostly female) micro-entrepreneurs in Chile. While offering free accounts did reduce short-term debt and improve subjective well-being, it did not change the relative bargaining power of women within the household. The authors hypothesize that the results align with the specific context, since women in Chile already tend to be the primary decision-makers for household financial decisions (Kast and Pomeranz 2014). The analysis of take-up also yielded interesting clues

[53] There is also suggestive evidence that women prefer to save in groups to prevent expropriation from their spouses or other relatives. Anderson and Baland (2002) examined participation in rotating savings and credit associations (ROSCAs) in urban Kenya and find that women – who make up 84% of their sample – make a strategic decision to tie up their savings in a ROSCA to limit their husband's control over (and possible immediate consumption of) the money. Anderson and Baland (2002) also present qualitative evidence that women prefer to hide their participation in ROSCAs from their husbands.

[54] As Karlan and Zinman (2014) note, demand for joint savings products may be dampened in households with bargaining failures.

on women's preferences. Those individuals who are not heads of household, who are in a dispute over money with their partner, or who faced demands from their social network to lend money were most likely to take up the product (Kast and Pomeranz 2014). In Nepal, the experimental provision of fully subsidized, liquid bank accounts – with a negative real interest rate – encourages female-headed households to save 8% of their weekly income on average (Prina 2015).

Commitment savings products

The provision of commitment savings products, which incorporate an element of illiquidity with a targeted savings goal, can also increase women's savings and intra-household outcomes. In a follow-up study in Kenya, Dupas and Robinson (2013b) study the effects of four informal savings devices on ROSCA members: lockboxes with a key given to the individual, lockboxes with a key given to a project officer, encouragement to set up a ROSCA health savings pot, and an individual health savings account. They find that providing a simple box with a lock and key was sufficient to increase preventive health savings through a mental accounting mechanism (in this case, the labeling of savings for a specific, non-fungible spending goal). Further analysis of the sample (three-quarters of which was female) uncovers a significantly larger impact on married women, which suggests possible intra-household barriers to individual saving.[55]

The only experimental gender evidence on savings in Africa outside of Kenya comes from Delavallade et al. (2015), who compare the provision of index-based agricultural insurance to a range of savings products in Burkina Faso and Senegal. Men and women farmers were given small endowments for one of four products: insurance, a labeled savings device for agricultural inputs, an emergency savings account, and a savings account for agricultural inputs – with the latter two administered by a local treasurer. Women were significantly less likely than men to accept the savings product. No gender differences in socio-economic impact were reported, however.

In addition, Ashraf et al. (2010) provide gender-differentiated, experimental evidence from the Philippines on the long-term impact of an individual commitment savings product.[56] Being offered this product yields a strong positive impact on women's decision-making power within the household – particularly among women with lower initial decision-making power. This impact further leads to a change in household spending decisions: treated households in which women had initially low decision-making power were more likely to spend on "female-oriented" indivisible household goods such as washing machines and kitchen appliances (Ashraf, Karlan, and Yin 2010). As Karlan et al. (2014) note, the access restrictions offered by commitment savings products likely help deepen women's stock of savings and enhance their say over household decisions and expenditure patterns.

Financial literacy

There is little rigorous evidence to suggest that financial literacy interventions improve overall savings outcomes (Karlan, Ratan, and Zinman 2014), let alone those of women. While Cole et al. (2011) found no overall impact of financial literacy training on savings account take-up from a randomized experiment in Indonesia, they did detect a positive impact among those with the lowest education and baseline financial literacy skills. Field et al. (2010) also found no impact of a financial

[55] The authors note, however, that this finding could be driven by unobserved, systematic differences between married and unmarried women.

[56] In earlier work, Ashraf et al. (2006) show that adoption of the commitment savings product was strongly conditioned on differences in intertemporal preferences among women. Women with hyperbolic preferences (i.e., those who are more present-biased) were significantly more likely to take up the account. A similar difference was not observed among men.

literacy training (combined with other business skills training) on women's likelihood of saving in western India. However, recent experimental work from urban India demonstrates that the combination of financial literacy training and individualized financial counseling can boost formal savings adoption (Carpena et al. 2015).

Reminders and nudges to save
Atkinson et al. (2013) find that nudging borrowers in Guatemala to save at the time of loan payments increases the probability to save and the amount saved. However, there was no differential treatment effect by gender on opening a saving account or other key outcomes.

VI. Conclusion: GIL's future research agenda on gender and property rights

Secure property rights constitute an essential ingredient for economic development. As a consequence, policy makers have focused on measures to strengthen these rights. Yet a mass of evidence suggests that there are additional gains to be had from remedying the distributional inequality in property rights between men and women. This White Paper presented what we know about the breadth and depth of gender gaps in ownership, use, and control of key productive assets (land, livestock, and savings), outlined the underlying constraints that give rise to gender disparities in property rights, and assessed the available evidence on what works to narrow these gaps.

This final section outlines the priority research questions on the topic. With an emphasis on policy relevance, these priority questions will shape GIL's future knowledge work and address important gaps in the literature. The section will first emphasize the need for a stronger documentation of the evidence on binding constraints, followed by a set of recommended questions to expand the knowledge base on what works to increase women's ownership, control, and use of productive assets. The section will close with a recommended set of methodological and cross-cutting issues that warrant exploration.

Documenting constraints
There is a substantial body of evidence in support of several constraints discussed in this White Paper, such as the importance of statutory legal frameworks and customary norms that define the contours of women's access to assets. However, for some potential constraints, we lack solid empirical proof that they bind on women's access to and control over property. For example, the interaction between women's time availability and their tenure security over land has not been adequately documented and examined. Similarly, the role that social networks play in widening the gender gap in access to livestock and other productive assets has not been well established. Meanwhile, even when a gap has been documented (such as gender gaps in information about legal rights), there are still large holes in our understanding of whether that gap matters for women's property rights per se. As a consequence, additional basic and inferential research – including qualitative research – is needed to establish whether these factors do indeed militate against women's property rights, before testing interventions that target these factors.

Expanding the knowledge base on what works

Norms and institutions
The combined evidence suggests that changes to the contextual factors addressed earlier – such as statutory legal frameworks and customary norms – is a precondition for the expansion of women's

ownership, use, and control of productive assets. Despite the growing body of evidence on the favorable impact of statutory legal reforms, there remain several important policy questions related to enforcement and service delivery. In settings where reform has been achieved, does the provision of information on women's property rights translate into improved outcomes? For example, would doing so help in a context such as Kenya, whose 2010 Constitution calls for the removal of all gender discrimination in law, customs, and practices around land and other property? And what complementary interventions are needed to give teeth to these legal reforms? Does the provision of local-level legal assistance or paralegals translate into women's increased command over property? And there are also still gaps in knowledge about the impact of land law reforms that aim to alter the gender distribution of formal property rights.[57]

At the local level, a question of paramount importance is: what interventions shift community and household norms around women's property rights? Experimental work from urban Tanzania has shown that financial incentives can counteract prevailing norms and engender an initial redistribution of documented property rights within the household (Ali et al. 2014). But what other types of interventions can induce this shift? Can interventions in other sectors, such as agriculture, also change norms around women's property rights? In a small-scale randomized trial in Burkina Faso, van den Bold et al. (2015) examined the impact of a program that helped women access communal land and provided them with inputs for agricultural production and poultry rearing. The quantitative analysis revealed evidence of a reallocation of household agricultural assets towards women, while qualitative evidence suggests that the program may have induced a positive shift in local perceptions over women's land ownership and use rights. In addition, what lessons can be gleaned from other efforts to change norms? Can recent successes in changing norms on female genital mutilation, for example, also be applied to women's property rights? Who are the key influencers and decision-makers at the community and local government levels who could help effect change?

Land

The findings presented in the previous section on land interventions, particularly land registration programs, suggest that – in contexts with a favorable statutory regime towards women – these programs can expand women's property rights and reduce gender gaps in productive outcomes. But an ambitious knowledge agenda is needed to deepen our understanding of interventions that narrow gender gaps in women's access to and use of land resources. First, we need to generate more evidence on the gender-disaggregated impacts of land administration projects in Africa. In particular, a set of questions around the benefits and drawbacks of joint titling should be explored. Does joint titling narrow investment and productivity gaps across a range of settings? Does it need to be mandatory or can households be incentivized to adopt such an arrangement in rural and urban areas? All of this experimental work should also be coupled with qualitative research on barriers to the adoption of joint titling regimes, even when they are not mandated.

More work is also needed, in the context of land administration programs, to identify implementation tweaks that can increase women's ownership and control over land. For example, the literature from behavioral economics suggests that default options on forms can influence desired social outcomes. Could small changes to land titling forms induce a shift in property rights, say by automatically including a blank line for a spouse on the title application? And could requiring a photo for joint titles also help women's property rights in low-literacy settings? There is anecdotal evidence that requiring a photo for joint land certification in some regions of Ethiopia helped women exercise

[57] Another gap relates to the methods used to evaluate the impact of legal reforms on women's economic empowerment. To date, there is no evidence of causal impact based on experimental methods.

greater control over household land market transactions (Hallward-Driemeier and Hasan 2012). And how much control do women exert over land when it is jointly titled (for example, do we see cases where it is joint in name only)?

In addition, the analysis of program impacts also needs to move from *across* to *within* households. Much of the evidence to date focuses on male vs. female household heads, yet we have much less evidence on the within-household effects of land formalization programs, particularly in Sub-Saharan Africa. For example, do "gender-neutral" land administration projects diminish the property rights of women living in male-headed households? How do they compare with "gender-sensitive" interventions that seek to expand women's documented rights? How do these programs affect intra-household bargaining power, including decisions on fertility and household expenditure? And what are the mechanisms for these effects?

The next generation of impact evaluations on gender and property rights in Sub-Saharan Africa should also expand the set of outcomes under examination. For example, exploring the intersection of gender, property rights, and employment can yield important insights for policy by addressing question such as: Does relaxing women's tenure insecurity facilitate their off-farm activities and labor market participation? Does this effect vary by context (rural vs. urban) and/or relative household labor supply? Another emerging, but little understood topic, is the relationship between land formalization, gender, and migration. Recent work from Sri Lanka (Emran and Shilpi 2014) and Mexico (Valsecchi 2014) makes some initial empirical and theoretical contributions to the literature on this topic, but we have no rigorous evidence from Sub-Saharan Africa on the interactions between land tenure and women's and men's migration decisions. For example, how does a woman's land rights and decision-making power change if her spouse migrates following land formalization? Can strengthening a woman's tenure security also induce her to migrate and improve her welfare?

In light of the promising new evidence from ultra-poor programs, more experimental work should also be done on interventions to help women overcome their liquidity constraints and access land markets. As Galiani and Schargrodsky (2011) note, there remains a shortage of evidence of the impact of land titling on land markets. Indeed, since the development of land markets may offer women another pathway towards accessing – or generating revenue from – land, this line of research would also uncover important insights on gender questions. For example, would relaxing women's liquidity constraints help them access land markets? Does the collective acquisition or rental of land (e.g., via women's groups) help boost women's investment and productivity?

In addition, there is an acute need for work that examines possible complementary interventions in settings with multiple market failures. For example, combining formal land documentation with access to credit could help women and men exploit the collateralizability of their land assets.

Finally, given the trend of urbanization across Sub-Saharan Africa, the need for gender-disaggregated evidence of these interventions in urban settings is even more acute. There is only one rigorous impact evaluation of a land intervention in an urban setting in Africa, and none that reports the socio-economic impacts. More work on the nexus between property rights and migration is also needed, as rural-urban migration levels continue to rise.

Livestock

As noted previously, a first order set of questions on the gender impacts of livestock transfer interventions have not yet been answered in a rigorous way. The very promising impact evaluation evidence from ultra-poor programs suggests that there are complementarities to be gained from the

combined set of interventions that tackle multiple constraints. Yet the relative contribution of each of these components is unknown at this point.

Savings

The accumulated evidence on savings suggests that women use formal and informal banking accounts when offered a chance to do so, and this helps them to save and to grow their business when they have one. There is also promising evidence that the earmarking of savings for specific goals helps women to build savings. Meanwhile, we are starting to uncover some of the barriers to savings adoption for women. For example, there is a growing set of evidence to suggest that intra-household factors play a role in shaping women's access to and control over savings. Nevertheless, more work is needed to assess the extent to which pressure – and what types of pressure – for redistribution and fear of expropriation discourage overall savings or rather encourage women to save in-kind. We are thus still in the process of learning about the barriers that may prevent women from using and controlling formal and informal savings.

In terms of priority questions, we need more work on the saving services and devices that best align with the needs of women and expand their economic opportunities. Can reducing the liquidity of savings lower the risk of capture by a husband or family member? Will it yield any welfare improvements? Savings products that are illiquid in nature and offer a "soft" commitment seem to attract higher demand in experimental settings. However, what are the barriers for women to take-up these products without a nudge? A related strand of work relates to possible gender differences in behavioral biases around saving. For example, do women and men hold different inter-temporal preferences that condition their relative demand for savings products? Do goal-setting exercises help women more than men?

We also need to expand work on *untested* technologies that might help women control their savings assets. For example, for those women who fear the loss of their formal savings from a spouse or family member, new technological innovations such as biometric cards (available in Malawi, for example) may reduce the risk of expropriation (Quisumbing and Pandolfelli 2010). Although there is no rigorous impact evidence on the introduction of these products, Schaner (2015a) makes a similar suggestion in her finding of no impact of ATM cards on female account use. She notes that, when devising appropriate savings products in contexts with large bargaining asymmetries, a balance should be struck between the reduction of transaction costs and the "right level of security and illiquidity" that is offered by biometric scanning and other innovations (Schaner 2015a). Mobile money accounts could also allow women to safely store their savings to avoid the social pressures to divert these resources (Buvinic and Furst-Nichols 2014), yet there is no gender evidence to date from impact evaluations on mobile money accounts. Also, the observability of savings products might be important for women's control over savings assets. Do private or "secret" savings products hold more appeal for women?

Furthermore, we need to know whether alternative service models can enhance women's savings. There is a new strand of experimental literature in developing countries on the potential of remote deposit collection services to mobilize savings deposits (Callen et al. 2015). While these types of services are already embedded into the informal financial architecture of countries in Sub-Saharan Africa (Aryeetey and Udry 1997; Somville 2011), there is no evidence of their impact on men and women. In particular, can these services help women who face time or mobility constraints?

Next, future impact evaluation work should establish the external validity of the current evidence through replication. With the exception of one study, all of the experimental work on gender and savings in Sub-Saharan Africa comes from one country: Kenya. Additional rigorous empirical work

should assess whether these findings hold in other contexts in Sub-Saharan Africa, given the regional heterogeneity in marital unions (e.g., polygamy), the variation in statutory and customary legal arrangements, and the women's differing levels of agency across the region.

Methodological and cross-cutting issues

A number of methodological and cross-cutting themes warrant the attention of researchers at GIL and elsewhere. First, there remains a need for more and better data on each of the asset categories examined in this White Paper. In particular, more methodological work is needed to establish reliable and comparable measures of *individual-level* control, use, and ownership of land, livestock, and savings. With regard to savings, a related question is on the proper way to capture the various forms of savings an individual and household can hold (to measure a net change in savings). In a similar vein, when measuring outcomes such as documented land ownership and formal savings balances, it will be important to link household quantitative and qualitative data sources with administrative data sources whenever possible.

Second, future work should lengthen the time horizon of impact evidence. The majority of available property rights impact evaluations were conducted recently and they report effects over a relatively short time horizon, particularly for savings interventions (Karlan, Ratan, and Zinman 2014). We thus need to lengthen the timeframe of impact measurement for future studies and conduct more follow-up rounds of existing studies.

Third, we need to explore other indicators of impact (psychosocial well-being, aspirations, market orientation) in our property rights studies that, while difficult to measure, can offer insights on a broader spectrum of effects.

Fourth, more work needs to be done on the role that engaging men can play in fostering women's control over productive assets and lowering their susceptibility to violence. For example, recent experimental work in Côte d'Ivoire suggests that adding complementary "gender dialogues" with husbands and wives in interventions can reduce intimate-partner violence in treated households, relative to those who receive a standard savings intervention (Gupta et al. 2013). Similar interventions could be tested alongside joint land titling to assess the extent to which they reinforce women's tenure security and rights.

Fifth, we need to conduct more careful analysis to test for gender differences in asset quality, particularly for land. While there is a widespread perception that women own and use land that is of inferior quality, there is not yet strong empirical evidence to support this claim. Agronomic soil testing of men's and women's plots, for example, can help establish whether systematic differences in soil quality exist. The answer to this question holds relevance for policy, given the importance that soil fertility holds for agricultural outcomes.

Finally, there remains a yawning absence of cost-benefit work in the available literature on gender and property rights (Buvinic and Furst-Nichols 2014). Presenting this evidence in ongoing and future work will be particularly important for policy makers and other decision-makers who face trade-offs over budget and policy priorities.

VII. Bibliography

Acemoglu, Daron, Simon Johnson, and James A. Robinson. 2001. "The Colonial Origins of Comparative Development: An Empirical Investigation." *American Economic Review* 91 (5): 1369–1401.

Agarwal, Bina. 1994. "Gender and Command over Property: A Critical Gap in Economic Analysis and Policy in South Asia." *World Development* 22 (10): 1455–78.

Aguilar, Arturo A., Eliana Carranza, Markus P. Goldstein, Talip Kilic, and Gbemisola Oseni. 2014. "Decomposition of Gender Differentials in Agricultural Productivity in Ethiopia." World Bank Policy Research Working Paper No. 6764.

Aldashev, Gani, Imane Chaara, Jean-Philippe Platteau, and Zaki Wahhaj. 2012. "Using the Law to Change the Custom." *Journal of Development Economics* 97 (2): 182–200.

Ali, Daniel Ayalew, Matthew Collin, Klaus Deininger, Stefan Dercon, Justin Sandefur, and Andrew Zeitlin. 2014. "The Price of Empowerment: Experimental Evidence on Land Titling in Tanzania." World Bank Policy Research Working Paper No. 6908. Washington, D.C.: World Bank.

Ali, Daniel Ayalew, Klaus Deininger, and Markus Goldstein. 2014. "Environmental and Gender Impacts of Land Tenure Regularization in Africa: Pilot Evidence from Rwanda." *Journal of Development Economics* 110: 262–75.

Anderson, Siwan, and Jean-Marie Baland. 2002. "The Economics of ROSCAs and Intrahousehold Resource Allocation." *Quarterly Journal of Economics*, 963–95.

Argent, Jonathan, Britta Augsburg, and Imran Rasul. 2014. "Livestock Asset Transfers with and without Training: Evidence from Rwanda." *Journal of Economic Behavior & Organization* 108 (December): 19–39. doi:10.1016/j.jebo.2014.07.008.

Aryeetey, Ernest, and Christopher Udry. 1997. "The Characteristics of Informal Financial Markets in Africa." *Journal of African Economies* 6 (1): 161–203.

———. 2000. "Saving in Sub-Saharan Africa." Center for International Development Working Paper No. 38. Cambridge: Harvard University.

Ashraf, Nava, Dean Karlan, and Wesley Yin. 2006. "Tying Odysseus to the Mast: Evidence from a Commitment Savings Product in the Philippines." *The Quarterly Journal of Economics*, 635–72.

———. 2010. "Female Empowerment: Impact of a Commitment Savings Product in the Philippines." *World Development* 38 (3): 333–44.

Atkinson, Jesse, Alain de Janvry, Craig McIntosh, and Elisabeth Sadoulet. 2013. "Prompting Microfinance Borrowers to Save: A Field Experiment from Guatemala." *Economic Development and Cultural Change* 62 (1): 21–64. doi:10.1086/671713.

Attanasio, Orazio, and Valérie Lechene. 2002. "Tests of Income Pooling in Household Decisions." *Review of Economic Dynamics* 5 (4): 720–48. doi:10.1006/redy.2002.0191.

Backiny-Yetna, Prospere, and Kevin McGee. 2015. "Gender Differentials and Agricultural Productivity in Niger." World Bank Policy Research Working Paper No. 7199.

Bandiera, Oriana, Robin Burgess, Narayan Das, Selim Gulesci, Imran Rasul, and Munshi Sulaiman. 2013. "Can Basic Entrepreneurship Transform the Economic Lives of the Poor?" STICERD Economic Organisation and Public Policy Discussion Paper No. 43.

Bandiera, Oriana, Robin Burgess, Narayan Das, Selim Gulesci, Imran Rasul, and Munshi Sulaimany. 2015. "The Misallocation of Labor in Village Economies." Economic Organisation and Public Policy Discussion Papers No. 58. London: London School of Economics. Available at:

http://www.lse.ac.uk/economics/people/facultyPersonalPages/facultyFiles/RobinBurgess/TheMisallocationOfLaborInVillageEconomies.PDF.
Banerjee, Abhijit V., and Esther Duflo. 2007. "The Economic Lives of the Poor." *Journal of Economic Perspectives* 21 (1): 141.
Banerjee, A., E. Duflo, N. Goldberg, D. Karlan, R. Osei, W. Pariente, J. Shapiro, B. Thuysbaert, and C. Udry. 2015. "A Multifaceted Program Causes Lasting Progress for the Very Poor: Evidence from Six Countries." *Science* 348 (6236): 1260799–1260799. doi:10.1126/science.1260799.
Berry, Sara. 1989. "Social Institutions and Access to Resources." *Africa* 59 (1): 41–55.
Besley, Timothy. 1995. "Property Rights and Investment Incentives: Theory and Evidence from Ghana." *Journal of Political Economy* 103 (5): 903–37.
Besley, Timothy, and Maitreesh Ghatak. 2010. "Property Rights and Economic Development." In *Handbook of Development Economics*, edited by Dani Rodrik and Mark Rosenzweig, 5:4525–95. Amsterdam: Elsevier.
Billings, Lucy, Ruth Suseela Meinzen-Dick, and Valerie Mueller. 2014. "Implications of Community-Based Legal Aid Regulation on Women S Land Rights." IFPRI Research Brief No. 20. Washington, D.C.: International Food Policy Research Institute.
Binswanger, Hans P., and Mark R. Rosenzweig. 1986. "Behavioural and Material Determinants of Production Relations in Agriculture." *Journal of Development Studies* 22 (3).
Blattman, Christopher, Alexandra C. Hartman, and Robert A. Blair. 2014. "How to Promote Order and Property Rights under Weak Rule of Law? An Experiment in Changing Dispute Resolution Behavior through Community Education." *American Political Science Review* 108 (01): 100–120.
Buvinic, Mayra, and Rebecca Furst-Nichols. 2014. "Promoting Women's Economic Empowerment: What Works?" *The World Bank Research Observer*, November. doi:10.1093/wbro/lku013.
Callen, Michael, Suresh De Mel, Craig McIntosh, and Christopher Woodruff. 2015. "What Are the Headwaters of Formal Savings? Experimental Evidence from Sri Lanka." HKS Faculty Research Working Paper Series No. RWP15-011. National Bureau of Economic Research. http://www.nber.org/papers/w20736.
Carpena, Fenella, Shawn Cole, Jeremy Shapiro, and Bilal Zia. 2015. "The ABCs of Financial Education: Experimental Evidence on Attitudes, Behavior, and Cognitive Biases." World Bank Policy Research Working Paper No. 7413. Washington, D.C.: World Bank.
Chernina, Eugenia, Paul Castañeda Dower, and Andrei Markevich. 2014. "Property Rights, Land Liquidity, and Internal Migration." *Journal of Development Economics* 110 (September): 191–215.
Cole, Shawn, Thomas Sampson, and Bilal Zia. 2011. "Prices or Knowledge? What Drives Demand for Financial Services in Emerging Markets?" *The Journal of Finance* 66 (6): 1933–67.
Collin, Matthew, Justin Sandefur, and Andrew Zeitlin. 2015. "Falling Off the Map: The Impact of Formalizing (Some) Informal Settlements in Tanzania." Centre for the Study of African Economies (CSAE) Working Paper No. 2015-09. University of Oxford.
Covarrubias, Katia, Longin Nsiima, and Alberto Zezza. 2012. "Livestock and Livelihoods in Rural Tanzania: A Descriptive Analysis of the 2009 National Panel Survey." Working Paper. Washington, D.C.: World Bank; FAO; AU-IBAR; ILRI; and the Tanzania Ministry of Livestock and Fisheries Development. Available at: https://www.openknowledge.worldbank.com/handle/10986/17886.
Datar, Gayatri, Ximena V. Del Carpio, and Vivian Hoffmann. 2009. "Can a Market-Assisted Land Redistribution Program Improve the Lives of the Poor? Evidence from Malawi." World Bank Policy Research Working Paper No. 5093. Washington, D.C.: World Bank.
Deere, Carmen Diana, and Cheryl R. Doss. 2006. "The Gender Asset Gap: What Do We Know and Why Does It Matter?" *Feminist Economics* 12 (1-2): 1–50.

Deere, Carmen Diana, Abena D. Oduro, Hema Swaminathan, and Cheryl Doss. 2013. "Property Rights and the Gender Distribution of Wealth in Ecuador, Ghana and India." *The Journal of Economic Inequality* 11 (2): 249–65.

Deininger, Klaus. 2003. *Land Policies for Growth and Poverty Reduction*. Washington, DC; Oxford: World Bank; Oxford University Press.

Deininger, Klaus, Daniel Ayalew Ali, Stein Holden, and Jaap Zevenbergen. 2008. "Rural Land Certification in Ethiopia: Process, Initial Impact, and Implications for Other African Countries." *World Development* 36 (10): 1786–1812.

Deininger, Klaus, Daniel Ayalew Ali, and Takashi Yamano. 2008. "Legal Knowledge and Economic Development: The Case of Land Rights in Uganda." *Land Economics* 84 (4): 593–619.

Deininger, Klaus, and Raffaella Castagnini. 2006. "Incidence and Impact of Land Conflict in Uganda." *Journal of Economic Behavior & Organization* 60 (3): 321–45.

Deininger, Klaus, and Gershon Feder. 2009. "Land Registration, Governance, and Development: Evidence and Implications for Policy." *The World Bank Research Observer* 24 (2): 233–66.

Deininger, Klaus, Aparajita Goyal, and Hari Nagarajan. 2013. "Women's Inheritance Rights and Intergenerational Transmission of Resources in India." *Journal of Human Resources* 48 (1): 114–41.

Deininger, Klaus, Fang Xia, and Sara Savastano. 2015. "Smallholders' Land Ownership and Access in Sub-Saharan Africa: A New Landscape?" World Bank Policy Research Working Paper No. 7285. Washington, D.C.: World Bank.

de Janvry, Alain, Kyle Emerick, Marco Gonzalez-Navarro, and Elisabeth Sadoulet. 2015. "Delinking Land Rights from Land Use: Certification and Migration in Mexico." *American Economic Review* , forthcoming.

Delavallade, Clara, Felipe Dizon, Ruth Vargas Hill, and Jean Paul Petraud. 2015. "Managing Risk with Insurance and Savings: Experimental Evidence for Male and Female Farm Managers in the Sahel." World Bank Policy Research Working Paper No. 7176. Washington, D.C.: World Bank.

Demirguc-Kunt, Asli, Leora Klapper, Dorothe Singer, and Peter Van Oudheusden. 2015. "The Global Findex Database 2014: Measuring Financial Inclusion around the World." World Bank Policy Research Working Paper No. 7255. Washington, D.C.: World Bank.

Dercon, Stefan, and Pramila Krishnan. 2000. "In Sickness and in Health: Risk Sharing within Households in Rural Ethiopia." *Journal of Political Economy* 108 (4): 688–727.

Di Gregorio, Monica, Konrad Hagedorn, Michael Kirk, Benedikt Korf, Nancy McCarthy, Ruth Meinzen-Dick, and Brent Swallow. 2008. "Property Rights, Collective Action, and Poverty: The Role of Institutions for Poverty Reduction." CAPRi Working Paper Series No. 81. Washington, D.C.: International Food Policy Research Institute.

Dillon, Andrew, and E. Quiñones. 2011. "Gender Differentiated Asset Dynamics in Northern Nigeria." ESA Working Paper No. 11-06. Rome: Food and Agriculture Organization.

Doepke, Matthias, and Michèle Tertilt. 2011. "Does Female Empowerment Promote Economic Development?" CEPR Discussion Paper No. 8441. London: Centre for Economic Policy Research.

Doepke, Matthias, Michèle Tertilt, and Alessandra Voena. 2012. "The Economics and Politics of Women's Rights." *Annual Review of Economics* 4 (1): 339–72.

Doss, Cheryl. 2006. "The Effects of Intrahousehold Property Ownership on Expenditure Patterns in Ghana." *Journal of African Economies* 15 (1): 149–80.

Doss, Cheryl, Chiara Kovarik, Amber Peterman, Agnes Quisumbing, and Mara van den Bold. 2015. "Gender Inequalities in Ownership and Control of Land in Africa: Myth and Reality." *Agricultural Economics* 46 (3): 403–34.

Doss, Cheryl R., Caren Grown, and Carmen Diana Deere. 2008. "Gender and Asset Ownership: A Guide to Collecting Individual-Level Data." World Bank Policy Research Working Paper No. 4704. Washington, D.C.: World Bank.
Duflo, Esther. 2003. "Grandmothers and Granddaughters: Old-Age Pensions and Intrahousehold Allocation in South Africa." *The World Bank Economic Review* 17 (1): 1–25.
———. 2012. "Women Empowerment and Economic Development." *Journal of Economic Literature* 50 (4): 1051–79.
Duflo, Esther, and Christopher Udry. 2004. "Intrahousehold Resource Allocation in Cote d'Ivoire: Social Norms, Separate Accounts and Consumption Choices." NBER Working Paper No. 10498. Cambridge: National Bureau of Economic Research.
Dupas, Pascaline, Anthony Keats, and Jonathan Robinson. 2015. "The Effect of Savings Accounts on Interpersonal Financial Relationships: Evidence from a Field Experiment in Rural Kenya." NBER Working Paper No. 21339. Cambridge: National Bureau of Economic Research.
Dupas, Pascaline, and Jonathan Robinson. 2013a. "Savings Constraints and Microenterprise Development: Evidence from a Field Experiment in Kenya." *American Economic Journal: Applied Economics* 5 (1): 163–92.
———. 2013b. "Why Don't the Poor Save More? Evidence from Health Savings Experiments." *American Economic Review* 103 (4): 1138–71. doi:10.1257/aer.103.4.1138.
Emran, M. Shahe, and Forhad Shilpi. 2014. "Land Market Restrictions, Women's Labor Force Participation and Wages in a Rural Economy." Munich Personal RePEc Archive No. 62068. Available at: http://mpra.ub.uni-muenchen.de/62068/.
Fafchamps, M., and A.R. Quisumbing. 2002. "Control and Ownership of Assets within Rural Ethiopian Households." *Journal of Development Studies* 38 (6): 47–82.
FAO. 2009. *The State of Food and Agriculture 2009. Livestock in the Balance*. Rome: Food and Agriculture Organization.
———. 2011a. "Gender Differences in Assets." ESA Working Paper No. 11-12. Rome: Food and Agriculture Organization.
———. 2011b. *The State of Food and Agriculture 2010/11. Women in Agriculture: Closing the Gender Gap for Development*. Rome: Food and Agriculture Organization.
———. 2013. "Understanding and Integrating Gender Issues into Livestock Projects and Programmes: A Checklist for Practitioners." Rome: Food and Agriculture Organization.
Field, Erica. 2003. "Fertility Responses to Urban Land Titling Programs: The Roles of Ownership Security and the Distribution of Household Assets." Mimeo. Cambridge: Harvard University. http://scholar.harvard.edu/files/field/files/field_fertility_05.pdf.
———. 2007. "Entitled to Work: Urban Property Rights and Labor Supply in Peru." *The Quarterly Journal of Economics* 122 (4): 1561–1602.
Field, Erica, Seema Jayachandran, and Rohini Pande. 2010. "Do Traditional Institutions Constrain Female Entrepreneurship? A Field Experiment on Business Training in India." *The American Economic Review*, 125–29.
Galiani, Sebastian, Paul Gertler, Ryan Cooper, Sebastian Martinez, Adam Ross, and Raimundo Undurraga. 2013. "Shelter from the Storm: Upgrading Housing Infrastructure in Latin American Slums." NBER Working Paper No. 19322. National Bureau of Economic Research.
Galiani, Sebastian, and Ernesto Schargrodsky. 2004. "Effects of Land Titling on Child Health and Education." *Economics & Human Biology* 2 (3): 353–72.
———. 2010. "Property Rights for the Poor: Effects of Land Titling." *Journal of Public Economics* 94 (9-10): 700–729.
———. 2011. "Land Property Rights and Resource Allocation." *Journal of Law and Economics* 54 (4): S329–45.
Goldstein, Markus, Kenneth Houngbedji, Florence Kondylis, Michael O'Sullivan, and Harris Selod. 2015. "Formalizing Rural Land Rights in West Africa: Evidence from a Randomized Impact

Evaluation in Benin." World Bank Policy Research Working Paper. Washington, D.C.: World Bank.
Goldstein, Markus, and Christopher Udry. 1999. "Agricultural Innovation and Resource Management in Ghana." Mimeo. New Haven: Yale University. Available at: http://www.econ.yale.edu/~cru2//pdf/finalrep.pdf.
———. 2008. "The Profits of Power: Land Rights and Agricultural Investment in Ghana." *Journal of Political Economy* 116 (6): 981–1022.
Gupta, Jhumka, Kathryn L. Falb, Heidi Lehmann, Denise Kpebo, Ziming Xuan, Mazeda Hossain, Cathy Zimmerman, Charlotte Watts, and Jeannie Annan. 2013. "Gender Norms and Economic Empowerment Intervention to Reduce Intimate Partner Violence against Women in Rural Côte d'Ivoire: A Randomized Controlled Pilot Study." *BMC International Health and Human Rights* 13 (1): 46.
Hallward-Driemeier, Mary, and Ousman Gajigo. 2013. "Strengthening Economic Rights and Women's Occupational Choice: The Impact of Reforming Ethiopia's Family Law." World Bank Policy Research Working Paper No. 6695. Washington, D.C.: World Bank.
Hallward-Driemeier, Mary, and Tazeen Hasan. 2012. *Empowering Women: Legal Rights and Economic Opportunities in Africa*. Africa Development Forum. Washington, D.C.: World Bank.
Hallward-Driemeier, Mary, Tazeen Hasan, and Anca Bogdana Rusu. 2013. "Women's Legal Rights over 50 Years: Progress, Stagnation or Regression?" World Bank Policy Research Working Paper No. 6616. Washington, D.C.: World Bank.
Harari, Mariaflavia. 2014. "Women's Inheritance Rights and Bargaining Power: Evidence from Kenya." Mimeo. Cambridge: MIT. Available at: http://economics.mit.edu/files/10059.
Heise, Lori L., and Andreas Kotsadam. 2015. "Cross-National and Multilevel Correlates of Partner Violence: An Analysis of Data from Population-Based Surveys." *The Lancet Global Health* 3 (6): e332–40.
Herrero, M., D. Grace, J. Njuki, N. Johnson, D. Enahoro, S. Silvestri, and M. C. Rufino. 2013. "The Roles of Livestock in Developing Countries." *Animal* 7 (s1): 3–18.
Holden, Stein, and Mintewab Bezabih. 2008. "Gender and Land Productivity on Rented Land in Ethiopia." In *The Emergence of Land Markets in Africa: Impacts on Poverty, Equity, and Efficiency*, edited by Stein Holden, Keijiro Otsuka, and Frank Place. Washington, D.C.: Resources for the Future Press.
Holden, Stein, Klaus Deininger, and Hosaena Ghebru. 2011. "Tenure Insecurity, Gender, Low-Cost Land Certification and Land Rental Market Participation in Ethiopia." *Journal of Development Studies* 47 (1): 31–47.
Houngbedji, Kenneth. 2015. "Property Rights and Labour Supply in Ethiopia." PSE Working Paper No. 2015-12. Available at: http://www.parisschoolofeconomics.eu/docs/houngbedji-kenneth/property-rights-and-labour-in-ethiopia-(houngbedji,-2015).pdf.
Jack, B. Kelsey. 2013. "Market Inefficiencies and the Adoption of Agricultural Technologies in Developing Countries." White paper, Agricultural Technology Adoption Initiative, J-PAL (MIT) and CEGA (UC Berkeley).
Jakiela, Pamela, and Owen Ozier. 2015. "Does Africa Need a Rotten Kin Theorem? Experimental Evidence from Village Economies." *Review of Economic Studies* , forthcoming.
Jin, Minchao, and Lora L. Iannotti. 2014. "Livestock Production, Animal Source Food Intake, and Young Child Growth: The Role of Gender for Ensuring Nutrition Impacts." *Social Science & Medicine* 105 (March): 16–21. doi:10.1016/j.socscimed.2014.01.001.
Joireman, S.F. 2008. "The Mystery of Capital Formation in Sub-Saharan Africa: Women, Property Rights and Customary Law." *World Development* 36 (7): 1233–46.
Karlan, Dean, Aishwarya Lakshmi Ratan, and Jonathan Zinman. 2014. "Savings by and for the Poor: A Research Review and Agenda." *Review of Income and Wealth* 60 (1): 36–78.

Karlan, Dean, and Jonathan Zinman. 2014. "Price and Control Elasticities of Demand for Savings." Dartmouth College Working Paper. Available at: https://www.dartmouth.edu/~jzinman/Papers/SavingsElasticities_2014_12_post.pdf.

Kast, Felipe, and Dina Pomeranz. 2014. "Saving More to Borrow Less: Experimental Evidence from Access to Formal Savings Accounts in Chile." NBER Working Paper No. 20239. Cambridge: National Bureau of Economic Research.

Keswell, Malcolm, and Michael R. Carter. 2014. "Poverty and Land Redistribution." *Journal of Development Economics* 110 (September): 250–61. doi:10.1016/j.jdeveco.2013.10.003.

Khadiagala, Lynn S. 2001. "The Failure of Popular Justice in Uganda: Local Councils and Women's Property Rights." *Development and Change* 32 (1): 55–76.

Klugman, Jeni, Lucia Hanmer, Sarah Twigg, Tazeen Hasan, Jennifer McCleary-Sills, and Julieth Santamaria. 2014. *Voice and Agency: Empowering Women and Girls for Shared Prosperity*. Washington, D.C.: World Bank.

Kristjanson, Patti, Ann Waters-Bayer, Nancy Johnson, Annita Tipilda, Jemimah Njuki, Isabelle Baltenweck, Delia Grace, and Susan MacMillan. 2014. "Livestock and Women's Livelihoods." In *Gender in Agriculture*, edited by Agnes R. Quisumbing, Ruth Meinzen-Dick, Terri L. Raney, André Croppenstedt, Julia A. Behrman, and Amber Peterman, 209–33. Dordrecht: Springer Netherlands. http://link.springer.com/10.1007/978-94-017-8616-4_9.

Kumar, Neha, and Agnes R. Quisumbing. 2015. "Policy Reform toward Gender Equality in Ethiopia: Little by Little the Egg Begins to Walk." *World Development* 67 (March): 406–23.

La Ferrara, Eliana, and Annamaria Milazzo. 2014. "Customary Norms, Inheritance, and Human Capital: Evidence from a Reform of the Matrilineal System in Ghana." CEPR Discussion Paper No. 10159. London: Centre for Economic Policy Research.

Lastarria-Cornhiel, Susana. 1997. "Impact of Privatization on Gender and Property Rights in Africa." *World Development* 25 (8): 1317–33.

Lastarria-Cornhiel, Susana, Julia A. Behrman, Ruth Meinzen-Dick, and Agnes R. Quisumbing. 2014. "Gender Equity and Land: Toward Secure and Effective Access for Rural Women." In *Gender in Agriculture*, edited by Agnes R. Quisumbing, Ruth Meinzen-Dick, Terri L. Raney, André Croppenstedt, Julia A. Behrman, and Amber Peterman, 117–44. Dordrecht: Springer Netherlands.

Meinzen-Dick, Ruth S., Lynn R. Brown, Hilary Sims Feldstein, and Agnes R. Quisumbing. 1997. "Gender, Property Rights, and Natural Resources." *World Development* 25 (8): 1303–15.

Melesse, Mequanint B., Adane Dabissa, and Erwin Bulte. 2015. "Joint Land Certification Programs and Women's Empowerment: Evidence from Ethiopia." In *Annual World Bank Conference on Land and Poverty 2015: Linking Land Tenure and Use for Shared Prosperity*. Available at: https://www.conftool.com/landandpoverty2015/index.php/Melesse-111-111_paper.pdf?page=downloadPaper&filename=Melesse-111-111_paper.pdf&form_id=111.

Mendola, Mariapia, and Franklin Simtowe. 2015. "The Welfare Impact of Land Redistribution: Evidence from a Quasi-Experimental Initiative in Malawi." *World Development* 72 (August): 53–69. doi:10.1016/j.worlddev.2015.02.010.

Mookerjee, Sulagna. 2015. "Gender-Neutral Inheritance Laws, Family Structure, and Women's Social Status in India." Mimeo. Georgetown University.

Mueller, Valerie, Lucy Billings, Tewodaj Mogues, Amber Peterman, and Ayala Wineman. 2015. "Filling the Legal Void? Experimental Evidence from a Community-Based Legal Aid Program for Gender-Equal Land Rights in Tanzania." IFPRI Discussion Paper No. 01434. Washington, D.C.: International Livestock Research Institute.

Mueller, Valerie, Agnes Quisumbing, Hak Lim Lee, and Klaus Droppelmann. 2014. "Resettlement for Food Security's Sake: Insights from a Malawi Land Reform Project." *Land Economics* 90 (2): 222–36.

Njuki, Jemimah, and Samuel Mburu. 2013. "Gender and Ownership of Livestock Assets." In *Women, Livestock Ownership and Markets: Bridging the Gender Gap in Eastern and Southern Africa*, edited by Jemimah Njuki and Pascal C. Sanginga, 21–38. London: Routledge.

Njuki, Jemimah, and Pascal C. Sanginga, eds. 2013. *Women, Livestock Ownership and Markets: Bridging the Gender Gap in Eastern and Southern Africa*. London: Routledge.

Nkedi-Kizza, Aniku, Awuma, and Gladwin. 2002. "Gender and Soil Fertility in Uganda: A Comparison of Soil Fertility Indicators for Women and Men's Agricultural Plots." *African Studies Quarterly* 6 (1 & 2): 27–43.

North, Douglass C., and Robert Paul Thomas. 1973. *The Rise of the Western World: A New Economic History*. Cambridge University Press.

Panda, Pradeep, and Bina Agarwal. 2005. "Marital Violence, Human Development and Women's Property Status in India." *World Development* 33 (5): 823–50.

Pande, Rohini, and Christopher Udry. 2006. "Institutions and Development: A View from below." In *Advances in Economics and Econometrics: Theory and Applications, Ninth World Congress, Vol II*, edited by Richard Blundell, Whitney K. Newey, and Torsten Persson. Cambridge: Cambridge University Press.

Pender, John, and Berhanu Gebremedhin. 2008. "Determinants of Agricultural and Land Management Practices and Impacts on Crop Production and Household Income in the Highlands of Tigray, Ethiopia." *Journal of African Economies* 17 (3): 395–450.

Peterman, Amber. 2011. "Women's Property Rights and Gendered Policies: Implications for Women's Long-Term Welfare in Rural Tanzania." *Journal of Development Studies* 47 (1): 1–30.

———. 2012. "Widowhood and Asset Inheritance in Sub-Saharan Africa: Empirical Evidence from 15 Countries." *Development Policy Review* 30 (5): 543–71.

Peterman, Amber, Benjamin Schwab, Shalini Roy, Melissa Hidrobo, and Daniel Gilligan. 2015. "Measuring Women's Decisionmaking: Indicator Choice and Survey Design Experiments from Cash and Food Transfer Evaluations in Ecuador, Uganda, and Yemen." IFPRI Discussion Paper No. 01453. Washington, D.C.: International Food Policy Research Institute.

Pica-Ciamarra, Ugo, Luca Tasciotti, Joachim Otte, and Alberto Zezza. 2011. "Livestock Assets, Livestock Income and Rural Households: Cross-Country Evidence from Household Surveys." ESA Working Paper No. 11-17. Rome: Food and Agriculture Organization.

Piza, Caio, and Mauricio José Serpa Barros de Moura. 2015. "The Effect of a Land Titling Programme on Households' Access to Credit." *Journal of Development Effectiveness*, June, 1–27. doi:10.1080/19439342.2015.1057859.

Platteau, Jean-Philippe. 2000. *Institutions, Social Norms, and Economic Development*. Routledge.

Prina, Silvia. 2015. "Banking the Poor via Savings Accounts: Evidence from a Field Experiment." *Journal of Development Economics* 115 (July): 16–31. doi:10.1016/j.jdeveco.2015.01.004.

Qian, Nancy. 2008. "Missing Women and the Price of Tea in China: The Effect of Sex-Specific Earnings on Sex Imbalance." *Quarterly Journal of Economics* 123 (3): 1251–85.

Quisumbing, Agnes R., and Neha Kumar. 2011. "Does Social Capital Build Women's Assets? The Long-Term Impacts of Group-Based and Individual Dissemination of Agricultural Technology in Bangladesh." *Journal of Development Effectiveness* 3 (2): 220–42.

Quisumbing, Agnes R., Neha Kumar, and Julia A. Behrman. 2011. "Do Shocks Affect Men's and Women's Assets Differently? A Review of Literature and New Evidence from Bangladesh and Uganda." IFPRI Discussion Paper No. 01113. Washington, D.C.: International Food Policy Research Institute (IFPRI).

Quisumbing, Agnes R., and John A. Maluccio. 2003. "Resources at Marriage and Intrahousehold Allocation: Evidence from Bangladesh, Ethiopia, Indonesia, and South Africa." *Oxford Bulletin of Economics and Statistics* 65 (3): 283–327.

Quisumbing, Agnes R., and Lauren Pandolfelli. 2010. "Promising Approaches to Address the Needs of Poor Female Farmers: Resources, Constraints, and Interventions." *World Development* 38 (4): 581–92.

Quisumbing, Agnes R., Ellen Payongayong, J. B. Aidoo, and Keijiro Otsuka. 2001. "Women's Land Rights in the Transition to Individualized Ownership: Implications for Tree-Resource Management in Western Ghana." *Economic Development and Cultural Change* 50 (1): 157–82.

Robinson, Jonathan. 2012. "Limited Insurance within the Household: Evidence from a Field Experiment in Kenya." *American Economic Journal: Applied Economics* 4 (4): 140–64.

Roy, Sanchari. 2015. "Empowering Women? Inheritance Rights, Female Education and Dowry Payments in India." *Journal of Development Economics* 114: 233–51.

Roy, Shalini, Jinnat Ara, Narayan Das, and Agnes R. Quisumbing. 2015. "'Flypaper Effects' in Transfers Targeted to Women: Evidence from BRAC's 'Targeting the Ultra Poor' Program in Bangladesh." *Journal of Development Economics* 117 (November): 1–19. doi:10.1016/j.jdeveco.2015.06.004.

Sandefur, Justin, and Bilal Siddiqi. 2013. "Delivering Justice to the Poor: Theory and Experimental Evidence from Liberia." In *World Bank Workshop on African Political Economy*. Washington, D.C.: World Bank.

Schaner, Simone. 2015a. "The Cost of Convenience? Transaction Costs, Bargaining Power, and Savings Account Use in Kenya." Dartmouth College Working Paper. Available at: http://www. dartmouth. edu/~ sschaner/main_files/Schaner_ATM. pdf.

———. 2015b. "The Persistent Power of Behavioral Change: Long-Run Impacts of Temporary Savings Subsidies for the Poor." Dartmouth College Working Paper. Available at: http://http://www.dartmouth.edu/~sschaner/main_files/Schaner_LongRun.pdf.

———. 2015c. "Do Opposites Detract? Intrahousehold Preference Heterogeneity and Inefficient Strategic Savings †." *American Economic Journal: Applied Economics* 7 (2): 135–74.

Sheahan, Megan, and Christopher B. Barrett. 2014. "Understanding the Agricultural Input Landscape in Sub-Saharan Africa: Recent Plot, Household, and Community-Level Evidence." World Bank Policy Research Working Paper No. 7014. Washington, D.C.: World Bank.

Somville, Vincent. 2011. "Daily Collectors & Public Good Provision in Non-Cooperative Households: Theory and Evidence from Urban Benin." Centre for Research in the Economics of Development (CRED) Working Paper Series No. 1106. University of Namur. Available at: https://www.unamur.be/en/eco/eeco/cred/working-papers-files/wp2011/working-paper-2011-somville.pdf.

Udry, Christopher. 1996. "Gender, Agricultural Production, and the Theory of the Household." *Journal of Political Economy* 104 (5): 1010–46.

Valsecchi, Michele. 2014. "Land Property Rights and International Migration: Evidence from Mexico." *Journal of Development Economics* 110 (September): 276–90.

van den Bold, Mara, Andrew Dillon, Deanna Olney, Marcellin Ouedraogo, Abdoulaye Pedehombga, and Agnes R. Quisumbing. 2015. "Can Integrated Agriculture-Nutrition Programs Change Gender Norms on Land and Asset Ownership?" *Journal of Development Studies* , forthcoming.

Waithanji, Elizabeth, Jemimah Njuki, and Bagalwa Nabintu. 2013. "Gendered Participation in Livestock Markets." In *Women, Livestock Ownership and Markets: Bridging the Gender Gap in Eastern and Southern Africa*, edited by Jemimah Njuki and Pascal C. Sanginga, 39–59. London: Routledge.

Wang, Shing-Yi. 2014. "Property Rights and Intra-Household Bargaining." *Journal of Development Economics* 107: 192–201.

World Bank. 2007. *World Development Report 2008: Agriculture for Development*. Washington, D.C.: World Bank.

———. 2011. *World Development Report 2012: Gender Equality and Development*. Washington, D.C.: World Bank.
World Bank, FAO, and IFAD. 2008. *Gender in Agriculture Sourcebook*. Agriculture and Rural Development Series. World Bank Publications.
World Bank, and IFC. 2013. *Women, Business and the Law 2014*. London: Bloomsbury.
———. 2015. *Women, Business, and the Law 2016*. London: Bloomsbury.
World Bank, and IFPRI. 2010. *Gender and Governance in Rural Services : Insights from India, Ghana, and Ethiopia*. Washington, D.C.: The World Bank; International Food Policy Research Institute.
World Bank, and The ONE Campaign. 2014. "Levelling the Field: Improving Opportunities for Women Farmers in Africa." Washington, D.C.: World Bank.

VIII. Appendix: Impact evaluation evidence tables

Table A1. Gender and legal and policy reforms and interventions: Evidence from impact evaluations in Africa

Intervention	*Country*	*Rural / Urban*	*Author(s) & year(s)*	*Method*	*Quality of evidence*	*Gender outcome(s)*	*Key gender findings for policy*
Family law reform	Ethiopia	Rural & urban	Hallward-Driemeier & Gajigo (2013)	Difference-in-difference estimation	Medium	Labor market participation	Reform of Ethiopia's Family Code (which included greater mobility rights and the joint administration of marital property for females) led women – particularly younger women – to work more outside the home and to obtain paid employment.
Inheritance law reform	Kenya	Rural & urban	Harari (2014)	Difference-in-difference estimation	Medium	Educational attainment; female genital mutilation; fertility; intra-household bargaining	Kenya's 1981 Law of Succession resulted in higher human capital investment for females, delays in marriage, and greater say for married women within the household.
Inheritance law reform	Ghana	Rural	La Ferrara & Milazzo (2014)	Difference-in-difference estimation	Medium	Educational attainment	An inheritance reform that affected matrilineal households led to a drop in schooling investment for boys, whose inheritance rights improved following the change. No similar effect is observed among girls.
Dispute resolution for property rights disputes & other conflicts	Liberia	Rural	Sandefur & Siddiqi (2013)	Randomized control trial	Strong	Perceptions of dispute outcome	Women report a higher degree of satisfaction with mediated outcomes than men, suggesting a preference for formal property dispute mechanisms.
Dispute resolution for property rights disputes & other conflicts	Liberia	Rural	Blattman et al. (2014)	Randomized control trial	Strong	Land conflict; destruction of property; norms on women	Alternative dispute mechanism led to reduced conflict and property violence, but this impact did not vary by gender. In addition, no impact was detected on index measure of norms on women's rights.
Community-based legal aid program	Tanzania	Rural	Mueller et al. (2015)	Randomized control trial	Strong	Knowledge; perception of rights	The provision of free legal aid and education by paralegals induced a modest changes in knowledge of legal rights for women and men and women's perceptions on inheritance.

**The evidence for this table was drawn from academic and policy papers that meet the following criteria: i) evaluated the impact of a land-related intervention in Africa; ii) employed an experimental (e.g., RCT, natural experiment) or quasi-experimental (e.g., discontinuity design, propensity score matching, difference-in-difference, IV) design; iii) identified a credible counterfactual group to account for selection bias and other potential confounders of program impact; and iv) reported the impact on women and/or gender differences in impact.*

Table A2. Gender and land: Evidence from impact evaluations in Africa

Intervention	*Country*	*Rural / Urban*	*Author(s) & year(s)*	*Method*	*Quality of evidence*	*Gender outcome(s)*	*Key gender findings for policy*
Land tenure regularization & joint land titling	Rwanda	Rural	Ali, Deininger & Goldstein (2014)	Spatial discontinuity design	Strong	Investment; access to land	While joint titling registration had strong positive effects on rural land investment for male-headed households, the impact on female-headed households was nearly twice as large. The program also boosted access to land for married women -- but unmarried women experienced a relative decline in documented ownership.
Joint land titling	Tanzania	Urban	Ali et al. (2014)	Randomized control trial	Strong	Adoption of joint land titling	Small price discounts for joint titling can help equalize men's and women's documented land ownership – with no loss of demand for titles.
Systematic customary land demarcation & certification	Benin	Rural	Goldstein et al. (2015)	Randomized control trial	Strong	Tenure security; investment; productivity; intra-household bargaining	Rural land demarcation led female-headed households to fallow at greater rates than treated male-headed households. But demarcation also led female-headed households to reallocate their production activities, leading to a decline in yields. No bargaining effects were detected.
Market-oriented land redistribution	Malawi	Rural	Datar et al. (2009)	Propensity score matching	Medium	Assets; agricultural production	Female-headed households increased their productive and consumption assets by more than treated male-headed households. The redistribution program also increased cash crop production among male- (but not female-) headed households.
Market-oriented land redistribution	Malawi	Rural	Mueller et al. (2014)	Propensity score matching	Medium	Share of land titled, owned & leased	While land redistribution strengthened the ownership rights of male and female heads, the program may have eroded the ownership and leaser rights of women living within treated male-headed households.
Market-oriented land redistribution	Malawi	Rural	Mendola & Simtowe (2015)	Propensity score matching	Medium	Land area; agricultural production; food security; assets	Following the program, treated male-headed households – but not female-headed households – registered increases in farm yields and food security. Positive asset impacts did not differ by gender of the head.

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Table A3. Gender and savings: Evidence from impact evaluations in Africa

	Intervention	*Country*	*Rural / Urban*	*Author(s) & year(s)*	*Method*	*Quality of evidence*	*Gender outcome(s)*	*Key gender findings for policy*
Individual and joint savings accounts	Individual bank account	Kenya	Rural	Dupas and Robinson (2013a)	Randomized control trial	Strong	Account adoption & use; investment; expenditure	Individual savings accounts generate substantial increases in women's savings rates, business investment, and expenditure, relative to men and controls.
	Individual and joint bank accounts	Kenya	Rural	Dupas et al. (2015)	Randomized control trial	Strong	Account adoption; income; expenditure; food security; transfers	Men and women preferred individual accounts over joint accounts. Subsidized accounts, meanwhile, were used more intensively by husbands than by wives.
	ATM cards	Kenya	Rural	Schaner (2015c)	Randomized control trial	Strong	Account adoption & use; bargaining power	Both men and women with low levels of bargaining power responded negatively to an ATM card offer.
	Individual and joint bank accounts	Kenya	Rural	Schaner (2015b)	Randomized control trial	Strong	Investment; expenditure; decision-making	Couples with divergent intertemporal preferences are more likely than well-matched couples to forego more deeply subsidized joint savings accounts in favor of individual accounts with lower rates of return.
Commitment savings products	Commitment savings devices (lockboxes), labeling, and group savings	Kenya	Rural	Dupas and Robinson (2013b)	Randomized control trial	Strong	Account adoption & use; preventive health savings; shocks	The provision of a soft commitment device (a lockbox and key), as well as labeled group savings, can generate substantial increases in health savings. Married women benefit even more from the provision of a lockbox and key than unmarried women (though the reverse is true for ROSCA health savings).
	Commitment savings devices, labeling, and index insurance	Burkina Faso & Senegal	Rural	Delavallade et al. (2015)	Randomized control trial	Strong	Account adoption	Women were significantly less likely than men to take up an agricultural index insurance product, suggesting that men and women face different risks.

**The evidence for this table was drawn from academic and policy papers that meet the following criteria: i) evaluated the impact of a land-related intervention in Africa; ii) employed an experimental (e.g., RCT, natural experiment) or quasi-experimental (e.g., discontinuity design, propensity score matching, difference-in-difference, IV) design; iii) identified a credible counterfactual group to account for selection bias and other potential confounders of program impact; and iv) reported the impact on women and/or gender differences in impact.*