

Gender-Inclusive, -Responsive and -Transformative Agricultural Insurance: A Literature Review

Working Paper No. 417

CGIAR Research Program on Climate Change,
Agriculture and Food Security (CCAFS)

Anne G. Timu
Berber Kramer



RESEARCH PROGRAM ON
**Climate Change,
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Abstract

This literature review uses a gender analysis framework proposed by Johnson et al. (2018) to explore the extent to which agricultural insurance reaches, benefits and empowers women and men. We find that most studies on gender and agricultural insurance focus on gender inclusivity by analyzing gender gaps in insurance *reach* and studying how to increase take-up among women. By contrast, limited attention has been paid to understanding gender equity in the distribution of insurance outcomes, that is, the extent to which insurance benefits and empowers women as much as men. We show that insurance programs can promote gender equity in *benefits* by providing quality insurance products that are beneficial to both men and women, and through long-term monitoring of individual outcomes measured within households using gender-disaggregated data. Insurance programs can support gender *empowerment* by ensuring that contracts purchased by women are registered under their names and payouts are subsequently paid to their accounts, by bundling insurance with empowerment programs, and by preserving and promoting informal mutual assistance group activities and membership. We then draw on a case study in Kenya to illustrate how this framework can be applied to design more gender-inclusive, -responsive and -transformative insurance schemes.

Keywords

Agricultural insurance; Gender; Empowerment; Literature Review; Kenya

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Introduction

In most rural areas of developing countries, women farmers face a host of social, institutional, and economic constraints that increase their vulnerability to climate-related production and income shocks. First, compared to men, women tend to own and control fewer productive assets, including land and livestock (Quisumbing et al. 2015), limiting opportunities to diversify risks and cope with shocks. Second, they spend an important part of their day on domestic, reproductive roles, and unpaid care work, reducing their mobility and access to important agricultural services (Ferrant et al. 2014), which could help invest in risk-mitigating practices and technologies. Third, systematic gender biases in parental allocation of intra-household resources including educational investments constrain women's economic opportunities (Behrman et al. 1997), and thus their ability to manage risks. Although informal mutual assistance groups have been shown to be relatively effective in helping women and other poor households manage risks (di Falco and Bulte, 2013), such arrangements do not function effectively for covariate climatic shocks that affect all community members at the same time (Alderman and Haque, 2007). These factors expose women to chronic economic and social repercussions associated with climatic uncertainties.

In recent decades, there has been a growing interest in the use of agricultural insurance as a tool to manage covariate risks related to climate and weather uncertainties. Between 2007 and 2019, the value of agricultural insurance premiums sold globally grew from US\$20 billion to US\$ 30 billion (Mahul and Stutley, 2010; Swiss Re, 2019). Interest in agricultural insurance stems from its potential impact in providing financial protection to poor rural households, helping them preserve their productive assets and maintain consumption in the face of climatic shocks (Janzen and Carter, 2019). Agricultural insurance also enables farmers to take on more risks *ex ante* and increase investment in their farms despite the anticipation of crop or livestock losses in the face of a possible weather event (Karlan et al. 2014; Jensen et al. 2017). Insurance might further serve as a substitute for collateral, improving access to formal and informal credit and enabling farmers to purchase modern farm inputs and productive assets to

improve their farm productivity and incomes over time (Farrin and Miranda, 2015). Improved farm productivity can in turn lead to lower food prices benefiting consumers (Hazell and Varangis, 2020) and reduce government expenditure on safety-nets (Janzen et al. 2021) which offers a longer-term ‘win-win’ solution.

A few studies however indicate that the long-term effects of insurance on household well-being are rather weak (Tobacman et al. 2017) and insurance benefits are skewed to wealthier farmers—who are more likely to be men (Glauber 2012). Failing to acknowledge gender inequities in the distribution of insurance outcomes can limit the long-term effectiveness of insurance as a risk-coping strategy. This paper therefore reviews the available evidence on how to create gender equity within the context of agricultural insurance schemes, focusing on three sets of outcomes: whether insurance is gender inclusive, gender responsive, and gender transformative.

Most gender-based studies have evaluated ways to make insurance *gender-inclusive*, and ensure that it reaches both men and women, both in terms of their awareness of the possibility and ways to enroll in insurance and eliminating gender gaps in actual enrollment into insurance schemes (Fletschner and Kenney 2011; IFAD 2020; Greatrex and Huyer 2020). However, more recent literature argues that gender approaches in agriculture development projects should move beyond inclusion to integrate facets of gender-responsive and gender-transformative approaches into all aspects of program conceptualization, development, implementation, and evaluation (Johnson et al. 2018). *Gender-responsive* approaches understand men’s and women’s different needs and interests and make deliberate efforts to ensure that programs equitably benefit both men and women, without harming either gender (Valencia, 2021), but such approaches do not deliberately challenge unequal power relations in the society (Johnson et al. 2018). By contrast, *gender transformative* approaches explicitly engage both women and men to examine, question, and change the institutions and norms that reinforce gender inequalities promote positions of social and political influence for women in communities, and address power inequities. Such approaches take the burden of change off women, recognizing that gender equality is the responsibility of everyone (World Economic Forum, 2021).

Although few studies have considered how agricultural insurance could reinforce issues of gender inequalities (Fisher et al. 2018; Reeves 2017), the studies have narrowly focused on inequities in design and delivery mechanisms. We however expect that agricultural insurance will have far-reaching impacts on intrahousehold dynamics such as labor allocation, market integration, resource use and allocation, among others. As such, it is important to understand the gender dimensions of agricultural insurance beyond design and delivery mechanisms. Our study seeks to contribute to this literature by answering the following two questions: i) How are insurance outcomes distributed among men and women in the society? And ii) How can insurance practitioners design products and programs that are gender-inclusive, gender-responsive, and gender-transformative, so that insurance reaches, benefits and empowers men and women alike?

To answer these questions, this literature review applies a framework for analyzing gender outcomes of agricultural development programs (Johnson et al., 2018) to conduct a comprehensive evaluation of the distribution of insurance outcomes for women and men. We also draw on a case study in Kenya to illustrate how insurance programs can be tweaked to become more gender-inclusive, -responsive and -transformative. We find that most studies on gender and agricultural insurance focus on gender inclusivity, and that less attention has been paid to understanding gender equity in the distribution of insurance outcomes. Our review shows that insurance programs can be gender-inclusive and promote insurance reach in both women and men by addressing both demand- and supply-side constraints to uptake. We also find that the provision of quality products through bundling complementary risk management strategies, and long-term monitoring of individual outcomes can be a gender-responsive approach of improving insurance benefits to both men and women. Finally, we show evidence that insurance can be gender-transformative and support women empowerment by ensuring that contracts purchased by women are registered under their names and payouts are subsequently paid to their accounts, by bundling insurance with gender empowerment programs, and by preserving and promoting informal mutual assistance group activities and membership.

The remainder of the paper is structured as follows. First, section 2 provides a framework for evaluating gender impacts and analyzing the distribution of agricultural insurance outcomes. Next, section 3 provides an application of the framework to review gender equity in the existing literature on agricultural insurance programs for development. Section 4 provides case studies based on insurance research in Kenya, and finally, section 5 concludes with a discussion of our findings.

Framework for analyzing gender impacts of agricultural development interventions

In this section, we discuss how gender intersects with agricultural insurance, using a framework by Johnson et al. (2018) for analyzing gender impacts of agricultural development interventions. The framework acknowledges that a gender approach requires looking beyond the stated objective to the set of activities the project undertakes, the possible gender outcomes and impacts of these activities, and the indicators through which it proposes to measure these outcomes and impacts. The framework proposes three distinct approaches to achieving and evaluating gender impacts (see Figure 1): reach (the extent to which a program is gender inclusive), benefits (gender responsive), and empowerment (gender transformative).

REACH	BENEFIT	EMPOWER
<u>Objective</u>	<u>Objective</u>	<u>Objective</u>
Include women in programs activities	Increase women's wellbeing e.g. health, food security, resilience etc.	Strengthen the ability of women to make strategic life choice and to put those choices into action
<u>Strategy</u>	<u>Strategy</u>	<u>Strategy</u>
Inviting women as participants, seeking to reduce barriers to participation, implementing a quota system for participation in training events	Designing a project to consider gender needs, preferences, and constraints to ensure that women benefit from the project activities	Enhancing women's decision-making power in household, and communities
<u>Indicators</u>	<u>Indicators</u>	<u>Indicators</u>
Number or proportion of women participants in a project activity, e.g. attending training, using the product, receiving extension advice etc.	Sex-disaggregated data for positive and/or negative outcomes such as productivity, income, assets, nutrition, time use etc.	Women's decision-making power. Reduction of outcomes associated with disempowerment.

Figure 1: Project Approaches to Women. Source: Johnson et al. (2018)

Johnson et al. (2018) describe *reach* as including women as participants in program activities and tracking their progress over time. The program can also track the percent of women with access to extension, training materials or any other services supported by the project. They recommend that programs ensure women participation through the identification and alleviation of gender-based constraints to participation—for example changing time and place for meetings, forming women-only groups, hiring women staff in implementing organizations, and having a minimum requirement for women participation. However, reaching women is not always sufficient for gender inclusion. Theis and Meinzen-Dick (2016) show that while counting and facilitating women's participation is important, programs that only record the number of female participants may miss important intrahousehold and community dynamics that might still prevent certain groups of women from participating. Moreover, even when reaching women in an inclusive way, a program may still dilute or redistribute program benefits away from women. For example, a

program might create the unintended consequence of increasing women's time burdens.

The *benefit* component of this framework argues that the project design, implementation, and evaluation should be focused on ensuring that whatever outcomes the project is seeking—reduced hunger, increased health and income, greater resilience—are captured and valued by both men and women, and that a program does not harm either of them. This requires considering both women's and men's needs and constraints in design, development, and implementation of program activities, and closely tracking benefits at individual level through monitoring and evaluation. Programs that improve women's productivity, incomes, nutritional status, and other women's welfare indicators are an important first step to reduce underlying inequalities between men and women. However, even when a program succeeds in increasing women income, it does not necessarily increase women's control over that income (Quisumbing et al, 2013) and may increase their workload or time poverty. In addition, when program benefits are skewed towards women, it may trigger backlash and cases of gender-based violence from men (Goodman and Kaplan, 2017).

As a result, development practitioners have recognized the importance of women's empowerment in conjunction with gender-responsive programming as a more gender-transformative means to enhance agricultural production and rural development. Projects that empower women by increasing their bargaining power within the household and by changing the underlying balance of power between men and women are less prone to backlash by men (Theis and Meinzen-Dick, 2016). *Empowering* women entails strengthening their ability to make strategic life choices (including financial decisions, expenditures and investments) in a context where this ability was previously denied. Empowerment has three inter-related dimensions; resources, which includes economic, human, and social resources which serve to enhance the ability to exercise choice; agency, which is the ability to

defines ones' goals and act upon them; and achievements, which refers to the particular way of being and doing which are realized by different individuals. Indicators to track empowerment should therefore include not only agency or decision-making power but also measures of resources and achievements in domains such as intimate partner violence, time burden and mobility (Kabeer, 1999).

To quantify these concepts, and identify sources of (dis)empowerment, one can use the Women's Empowerment in Agriculture Index (WEAI; Alkire et al. 2013) or the more recent project-level WEAI (pro-WEIA; Malapit et al. 2019). Pro-WEAI builds on the WEAI, but the former has more comprehensive and explicit links to empowerment theory. Moreover, pro-WEAI can be used as a metric for measuring the impact of agriculture development projects on women's empowerment, and as a diagnostic tool for tailoring programs to address sources of (dis)empowerment. Pro-WEIA has 10 indicators mapped to three domains: instrumental agency (power to), intrinsic agency (power within), and collective agency (power with). Instrumental agency has six indicators: input into productive decisions, ownership of land and other productive assets, control over use of income, access to and decisions on financial services, work balance, and ability to visit important locations. Intrinsic agency has three indicators: autonomy in income, self-efficacy, and attitudes about intimate partner violence against women. Collective agency is measured through an indicator of group membership (Malapit et al. 2019).¹

¹ Originally, pro-WEAI included 12 indicators, but two indicators were dropped from the index after final validation: respect among household members (intrinsic agency) and membership in influential groups (collective agency).

1. Gender Dimensions of Agricultural Insurance

In this section, we present our literature review based on the Johnson et al. (2018) framework, presenting first the available evidence regarding gender gaps in the reach of insurance (awareness and access to insurance); followed by gender gaps in the benefits derived from insurance (the extent to which insurance is equally valuable to women and to men); and finally, we discuss mechanisms through which insurance can be empowering for both women and men, using the 10 pro-WEIA indicators.

1.1. Agricultural Insurance Reach

For programs aiming to be gender inclusive, an explicit objective is to increase access and uptake of agricultural insurance products among both women and men. Recent literature has highlighted the gender-based disparities in access and usage of agricultural insurance products. Field experiments conducted in Senegal and Burkina-Faso show that insurance demand is much stronger among men than women (Delavallade et al. 2015). Similar results were obtained through experiments in southern Asia (Clarke and Kumar, 2016; Akter et al. 2016). In Ethiopia, although insurance is equally accessed by both men and women, women are likely to purchase lower value coverage (Bageant and Barrett, 2017). These studies attribute low access and usage of agricultural insurance among women farmers to both demand and supply-side barriers.

In terms of demand-side barriers, high insurance premiums and the upfront payment requirement makes liquidity a major constraint to access agricultural insurance (Gine et al. 2008; Casaburi and Willis, 2018). This disproportionately affects women's ability to purchase insurance, since women are overrepresented among the world's poor (Quisumbing et al. 2003) and have limited access to formal credit

services relative to men (Fletschner and Kenney, 2011), reducing their ability to pay for agricultural insurance products. In many settings, women's lower education and financial literacy levels relative to men also make it difficult to understand the complicated contract designs and compensation mechanisms inherent to agricultural insurance. In addition, behavioral field experiments have found that women, on average, tend to have higher degrees of risk aversion and make less risky choices compared to men (Eckel and Grossman, 2008; Clarke and Kumar, 2016; Bageant and Barrett, 2017). This could increase demand for insurance, but reduces demand when there is basis risk, that is, when payouts are not adequately correlated with the actual losses that a farmer experience (Clarke, 2016). Further, since agricultural insurance products are targeted at clients with little to no prior experience with insurance, consumer trust is an important aspect in insurance purchase decisions (Jensen and Barrett, 2017; Cole et al. 2013). A lack of trust could significantly reduce women's take-up of agricultural insurance if they are less likely than men to trust others when making financial decisions, as is the case in Buchan et al. (2008) and Akter et al. (2016). Finally, even if demand for insurance is higher among women than among men, there could be cultural barriers whereby women cannot make decisions regarding major investments without consulting their spouses or men in leadership positions in the community.

Regarding supply-side barriers, there are well-founded concerns that agricultural insurance is developed without women farmers in mind. To begin with, women face higher levels of risks such as risk of childbirth, domestic workload (e.g., searching for water and firewood), reduced access to labor markets among others. Moreover, insurance tends to cover a single risk associated with one type of production (e.g., drought, or floods crop or livestock risks), leaving many risks uninsured by conventional agricultural insurance products. Such background risk may reduce investments in agriculture and demand for agricultural insurance, but the response to background risks varies by gender

(Mastenbroek and Kramer, 2022). A second concern is that agricultural insurance distribution models do not support women needs; most insurance trainings are offered as a one-off single day training, and it is unlikely that women farmers with low financial literacies will get a complete grasp of the insurance product in one sitting. Further, training schedules might exclude time-constrained women who are involved in household production activities, and training sites can be more difficult to visit for women with limited access to transport or facing restrictive gender norms that prevent them from participating (Fletschner and Kenney, 2011). Finally, the training and extension modules through which insurance is marketed are male dominated with non-local trainers. Bageant and Barrett (2017) shows how such models are unfavorable to women due to their vulnerability to pressure by sales agents.

Existing literature proposes several approaches to addressing both demand- and supply-side constraints to improve insurance reach for both men and women. On the demand side, insurance providers could adopt gender-inclusive distribution channels and extension mechanisms that address gendered barriers to insurance take-up. Suggested extension approaches to address women's limited time and physical mobility include partnering with local service providers, using individualized extension approaches, and leveraging increasing rates of mobile phone and internet penetration in rural areas to provide flexible mobile-based learning materials (Fletschner and Kenney, 2011). Insurance providers can address concerns around low educational and financial literacy by providing literacy materials that are easily understood by both men and women; this includes the provision of visual learning aids that both women and men can relate with—using animated videos and skits with not only male but also female farmers—and, translating learning materials into local language, which can help break down complex insurance concepts into language that is easily understood by both men and women. Another option would be the adoption of a delayed payment system where farmers pay for the

premiums at the end of the insurance cycle (Casaburi and Willis, 2018; Belissa et al. 2019). Paying at the end of the insurance cycle could help overcome trust-related barriers associated with a lack of initial insurance experience, and addresses liquidity constraints to insurance take-up. This model however requires strong institutional structures where farmers can be held accountable at the end of the season, such as contract farming or strong ties with farmer associations (Kramer et al, 2021).

Moving to supply-side constraints, insurance providers can enhance gender reach by providing standard products that are attractive to both men and women. This includes, but is not limited to, bundling insurance with complementary risk management strategies such as improved seeds, fertilizer, or credit, but this is only gender inclusive if both women and men have equitable access to these types of solutions, which may not always be the case (see, e.g., Brearley and Kramer, 2020). Another option would be using educational material that supports continuous learning as opposed to a one-off single-day training, using for instance posters, fliers, and mobile phone-based SMS and gamification applications. Insurers can also adopt a bottom-up approach by engaging in market research to understand the differential needs for men and women. Conducting a needs assessment will help develop a suite of insurance products to serve both men and women from different socioeconomic classes and demographic groups. This might include offering farmers a menu of insurance options for various risks as opposed to a homogenous standalone product that is targeted at a specific risk (Ceballos and Robles, 2020). Finally, increasing the number of women trainers and extension agents has the potential of improving reach to women clientele (Cecchi et al. 2021).

1.2. Gendered Distribution of Costs and Benefits of Agricultural Insurance

Agricultural insurance products, as many other consumer products, come with both individual and social costs and benefits. A number of studies evaluate the welfare impacts of agricultural insurance at the household level (Jensen et al; 2017; Janzen and Carter 2019; Hill et al. 2019; Timu et al. 2021 among others). Few of these studies recognize the heterogeneous nature of the target population and only one (Timu et al. 2021) evaluates the differential welfare impacts by the gender of the household head. The consensus of these heterogeneous welfare assessments is that agricultural insurance has the potential of helping the poor and women-headed households in managing climate related production risks via increased agricultural productivity, incomes, food consumption and asset accumulation.

On the other hand, insurance can have negative intended and unintended consequences. First, studies reveal that agricultural insurance access can induce moral hazard and adoption of risky production practices, which might have negative effects on the environment. For example, farmers with access to insurance, particularly heavily subsidized products, might adopt environmentally risky behaviors such as overgrazing, production on unsuitable land, and overuse of agrochemical inputs (Dougherty et al. 2021, Möhring et al. 2020, Weber et al. 2016; John et al. 2019). These practices have negative consequences on groundwater, biodiversity, and general human and livestock health. Although the gender dimensions of the distribution of these externalities are not explicitly documented, we expect women to be disproportionately affected because of their role in the domestic production and their social and economic status. In addition, OECD (2001) shows that the poor and women are generally more likely to suffer from negative environmental externalities than men and richer farmers.

Second, formal insurance has the potential to crowd-out informal sharing arrangements and risk coping mechanisms (Boucher and Delpierre. 2014; Will et al. 2021). This especially expected when insurance is offered at individual levels and the trigger levels are set too low. When this happens, women—who mostly rely on mutual assistance groups to manage agricultural risks but who are also more likely to be excluded from the formal insurance markets (Perez et al. 2015)—will be left with slimmer options to self-insure. This outcome ultimately increases exposure to risks, meaning that insurers would need to provide more comprehensive insurance coverage, which can further increase commercial loadings and drive premium rates up.

A third concern is that access to agricultural insurance promotes the specialized production of cash crops and high-yielding livestock species at the expense of farm diversification, on-farm food diversity, and locally adapted varieties. Women are more likely than men to plant indigenous and locally adapted crop varieties, such as millet and sorghum in Africa (Nchanji et al. 2021). As such, an insurance-related loss in genetic diversity and long-term reduced ecological resilience is likely to affect women farmers more than their male counterparts. In addition, when farm production becomes commercially oriented, there is a possibility that men may come in and control the incomes from a crop that was previously controlled by women, thereby relegating women to labor providers (Quisumbing et al. 2015; Orr et al. 2016). Finally, farm specialization might result in surplus supply of the insured commodity, which can in turn suppress the prices of the commodity (Habtemariam et al. 2021). Such price distortions can have more severe impacts on women farmers due to their limited market integration compared to men's (Baden 2013).

Unfortunately, to date, impact evaluations of agricultural insurance have focused primarily on changes reported by household heads, or changes in household-level consumption; not on the distribution of welfare impacts within households. Studies that evaluate

heterogeneity in impacts by gender of household heads focus on male-versus female-headed households, which does not shed light on the impacts for the women population at large, as women will most likely reside in male-headed households. If their spouses, brothers, fathers, or sons report an increase in income, or if there is an increase in household-level consumption, that does not necessarily mean better welfare outcomes for women in those households. The studies also fail to capture broader insurance outcomes such as environmental externalities, price and market distortions, change in labor demand, and the destabilization of informal social structures. A priority for designing gender-responsive insurance products is therefore understanding how insurance costs and benefits are distributed among men and women; not just by comparing male- and female-headed households, but also comparing outcomes within households. This can be achieved by collecting gender-disaggregated individual-level data and conducting holistic gender-based needs assessments, impact assessment studies and long-term monitoring of impacts at individual levels (IFAD, 2020; Kramer et al. 2021).

1.3. Agricultural Insurance and Gender Gaps in Empowerment

If agricultural insurance successfully increases women's agricultural productivity and incomes, the question still remains whether women can control how this income is used. In addition, impacts on production technologies and practices that affect a household's livestock herd composition and change in farm input use might have direct implications for intrahousehold labor allocations and time use. These factors can be an important source of gender (dis)empowerment. However, empirical literature on the extent to which insurance empowers or disempowers women and men is sparse. In this subsection, we therefore conceptualize the potential impact of agricultural insurance on women's empowerment, focusing on the

three domains in the project-level Women's Empowerment in Agriculture Index (pro-WEAI): instrumental, intrinsic, and collective agency. We will discuss the potential impacts of insurance on each of these three domains for both men and women at the individual level.

First, we evaluate possible pathways through which agricultural insurance can impact women's instrumental agency: their ability to influence decisions, to access and control productive resources and financial services, to attain a work-life balance, and to visit important locations. One of the sources of women's disempowerment is their reduced bargaining position due to high economic dependency on men (Kabeer, 2013). As such, we expect that increased agricultural productivity and incomes due to insurance can directly improve women's bargaining power and give women a voice to participate in household decision making, and access and control productive resources. This is especially true if rural women remain central actors in controlling income from livestock products such as milk and eggs (McPeak and Doss 2006; Kristjanson et al. 2010), and in shaping household food consumption (Nisbett et al. 2017). Some insurance programs also require clients to operate a bank account or mobile money account, this can directly increase financial market integration for traditionally excluded groups. Further, when lenders use insurance premiums as a collateral against borrowing, insured women are able to access formal credit services. It is also possible that insurance promotes adoption of time-saving agricultural technologies, thereby freeing women to pursue other utility maximizing activities. Finally, when insurance increases input use and unlocks access to new market opportunities, women's physical mobility can be improved, contributing to greater agency.

In terms of intrinsic agency, we expect that effects will be primarily driven by both men and women having peace of mind and knowing that they will receive insurance payouts in the face of climatic shocks, and this, in turn, giving them the confidence or opportunity to take up

credit and invest in profitable technologies and practices, allowing them to realize improved agricultural payoffs. As a result, they will not only experience some autonomy in income use, but also experience enhanced sense of well-being and self-efficacy. This includes but is not limited to their confidence and ability to set out goals, accomplish tasks, and overcome challenges. Tafere et al. (2019) indeed finds that when pastoral households in Ethiopia have insurance coverage, their sense of well-being is significantly higher relative to that of non-insured households, even without a payout. Another pathway to improved intrinsic agency is that insurance provides a safety net and can thereby reduce tension within the household, or reduce economic dependency on men, which is likely to reduce cases of intimate partner violence and the perception towards it (Heath et al. 2020; Breiding et al. 2015). Reducing economic dependency is especially realized when contracts purchased by women are registered under their names (not their spouses) and payouts are subsequently paid to the policyholders. Making payouts to women instead of men could in theory also trigger domestic violence, but a growing body of evidence on cash transfers rejects this hypothesis (Hidrobo et al. 2021).

Finally, literature has illustrated how offering group insurance as opposed to individual insurance could be more beneficial especially to women (Dercon et al. 2012; Hill et al. 2013; Clarke et al. 2015). Group contracts can help promote a dialogue around insurance and thereby allow group members to better understand the product. Moreover, by acting collectively, groups will be better placed to enforce insurance contracts, which might help overcome trust-related barriers. Group contracts also reduce the cost of marketing for the insurer and diversify insurance pools, which helps insurers lower the insurance premiums. Finally, group contracts can help manage idiosyncratic basis risk (Dercon et al. 2014), allowing insurers to limit coverage to extreme events only (Müller et al. 2017). However, the question of how insurance can empower women to attain collective agency through joining groups is not explicitly addressed in the literature. One pathway

through which insurance can improve collective agency is by offering insurance through existing local groups and improving group functioning. In jointly liable microfinance groups, group insurance contracts can help overcome free-riding on contributions to loan repayment from other group members, reducing default rates (Janssens and Kramer, 2016). This stabilizes group welfare and could make it attractive for non-members to join the group, strengthening collective agency.

Case Study

Thus far, we have used literature reviews to describe the extent to which insurance programs are gender-inclusive, -responsive, and -transformative. In this section, we use a case study from an insurance program in Kenya to provide a more practical application of the Johnson et al. (2018) framework and demonstrate how insurance programs could be adapted to have stronger contributions to reducing gender gaps and advance gender equity in reach, benefits and empowerment.

In 2019, a consortium including ACRE Africa—a private sector company that designs and provides solutions to improve agricultural risk management—, the International Food Policy and Research Institute (IFPRI), the Kenyan Agricultural and Livestock Research Organization (KALRO), and Wageningen University and Research, launched a crop insurance program aimed at promoting smallholder farmers' risk management in Kenya. The insurance program provides two different types of crop insurance. A first product, weather index-based insurance (WBI), makes payouts when farmers are in a region where satellite-derived rainfall measures are indicative of either a drought or excess rainfall. A second product, picture-based insurance (PBI), provides insurance coverage for damage detected from a time-lapse of the insured crop, built from both pre- and post-damage georeferenced

pictures that farmers take themselves using regular, low-cost smartphones (Ceballos et al. 2019). In this section, we use experiences from the program to evaluate how agricultural insurance can be adapted to become more gender inclusive, responsive, and transformative.

2.4.1. Addressing Gender Equity in Insurance

Reach

To ensure that its insurance program is equally accessible for women as for men, ACRE Africa uses village extension service providers (VESPs), basically community-based champion farmers, to provide insurance education, enroll farmers into the program, and market and distribute the insurance products. VESPs are equipped with smartphones and trained on how to use them. They are also trained on how to sell and distribute agricultural insurance products. Using extension workers drawn from the local community and partnering with local service providers (such as agrovets) is a gender-inclusive approach by improving trust and accessibility of insurance products for both women and men. In addition, using mobile-phones to purchase insurance cover and receive payouts can help overcome mobility and time burden-related barriers that women face in accessing insurance (Fletschner and Kenney, 2011).

To analyze the extent to which this is indeed a gender-inclusive approach, we report data from an experiment that was conducted to elicit farmers' willingness to pay (WTP) for a variety of products, varying whether insurance payouts are made into one's own account ('self'), versus a spouse's account ('spouse'). The results indicate that overall, women's WTP was higher than men's WTP (Figure 2). Although the difference is not statistically significant, these findings are still contrasting previous studies reporting sex-disaggregated data on WTP,

which find a significantly lower WTP among women (Hill et al. 2013; Clarke and Kumar, 2016). This could suggest that women prefer the extension and marketing approach provided by the ACRE Africa program. It is also important to note that when payouts are made to individual mobile money accounts ('self'), the WTP among both women and men is significantly higher than when insurance payouts are made into the spouse's account. This means that for the program to reach both women and men, it is important to ensure that prospective clients have access to their personal mobile money accounts.

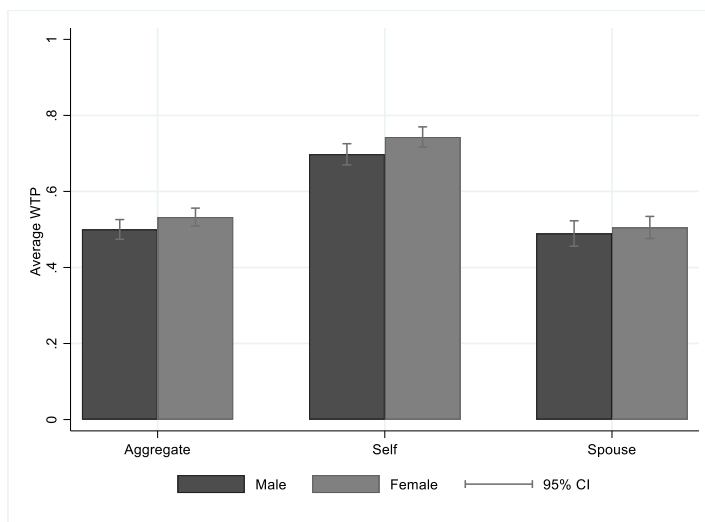


Figure 2: Willingness to pay (as a proportion of the total product cost) by gender and recipient of insurance payouts.

A second strategy that the program adopted to help overcome gender gaps in the reach of insurance was to purposively recruit a higher number of female VESPs (about 60 percent). The expectation was that this would encourage women's participation in the insurance distribution process and that female VESPs would be able to reach more women farmers. A recent study on the ACRE Africa program indeed found that female VESPs enrolled relatively more women clients than male VESPs (Cecchi et al. 2021). Moreover, an experiment to evaluate WTP among the VESPs or champion farmers shows that when women actively participate in the insurance process—as extension workers in this case—their WTP is far higher than that of men (Figure 3). This holds true particularly when payouts are made in VESP's own mobile money

account, bringing the average WTP to sustainable levels, well exceeding the actual product cost. These findings suggest that including women as actors in the insurance value chain (not just as end users) has the potential of closing the gender gap in insurance uptake.

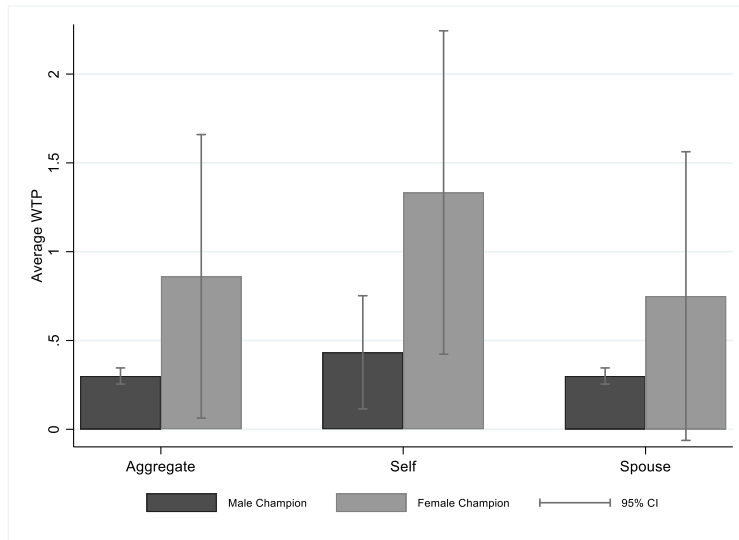


Figure 3: Willingness to pay (as a proportion of the total product cost) by VESP gender and recipient of insurance payouts

4.2 Addressing Gender Equity in the Distribution of Insurance Benefits

A second area that we explore is the potential for the program to be gender responsive and improve gender equity in the distribution of insurance benefits. We thereby focus on a key feature of the program: the insurance product is offered in combination with the marketing and distribution of seeds for improved sorghum, maize, and green gram varieties.

In the past few decades, Kenya has made significant progress in developing productivity-enhancing drought- and disease-tolerant varieties that could help reduce smallholder production risks due to climate uncertainty. However, past research shows that women are

more likely to be excluded from the formal seed market systems than men, making it more difficult for them to access these improved varieties (Marimo et al. 2021). In order to increase the benefits that women derive from insurance, the ACRE Africa insurance program bundles insurance with high-quality seeds of improved varieties. An experiment to elicit farmers' WTP for insurance products bundled with seeds or bundled with seeds and pesticides shows that the WTP for both products are higher among women than among men (Figure 4). Although gender differences are not statistically significant, they provide insights on how bundling risk management strategies can be a gender-responsive approach to providing quality products that meet women's preferences while providing wider benefits of access to complementary agricultural services.

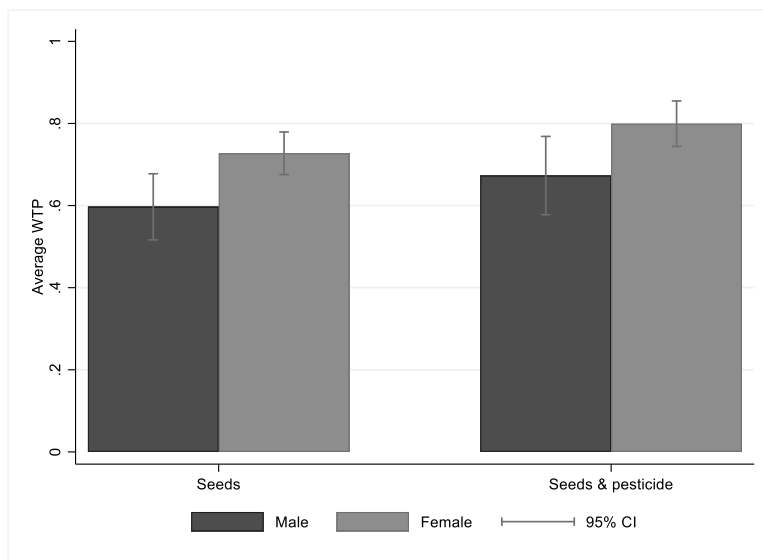


Figure 4: Willingness to pay (as a proportion of the total product cost) by gender and type of bundle

The program has also collected representative sex-disaggregated data to separately monitor program impacts at the individual level. Currently, there is ongoing work to evaluate the impacts of the program on agricultural production, coping strategies and household welfare. Findings from an endline survey that is scheduled for mid-2022 will help quantify the gendered distribution of program benefits. Collecting sex-disaggregated data and monitoring insurance impacts at

individual level is one of the main approaches to test whether a program has equitable impacts for women and men and will provide insights for how to further improve the gender responsiveness of the insurance program.

4.3. Addressing gender equity and women empowerment

A final component of the Johnson et al. (2018) framework analyzes to what extent, and how, the program reduces gender gaps in empowerment. Using the pro-WEIA approach, the program collected baseline data to understand sources of (dis)empowerment among men and women at the individual level, as a diagnostic tool to strengthen program design in a more gender-responsive and gender-transformative way. A recent analysis of the baseline pro-WEAI data shows that women in the study area are more disempowered than men. Moreover, primary sources of disempowerment among both women and men include a poor work-life balance, limited control over use of income, limited autonomy in decision making; and, only among women, the perception that domestic violence is acceptable (Cecchi et al. 2021).

The program is aiming to directly contribute to narrowing these empowerment gaps by improving women's visibility, physical mobility, and integration into the formal financial markets. Cecchi et al. (2021) highlights three ways in which the program could promote gender equity and women empowerment, using the pro-WEAI findings as a diagnostic tool. First, by making payouts to beneficiaries directly through their personal mobile phones and helping beneficiaries without accounts register for one, the program could help address concerns around limited control over the use of insurance payouts and limited

autonomy in decision-making when respondents do not directly receive these payouts, or when they cannot hide them in a personal account. This would also help increase the willingness to pay and thus demand for insurance (see Figure 2). Second, the program is aiming to help reduce farmers' workload and especially women's time poverty by bundling insurance with advisories on time-saving technologies and practices, including for instance appropriate planting times. Finally, the program is planning to provide behavioral change platforms to shift attitudes towards domestic violence and empower women to make contributions in important decisions and to take control of their incomes.

Empowering women and men are important development objectives in their own regard but could also improve take-up of insurance products. For instance, when men and women feel that they have control over their own lives, they may want to take fate in their own hand and take up insurance coverage to prepare for possible losses in agricultural income. Instrumental agency will endow women and men to take their preferred financial decisions and access the resources needed to pay insurance premiums, also potentially increasing take-up. For collective agency, effects could go both ways. On the one hand, if group dynamics favor insurance take-up, collective agency and social capital could increase demand for insurance, but it could also be associated with strong informal risk sharing networks and reduce demand for insurance.

To shed light on the association between empowerment and insurance demand, we combine individual-level pro-WEIA data with the experiment used to elicit WTP for agriculture insurance. Figure 5 plots the WTP for insurance for women (left figures) and men (right figures), comparing individuals who are disempowered versus empowered based on their instrumental agency (top row), intrinsic agency (middle row) and collective agency (bottom row). We find that when both men and

women have a strong sense of both instrumental and intrinsic agency, their WTP for insurance is increased, regardless of whether insurance is bundled with seeds only, or with seeds and pesticides. We also find that women who are empowered in the collective agency domain have a higher WTP for both insurance bundles. However, we do not replicate this finding for men; men who lack group membership (the indicator that determines collective agency) are willing to pay more for both insurance bundles than men who are members of an agricultural group. Of course, these are correlations, and do not necessarily imply that empowering men and women could help increase insurance demand; but it is worth noting that there is a positive association between the two. Future research could analyze the impacts of men and women empowerment on their demand for insurance in order to analyze the business case for private insurance companies such as ACRE Africa to adopt more gender-transformative approaches.

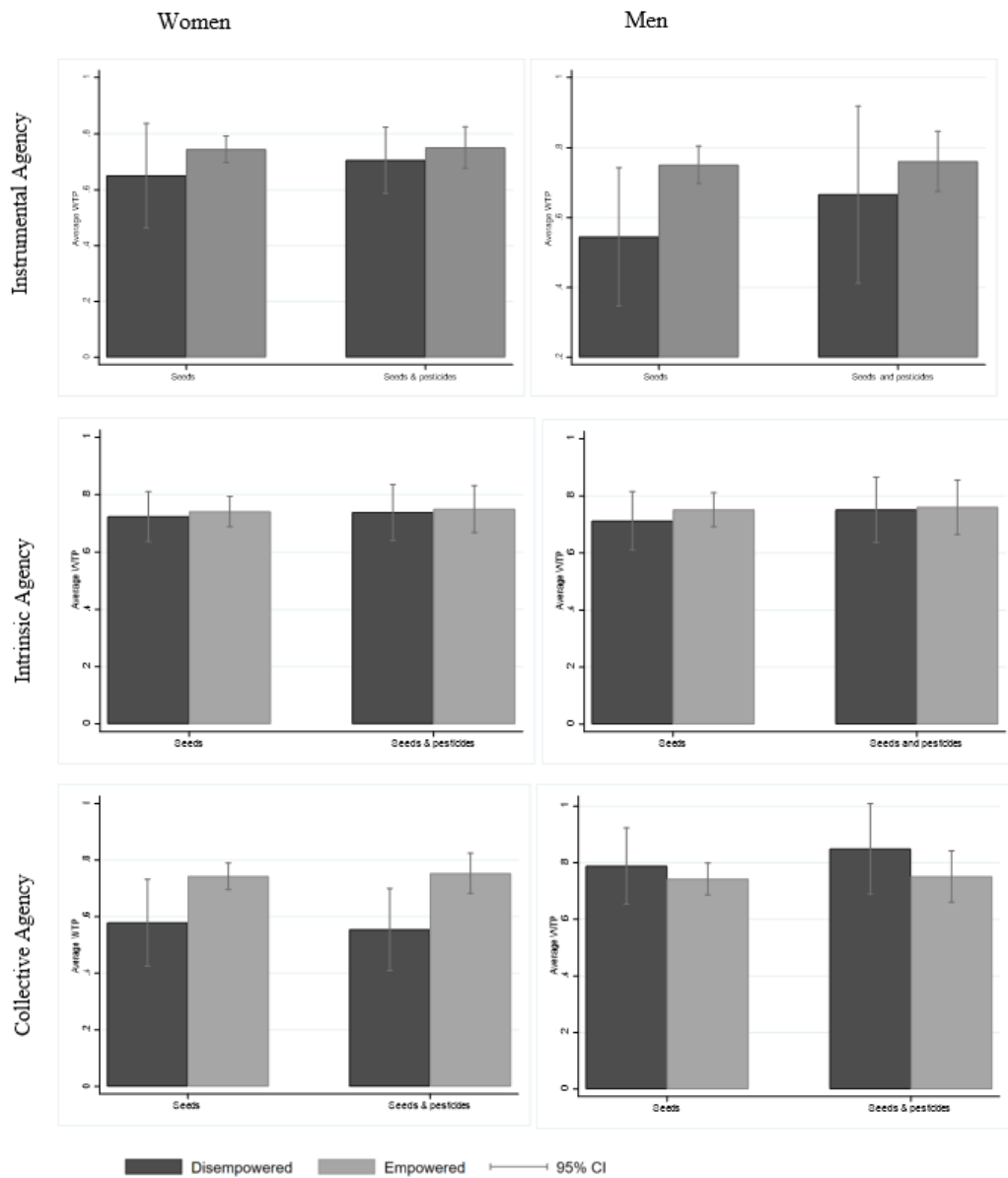


Figure 5; Willingness to pay (as a proportion of the total product cost) by gender and empowerment

Conclusion

Based on literature reviews and case studies, this study provides an overview on how to create gender equity within the context of agricultural insurance schemes. Using a framework developed by Johnson et al. (2018), the paper goes beyond gender inclusivity to evaluate the extent to which insurance can be more gender responsive

and gender transformative, ensuring not only gender equality in reach, but also equity in the benefits created by insurance and the impacts of insurance on empowerment.

We find a decent amount of literature that evaluates the gender-based disparities in access and usage of agricultural insurance. The studies find low willingness to pay (WTP) and reduced effective demand among women and female-headed households. The low uptake among women is attributed to both demand-side (such as low liquidity, low financial literacy, risk aversion, low trust, and cultural barriers), and supply-side (such as high costs of premiums, narrow risk coverage, and non-inclusive extension approaches) constraints. Regarding gender equity in distribution of insurance costs and benefits, we find that insurance has the potential to improve welfare for both men and women. However, only a handful of studies explicitly evaluate the gendered distribution of insurance benefits. In addition, existing impact evaluations of agricultural insurance have focused primarily on changes reported by household heads and compare impacts by gender of the household head, but do not shed light on the distribution of welfare impacts within households. Given that most women actually live in male-headed household, between-household comparisons are likely misrepresenting insurance impacts on women. The studies also fail to go beyond the traditional household welfare indicators to evaluate broader gendered impacts of insurance in terms of environmental externalities, price and market distortions, change in labor demand, or the destabilization of informal social structures.

The paper also recognizes that changes in household welfare including increased agricultural productivity and incomes might not benefit women much if they do not have the capacity to control the income use, make decisions or possess the productive resources to expand their production. Employing a framework that informed the design of the project-level Women's Empowerment in Agriculture Index (pro-WEIA), we show how agricultural insurance can potentially contribute to the

reduction of inequities in gender empowerment (gender transformation). We show that through increased productivity, incomes and payouts, insurance can directly increase women's bargaining power hence decision-making capacity. Insurance can also promote women's instrumental agency via increased integration into the formal financial markets, increased mobility and visibility, adoption of time-saving technologies, and exposure to new market opportunities. This can in turn lead result to an enhanced sense of wellbeing and self-efficacy, and a change in women's perception towards domestic violence. Finally, by stabilizing local group welfare and promoting group membership, insurance can help enhance collective agency for both men and women.

A case study based on a crop insurance program in Kenya shows how to apply the reach-benefit-empower framework to design gender-inclusive, -responsive and -transformative insurance programs. In the case study, we provide evidence on how engaging with women champion farmers, partnering with local service providers, and using women-friendly platforms such as mobile phones to market and distribute insurance products can boost insurance reach, access, and uptake among women. We also show that bundling insurance products with other risk management strategies could be a gender-responsive approach to increase benefits perceived by women, as evidenced by an increase in willingness to pay. Finally, we find that relatively more empowered men and women are willing to pay more for insurance. Although these findings are not causal, it could suggest that it is in private companies' own interest to empower men and women alike through gender transformative approaches, as it could increase demand for their services.

To conclude, our study shows that it is possible to tailor insurance programs to support gender equity in reach, benefits and empowerment. First, insurance programs can promote equity in gender reach by addressing the demand- and supply-side constraints to

insurance uptake. These can be achieved through the provision of standard products that are attractive to both men and women, use of gender-inclusive literacy materials, distribution channels and extension mechanisms. Second, we show that the provision of quality products through bundling complementary risk management strategies can improve insurance benefits to both men and women. Programs can also promote equity in gender-benefits by collecting sex-disaggregated data and monitoring long-term impacts at individual levels. Finally, we show evidence that insurance can support women empowerment in a variety of ways, for instance, by ensuring that contracts purchased by women are registered under their names and payouts are subsequently paid to their accounts, bundling insurance with behavioral change tools to empower both men and women to take control of their finances, and offering formal insurance through existing informal risk sharing mechanisms to preserve and promote local group activities and membership.

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