

A Service of



Leibniz-Informationszentrum Wirtschaft Leibniz Information Centre

Ambler, Kate; Jones, Kelly M.; O'Sullivan, Michael

Working Paper

Increasing Women's Empowerment: Implications for Family Welfare

IZA Discussion Papers, No. 14861

Provided in Cooperation with:

IZA - Institute of Labor Economics

Suggested Citation: Ambler, Kate; Jones, Kelly M.; O'Sullivan, Michael (2021): Increasing Women's Empowerment: Implications for Family Welfare, IZA Discussion Papers, No. 14861, Institute of Labor Economics (IZA), Bonn

This Version is available at: https://hdl.handle.net/10419/250522

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.





DISCUSSION PAPER SERIES

IZA DP No. 14861

Increasing Women's Empowerment: Implications for Family Welfare

Kate Ambler Kelly Jones Michael O'Sullivan

NOVEMBER 2021



DISCUSSION PAPER SERIES

IZA DP No. 14861

Increasing Women's Empowerment: Implications for Family Welfare

Kate Ambler

IFPRI

Kelly M. Jones

American University and IZA

Michael O'Sullivan

World Bank

NOVEMBER 2021

Any opinions expressed in this paper are those of the author(s) and not those of IZA. Research published in this series may include views on policy, but IZA takes no institutional policy positions. The IZA research network is committed to the IZA Guiding Principles of Research Integrity.

The IZA Institute of Labor Economics is an independent economic research institute that conducts research in labor economics and offers evidence-based policy advice on labor market issues. Supported by the Deutsche Post Foundation, IZA runs the world's largest network of economists, whose research aims to provide answers to the global labor market challenges of our time. Our key objective is to build bridges between academic research, policymakers and society.

IZA Discussion Papers often represent preliminary work and are circulated to encourage discussion. Citation of such a paper should account for its provisional character. A revised version may be available directly from the author.

IZA DP No. 14861 NOVEMBER 2021

ABSTRACT

Increasing Women's Empowerment: Implications for Family Welfare*

Increasing women's empowerment is a key objective of many development programs, both as a principal goal and as a path to economic development. We propose and test a novel economic intervention that relies on intra-household transfers of productive assets to increase women's empowerment among sugar farmers in Uganda. We document that this intervention increases women's access to resources and agency by a substantial amount. In contrast, a behavior change intervention (training) increases empowerment through agency and achievements, with no impact on access to resources. We use these interventions to test the widely held (but weakly supported) assumption that empowering women generates improvements in child welfare. We find that, contrary to studies examining extrahousehold transfers, these interventions do not shift food security, health, or educational outcomes. They do, however, improve life satisfaction both for women and their husbands.

JEL Classification: D13, J16, J12, O12

Keywords: empowerment, intra-household allocation, family welfare,

Uganda, Africa

Corresponding author:

Kelly M. Jones American University 440 Massachusetts Ave NW Washingtion, DC 20016 USA

E-mail: kmjones@american.edu

^{*} We thank Patrick Lubega, Anusuya Sivaram, Jaqueline Rojas, Alev Gurbuz Cuneo, Tigist Ketema, and Ludovica Cherchi for excellent research assistance and project management, and all members of our data collection and implementation field staff. We are grateful to our partners: Oxfam Novib Uganda, Kakira Sugar Limited, Tropical Bank, Ignosi Research, EDI Global, and Utility Strategies, without whom this work would not have been possible. This work was funded by the World Bank Umbrella Facility for Gender Equality, the Africa Gender Innovation Lab, the CGIAR Program on Policies, Institutions, and Markets, and the IFPRI Strategic Innovation Fund. This experiment was approved by institutional review boards at IFPRI and International Health Sciences University in Uganda, was approved by the Uganda National Council for Science and Technology, and is included in the AEA RCT registry as AEARCTR-0001647.

1 Introduction

The advancement of gender equality and women's empowerment has become a major component of social programs in the developing world and is increasingly recognized both as important in its own right, and key for economic growth and development. Evidence suggests that increased women's empowerment can drive investment in public goods and private investment in land quality, improve household efficiency, and reduce unwanted fertility (Duflo, 2012). Empowering women is also widely thought to improve the welfare of their families, especially their children.¹ For this reason, many large-scale government safety net programs target cash transfers to women rather than men.² However, while more empowered women are strongly correlated with higher levels of family welfare, only limited evidence exists to support that this relationship is causal. In this study, we test a novel intervention for empowering women and provide new evidence on the causal impact on family welfare.

A range of programs has been implemented to influence women's empowerment or components thereof. Many are economic interventions, which typically aim to improve access to resources. These include financial inclusion efforts such as offering women savings accounts or credit, social protection programs that direct income or in-kind transfers to women, skills training and/or employment support, and programs that secure women's land rights. Another common approach to empowering women attempts to address cultural barriers, gender norms, and household behaviors directly through behavior change interventions. Workshops, trainings, or information campaigns may aim to shift norms and beliefs about gender equality, improve women's life skills or other "soft skills," or reduce intimate partner violence.

In this study, we test the impact of a novel economic intervention for increasing women's empowerment in the context of sugarcane contract farming households in Uganda. Households were randomly assigned to be encouraged to transfer to the wife one or more sugarcane contracts among those held by the husband or to register a previously uncontracted sugarcane block to the wife. While extra-household transfers (e.g., cash transfers from the government) are commonly documented to improve women's empowerment, we test whether an intra-household transfer of a productive asset might improve empowerment at a lower public cost.

In addition, we compare the impact of this novel economic intervention to the impacts of a behavior change intervention set in the same context. Households were cross-randomized

¹For example, a brief from a large development bank states (without citation), "Evaluations of many development initiatives have shown that women who handle cash directly are more likely to invest in critical household expenses, such as more nutritious food, better education, and improved health care for their children" (ADB, 2011).

²For example, Mexico's Progresa/Opportunidades, Brazil's Bolsa Familia, Philippine's Pantawid Pamilyang Pilipino Program, Peru's Juntos, and Indonesia's Program Keluarga Harapan, among others.

to be invited to a couple's workshop designed to increase gender awareness and household cooperation. Workshops of this nature are often used to improve women's empowerment in low-income country contexts, yet little evidence exists on their effectiveness. We modeled our workshop intervention on the catalyst workshop of the Gender Action Learning System (GALS), which was developed in Uganda and has been implemented in other contexts in sub-Saharan Africa and Southeast Asia. While the workshop did not specifically target sugarcane production activities, we hypothesized that the focus on gender balance and access to resources might increase take-up of the economic intervention and may have overlapping impacts on outcomes of interest. We test the impacts on women's empowerment of each intervention individually, compare them to each other, and test for complementarities.

Following seminal work by Kabeer (1999), we define empowerment as the process by which those who have been denied the ability to make strategic life choices acquire such an ability. Kabeer describes empowerment as comprising three key components: access to resources, which provide favorable conditions for empowerment, agency, or the ability to identify goals and act upon them, and achievements, or the realization of goals (for example, nutrition, education, mental health, or happiness). We find that the economic intervention (EI) increases access to resources by a large amount, greater than the size of the difference associated with women's literacy (a proxy for empowerment). The behavior change intervention (BCI) has no significant impact on this domain of empowerment. Both interventions improve agency, with magnitudes nearly identical to the literacy difference, but through different sub-domains: the EI increased decision-making power while the BCI increased selfconfidence. Achievements such as self-esteem and life satisfaction were improved by the BCI, by an amount nearly identical to the difference associated with literacy. Impacts of the EI on achievements are smaller, less robust, and significant only at the 10% level. We also find that combining the interventions did not yield larger impacts beyond those of each intervention in isolation.

Given that random assignment to either intervention represents an exogenous increase in a woman's empowerment, we further test the impact of these interventions on family welfare. In contrast to existing evidence, we find that these interventions, which exogenously induced large changes in women's empowerment, did not improve child welfare, as measured by health status or education, nor did they improve household food security. However, we do find improvements in the the life satisfaction of husbands. We propose that this divergence from existing evidence that women's empowerment positively affects children may arise from the difference in impact between intra- versus extra-household transfers, as well as the limited nature of the existing body of evidence.

This study contributes to a growing body of evidence about what works for improving

empowerment. Many studies have tested the causal impact on women's empowerment of a variety of economic and behavior change interventions. These are comprehensively reviewed by Chang, Diaz-Martin, Gopalan, Guarnieri, Jayachandran, and Walsh (2020). Based on 160 experimental and quasi-experimental papers, the authors conclude that most economic interventions, though they may increase access to resources, do not improve agency or achievements on their own and are more effective when combined with behavior change interventions. One exception to this is cash or in-kind transfers, which are effective independently.³ However, we note that nearly all reviewed studies of transfers focus on extra-household transfers.⁴

Chang et al. (2020) also find that agency and achievements are more difficult to change for married women. Our study documents that, among a population of married women, an intra-household transfer on its own can improve not only access to resources but also agency.

Regarding behavior change interventions, Chang et al. (2020) conclude that more evidence is needed on programs designed to change gender norms. While they find that trainings specifically targeting reductions in gender-based violence are generally effective, the evidence on trainings for gender awareness, life skills and/or soft skills is more mixed. They find that these trainings can shift aspirations, autonomy, and freedom of movement, but these are usually effective only when used in combination with other interventions. And, like economic interventions, these are more effective for adolescents and young women than for older, married women. They also note that interventions that engage men can shift household decision-making, but that take-up of these is often low. We document that a couples-based gender awareness training has both sufficient take-up and strong impacts on its own on married women's agency and achievements.

The estimated impacts of our behavior change intervention contribute to a small but growing body of evidence on the causal impacts of training men to increase women's empowerment. Many studies of training men are focused on health outcomes, though some have measured more direct elements of women's empowerment. Training men has resulted in increased joint-decision making in India (Seshan and Yang, 2014), increased women's decision-making, reduced intimate partner violence, and improved care work balance in Rwanda (Doyle et al., 2018), and improved relationship quality (Vaillant, Koussoube, Roth, Pierotti,

³We note that while individual studies of access to private banking accounts have demonstrated impacts on empowerment for specific subgroups (Ashraf, Karlan, and Yin, 2010; Aker et al., 2016; Field et al., 2021), the review does not find the category of interventions as generally effective in the absence of combined behavioral interventions. We also note that these interventions that provide women accounts for private saving and private access to funds are distinct from transfer interventions that provide women with access to additional funds or assets.

⁴Some land titling programs may be considered an intra-household transfer insofar as women gain (joint) legal rights to land that may have previously been considered solely her husband's land. However, these programs also include an extra-household transfer in the form of legal titling. Further, we are not aware of any studies that provide evidence of the impact of giving sole title to women.

Hossain, and Falb, 2020) and improved care work balance (Pierotti, Lake, and Lewis, 2018) in the Democratic Republic of Congo.

Rigorous evaluations of couples-based training are limited and have mixed results. A couples' training in Uganda shifted decision-making, increased women's group participation, improved care work balance, and increased food security and perceived well-being (Lecoutere and Wuyts, 2021). In contrast, in Cote d'Ivoire, a GALS-based couples' training experimentally added onto an agricultural extension intervention increased production but did not improve women's empowerment (Donald, Goldstein, and Rouanet, 2021). In Bangladesh, a couples training that addressed nutrition, agriculture, and gender was found to improve women's empowerment across all treatment arms, whether topics were addressed separately or together (Quisumbing, Ahmed, Hoddinott, Pereira, and Roy, 2020). We document that a GALS-based couples' workshop in Uganda shifts men's and women's perceptions of gender norms, reports of marital quality, and life satisfaction, while also improving women's self-esteem and self-confidence.

Finally, we contribute to the research and policy conversation on empowering women to improve family welfare. Many large, public cash transfer programs around the world specifically target funds to women and not men, under the assumption that increasing women's access to resources will improve family welfare. This assumption is often stated as fact, though the evidence supporting it is limited.⁵

From these programs, studies document that conditional cash transfers (CCTs) to women can increase women's empowerment (Attanasio and Lechene, 2002; Molyneux and Thomson, 2011; Almås et al., 2018; Litwin, Perova, and Reynolds, 2019) while other studies document that CCTs improve child nutrition, child growth, and investments in child health and education (Bourguignon, Ferreira, and Leite, 2003; P. Gertler, 2004; Barber and P. J. Gertler, 2010; Macours, Schady, and Vakis, 2012; Benhassine et al., 2015; Armand et al., 2020). However, such improvements in child welfare may be driven by the conditionalities inherent in CCTs in addition to (or instead of) a shift in women's empowerment.

Studies that estimate the impact of *unconditional* cash transfers to women on family welfare sometimes fail to compare the effects to those of giving transfers to men. So, while these are often found to improve child outcomes, we cannot separate the impact of a woman's

⁵For example, following the statement "Most studies find that children's well-being is strongly correlated with women's income relative to men's, where women consistently devote a higher portion of their income to family needs than do men," S. Anderson and Baland (2002) cite a review by Strauss, Mwabu, and Beegle (2000), which contains primarily observational studies and only two quasi-experimental studies, Lundberg, Pollak, and Wales (1997) & Pitt and Khandker (1998). Following the stronger statement, "A central assumption of our model is that women attach relatively more weight to the welfare of their children than men do… There is a substantial empirical literature supporting this assumption," Doepke and Tertilt (2019) cite four studies, of which only one (Lundberg, Pollak, and Wales, 1997) supports this claim.

increased resource control from a general increase in household resources. For example, unconditional cash transfers to adolescent girls in Malawi were shown to improve the growth of their children, but the study does not address how men would have used the money (Baird, McIntosh, and Özler, 2019).

Fewer studies compare the impact of giving unconditional transfers to women rather than men and have mixed findings on empowerment and family welfare. One study documents that women in the UK have a greater preference for spending windfall income on children than men do by comparing the impact on household budget shares of a government transfer to women versus to men (Lundberg, Pollak, and Wales, 1997). In Bangladesh, women have a greater preference for spending credit on girl's education than men do, as documented by the impacts of credit provision to women versus men (Pitt and Khandker, 1998). In South Africa, a seminal paper showed that government pensions improved early child growth of grandchildren when the pensions were received by women but not when received by men (Duflo, 2003). Later work in this context suggests that grandfathers' preferences were to spend the pension on retirement – an option that was not generally relevant to grandmothers who were typically not in the labor force (Ambler, 2016). It is not clear whether pensions to already retired grandfathers would have been comparably spent on grandchildren or not. Another study in Burkina Faso studies both conditional and unconditional transfers given to mothers or fathers. While they do not show results by gender for unconditional transfers only, they do show that across both (randomized) transfer types, there is no evidence that money given to mothers is better for children's outcomes than money given to fathers. There is instead some evidence that money given to fathers has positive impacts on the outcomes measured (Akresh, de Walque, and Kazianga, 2013).⁶ More recently, large cash transfers to women in Kenya increased women's empowerment but did not significantly shift budget shares relative to transfers to men (Haushofer and Shapiro, 2016).

In sum, only a small literature compares the effect on family welfare of unconditional transfers to women rather than men.⁷ These studies offer the ability to disentangle the impact of empowering women from the impact of increasing total household resources, but only if those effects are additively separable. We study an intra-household transfer of resources that significantly increases women's empowerment without increasing total household resources, and do not find significant impacts on our measures of child welfare, but do doc-

⁶Ambler (2016)demonstrates that pensions to men in that context typically resulted in men's retirement, effectively holding household resources constant, while women pensioners were much less likely to be working prior to pension receipt, so their pensions increased household resources.

⁷Other studies that test the impact of empowering women on child welfare find that increasing women's education improves birth outcomes, but not more than increasing men's education does (Breierova and Duflo, 2004; Chou et al., 2010).

ument improved reports of marriage quality and life satisfaction by both women *and* men. Our results suggest that empowering women can have important effects on the household environment but does not necessarily positively impact children.

The remainder of the paper is organized as follows. Section 2 describes the study design, sample, and interventions. Section 3 presents a framework for thinking about empowerment and how the interventions might impact it. Section 4 provides details on the data, construction of the outcomes, and the empirical strategy. Section 5 discusses the estimated impacts of the interventions on women's empowerment and the resulting impacts on family welfare, and Section 6 concludes.

2 Study design

2.1 Context

Our study takes place in the Jinja region of eastern Uganda, where our partner Kakira Sugar Limited (KSL) is located. Sugarcane is a major crop in Uganda, which produced 154,501 tons of raw sugar in the first half of 2016 (Biryabarema, 2016). KSL is the largest sugarcane processing company in Uganda. While KSL directly produces some of its own sugarcane, the majority of cane processed by the company is produced by outgrowers. KSL generally works with farmers who live within a 25 km radius from the company's processing plant and plantation in Jinja district.

Contracts with KSL are typical of the industry: farmers promise to sell their cane to the company and in return receive advances against their final sales in the form of inputs, land preparation services, and cash. Though women often contribute to sugarcane-related labor, the vast majority of KSL contracts are with men. At baseline we find that 75% of outgrowers' wives report working on sugarcane in the last growing season, but fewer than 1% hold a registration for a cane block (Ambler, Jones, O'Sullivan, and Sivaram, 2016). Women's involvement in cane is primarily during land preparation, planting, and weeding, whereas men are much more likely than women to be involved in registration (41% vs. 1%) and harvesting (56% vs. 15%). Women tend to know with which company the cane is registered (71%) and the year of the last harvest (63%), but are unlikely to know the quantity harvested (5%) or the price per ton (6%). 98% of both men and women report that the husband has the final say on how sugarcane income is used (*ibid*).

2.2 Sample and experimental design

Project participants were recruited from a roster of 4,540 active male sugarcane farmers registered with KSL, beginning in August 2016. We were able to locate 3,204 households, who were screened for eligibility on the following criteria: he currently farms sugarcane, has at least one wife, has at least one block of sugarcane unregistered or registered to KSL, and has no outstanding loans against sugarcane blocks. A total of 2,463 eligible households were then invited to complete the baseline survey. The final sample contains 2,370 households who were eligible for the study, interested in participating, and who completed the baseline survey.

In polygamous households we identify a wife (the "designated wife" or DW) to be the focus of our data collection and interventions. The designated wife is the wife indicated by the husband as the one most involved in sugarcane production, or, if none is involved, the one he would most want to be involved.

Within this sample, we assigned treatment at the household level. 25 percent of households were assigned to the control group, 25 percent received the EI only, 25 percent received the BCI only, and 25 percent received the BCI followed by the EI ("combined intervention"). Treatment assignment was stratified by the following factors: whether a household was polygamous (35%), whether the household cultivated more than the median number of sugarcane blocks, whether the tenure of marriage with the designated wife was greater than the median of 20 years, whether the designated wife could read and write (65%), and measures of cooperation and preference alignment measured through a baseline survey module of incentivized decision-making. These experimental incentivized decision measures are highly correlated with survey-based measures of empowerment at baseline (Ambler, K. M. Jones, and Recalde, 2021).

Table i presents the sample summary statistics, and also analyzes baseline balance among treatment groups. Husbands are approximately 46 years old on average and wives are 38. About 85 percent of men and 63 percent of women can read and write. Average household size is 9, with 5 children. Households cultivate an average of four sugarcane blocks. At baseline, essentially all husbands are involved in sugarcane in some way, compared to 80 percent of wives. Column 5 presents the p-value for the test that the means for each treatment group are jointly equal (estimated using our main regression specification). In general, there are few significant differences, and even in the cases where the p-values are below 0.10, the magnitude of the differences in the means is not large.

2.3 Economic intervention

The goal of the economic intervention was to facilitate the transfer or registration of a sugarcane block to the wife. A total of 1,187 households were randomly assigned to receive the EI. Half of these had previously been invited to the BCI, which had already concluded.

Household visits were made by specially-trained staff to inform each farmer that he was allowed to transfer one or more of his contracts into the name of his wife and/or register in the wife's name any unregistered blocks. This would entitle the wife to inputs, cash advances, and the final payment. The project facilitated the paperwork to make these transfers easy and paid the small costs associated with these transfers. The project additionally offered a small, in-kind "household gift" incentive (a solar lamp worth approximately \$30). The intervention involved up to three visits to the household. These visits were completed between February and May 2017. A timeline of the study is provided in Figure i. The script for the intervention is provided in Appendix E.1.

For all couples that agreed, project staff managed the ensuing process, ensuring that women did not have to make a trip to the KSL offices. This included verification by KSL field staff, approval by local authorities, and processing in the KSL offices. Because cane payments are made into bank accounts, it was also necessary to open accounts for all women who did not have them, and the project facilitated this and paid the small associated fees. Finally, a return visit was made to the household to deliver the paperwork, farmer ID cards, and thank you gift. Processing of paperwork and final visits were completed by mid-September 2017.

Take-up of the EI is summarized in Table ii (Panel B), separately by BCI and overall. Offer acceptance was high, with 78 percent of households agreeing at the initial visit. This results in an average of approximately 0.97 blocks registered or transferred per invited household, mostly, but not exclusively, to the designated wife. There was some drop-off in take-up over the course of the intervention; 71 percent of households completed a registration or transfer. The large majority of transactions were new registrations (58.9 percent of households, compared to 12.6 percent of households transferring a block). Take-up among those assigned to receive the BCI was higher (74 percent), but take-up rates were still substantial even among those who were not in the BCI group (68 percent). Take-up of the EI and its relationship to the BCI is analyzed in Ambler, K. Jones, and O'Sullivan (2021).

2.4 Behavior change intervention

The behavior change intervention, called the Family Vision Workshop, included a couplesbased participatory training that focused on recognizing contributions of each member and arriving at a balanced approach to household (or farm) management and access to resources. The workshop is adapted from the "change catalyst workshop" of the Gender Action Learning System (GALS), an empowerment methodology developed by Oxfam Novib and Linda Mayoux in Uganda, Sudan, Peru, and India (Mayoux, 2012).

These workshops included several participatory activities for couples over the course of a three-day training. All the activities make use of descriptive drawings and do not rely on literacy. The first activity includes drawing out one's vision for a happy future, discussing visions with others, and forming groups with aligned visions. The second activity is drawing the vision journey: the status of key aspects of one's vision in the present and various stages of the future to map out concrete steps for achieving it. The third activity is the gender balance tree, which depicts household members, who contributes what work, who gets what fruits from the labors, who makes which decisions, and which aspects one would like to change. The fourth activity is the empowerment leadership map, which depicts oneself in relation to other actors in one's life, the nature of each relationship, and what one would want to change and how s/he can change it. The final activity, the multi-lane highway, integrates the other activities by creating a joint action plan for a new future that includes the vision journey, changes in gender relations, and changes in the family and community. Detailed descriptions of each of these activities and a description of how GALS was adapted to be the Family Vision Workshop are included in Appendix E.2.

1,191 households were randomly assigned to receive the BCI. Assignment was at the household level and was not clustered by village or group. Selected households were invited in person by a mobilization team that made up to three visits. Workshops were organized in local schoolrooms and churches in order to make the location as close to households as possible. Participants were provided with transport allowances and lunch was served. In total, 54 workshops were held in November and December 2016. Most workshops included between 15 and 25 couples in attendance. Each workshop was led by a team of two experienced and trained GALS facilitators. Eight facilitators were organized into four teams, with a lead facilitator rotating to provide quality assurance. All of the facilitators had extensive GALS experience from previous implementations in Western Uganda. Though the facilitators were Ugandan, simultaneous translation was provided as they did not speak the local Lusoga language.

Workshop attendance is summarized in Table ii (Panel A). Column 1 shows the husband's attendance, column 2 the wife's attendance, and column 3 is a summary of joint attendance. Despite the time commitment involved, attendance was high. 79 percent of husbands, 79 percent of wives, and 75 percent of couples attended at least two days of the workshop. Those same figures are 70 percent, 71 percent, and 66 percent for full attendance across all three days.

Facilitators' reports indicate that participants were very responsive to the ideas presented and that nearly everyone was positive about their experience in the workshop. Anecdotal stories of individual participants' experiences are provided in Appendix E.2.

3 Conceptual framework

Following Kabeer (1999), we define empowerment, P, as a function of access to resources, R, agency, G, and achievements, A.

$$P = p(R, G, A)$$

An individual's access to resources, R, is a function of total household resources, h, share of control over household resources, c, and financial inclusion, f.

$$R = r(h, c, f)$$

We include f in $r(\cdot)$ because inclusion in the financial system potentially unlocks access to earned interest and credit.

Agency, G, is the ability to identify goals and act upon them. Standard household bargaining theory suggests that, within a household, individual agency is a function of one's outside options, which are in turn a function of access to resources, R, and assets, s. Both within and outside the household, agency may also be impacted by gender norms, n. Gender norms are conceptualized here as the extent to which individuals believe in gender equality and the extent to which such beliefs are reflected in marital quality and communication.

$$G = g(R, s, n)$$

Achievements, or the realization of one's goals, are a function of access to resources and agency. However, the impacts of R and G on A are moderated by the environment of gender norms, n.

$$A = a(R, G, n)$$

Defined this way, all partial derivatives in this system are positive.

Hypothesized impacts of interventions

We first note that, given the lack of external transfer and the short time horizon over which women might develop new income generating activities, we do not expect the interventions to impact total household resources, that is, $\frac{\partial h}{\partial EI} = \frac{\partial h}{\partial BCI} = 0$. We confirm this assumption in our analyses.

Impact of the EI Given that cane assets are transferred to the woman, we expect this will increase women's share of control over household resources, that is, $\frac{\partial c}{\partial EI} > 0$. While this is a logical prediction, it nonetheless remains a theory in need of evidence. It may be the case that control over cane assets are transferred to women $de\ jure$ but not $de\ facto$. If transfers are "in name only," the husband may continue to control the asset and the income from it, leaving c unchanged.

Given that the EI also opens a bank account for most women, we expect this will increase their financial inclusion, that is, $\frac{\partial f}{\partial EI} > 0$.

Given the expected impacts of the EI on h, c, and f, we expect it will unambiguously increase women's access to resources, that is,

$$\frac{\partial R}{\partial EI} > 0.$$

Depending on the magnitude of the increase in a woman's income, she may accrue additional assets. However, as accrual takes time, this may not appear within the observation period of our study, thus we do not expect to observe an impact of assets, that is, $\frac{\partial s}{\partial EI} \geq 0$.

While the EI does not directly target gender norms and marital communication, the inclusion of the woman in a traditionally male domain and the potential for increased spousal collaboration may have indirect impacts on gender norms. We expect that the EI may increase the extent to which individuals believe in gender equality and the extent to which such beliefs are reflected in marital quality and communication, that is, $\frac{\partial n}{\partial EI} \geq 0$.

However, even if $\frac{\partial s}{\partial EI} = \frac{\partial n}{\partial EI} = 0$, given the impact of EI on R, we would still expect the EI to increase agency, that is,

$$\frac{\partial G}{\partial EI} > 0.$$

Given the expected impacts of EI on R and G, even if $\frac{\partial n}{\partial EI} = 0$, we would still expect a positive impact on achievements, that is,

$$\frac{\partial A}{\partial EI} > 0.$$

Impacts of the BCI We have no reason to expect the BCI will impact financial inclusion or assets, that is, $\frac{\partial f}{\partial BCI} = \frac{\partial s}{\partial BCI} = 0$.

Given the workshop's module on individuals' within-household responsibilities and access to resources, it may impact share of control over resources. Thus, we expect $\frac{\partial c}{\partial BCI} \geq 0$.

Given that we do not expect impacts of the BCI on h or f, we expect the impact of the BCI on R to depend on the impact of BCI on access to resources, c. That is,

$$\frac{\partial R}{\partial BCI} = \begin{cases} > 0 & \text{if } \frac{\partial c}{\partial BCI} > 0\\ 0 & \text{if } \frac{\partial c}{\partial BCI} = 0 \end{cases}$$

Given that gender equity norms and marital cooperation are the key targets of the workshop, we expect BCI to increase the extent to which individuals believe in gender equality and the extent to which such beliefs are reflected in marital quality and communication, that is, $\frac{\partial n}{\partial BCI} > 0$.

Given the expectation that BCI will strictly increase n, weakly increase R, and have no impact on s, we expect the BCI will strictly increase agency, that is,

$$\frac{\partial G}{\partial BCI} > 0.$$

Given the strictly positive impacts of BCI on n and G, and the weakly positive impact on R,, we expect the BCI will increase achievements, that is,

$$\frac{\partial A}{\partial BCI} > 0$$

In sum, we expect each intervention to individually have a positive impact on P. However, we expect mechanisms and impacts on sub-domains to vary somewhat. For example, if $\frac{\partial c}{\partial BCI} = 0$, the interventions will have a differential impact on the access to resources domain of empowerment,

$$\frac{\partial c}{\partial BCI} = 0 \implies \frac{\partial R}{\partial BCI} < \frac{\partial R}{\partial EI}.$$

Also,

$$\frac{\partial c}{\partial BCI} = 0 \implies \frac{\partial G}{\partial BCI} = \frac{\partial^2 G}{\partial BCI \partial n}$$

whereas

$$\frac{\partial G}{\partial EI} = \frac{\partial^2 G}{\partial EI\partial R} \cdot \left(\frac{\partial^2 G}{\partial EI\partial s} \cdot \frac{\partial^2 G}{\partial EI\partial n} \right).$$

In other words, though we predict positive impacts of both interventions on agency, the

impacts of the BCI on agency may operate only through changes in norms, whereas the impacts of the EI on agency will operate through resources and potentially also through assets and norms.

The theorized impacts of the interventions are summarized in Table iii.

Combining interventions

Existing evidence predicts that the impacts of the combined intervention (CI) will be greater than the impact of either intervention individually. That is,

$$\frac{\partial P}{\partial CI} > \frac{\partial P}{\partial EI}, \frac{\partial P}{\partial BCI} \tag{1}$$

We note that this prediction is consistent with classification of the interventions as either substitutes, complements, or neither.

$$\frac{\partial P}{\partial CI} = \begin{cases}
< \frac{\partial P}{\partial EI} + \frac{\partial P}{\partial BCI} & \text{if substitutes} \\
> \frac{\partial P}{\partial EI} + \frac{\partial P}{\partial BCI} & \text{if complements} \\
\approx \frac{\partial P}{\partial EI} + \frac{\partial P}{\partial BCI} & \text{if neither}
\end{cases} \tag{2}$$

Note that (1) sheds no light on which is the correct case in (2) because

$$\frac{\partial P}{\partial EI}, \frac{\partial P}{\partial BCI} < \frac{\partial P}{\partial CI} \stackrel{\geq}{\geq} \frac{\partial P}{\partial EI} + \frac{\partial P}{\partial BCI}$$

A comparison of estimated coefficients will determine which case in (2) applies.

4 Analysis

4.1 Data

The baseline survey was conducted in August and September 2016. Some modules were conducted jointly, with the husband and wife together, such as the household roster and household expenditures. According to best practice, we collected individual-level information from each individual privately to avoid biases that arise from misinformation and lack of privacy (Doss, Kieran, and Kilic, 2020; Kilic et al., 2020). These modules included time use, personal expenditures and savings, decision-making, marital quality, and intimate partner violence. Some modules were administered only to one individual, such as cane block details (to the husband) and food security (to the wife).

The endline survey was conducted from late July 2018 to late October 2018. Some elements of the baseline were repeated, and modules were added to measure access to resources (woman's cane block details), agency (group membership and self-confidence) and achievements (self-esteem and life satisfaction).

Household level attrition from the baseline to endline sample was low: 2,301 endline surveys were completed with the designated wife, implying an attrition rate of 2.9 percent. In some cases we were able to interview only the wife but not the husband. Reasons included death, divorce, and refusal; we have responses to husband-only questions for 2,172 households. The last two rows of Table i report the attrition rates by treatment group and the test for differential attrition by treatment. As expected, given low attrition, there is no evidence of differential attrition rates by treatment status.

4.2 Outcomes

We test impacts on each of the three dimensions of empowerment. Though each dimension can be measured by a wide range of indicators, we examine a sub-set of indicators for which we can reasonably expect an impact of these interventions.

We measure access to resources as direct and indirect receipt of cane income and ability to spend on personal items. We measure agency with standard survey modules on decision-making regarding household, financial, and agricultural decisions, as well as group membership and standard survey measures of self-confidence. We measure achievements with standard survey measures of self-esteem and life satisfaction, as well as freedom from intimate partner violence. The outcomes of interest in our analysis were pre-specified in a pre-analysis plan posted on the AEA RCT registry (AEARCTR-0001647), as detailed in Appendix A.

Each domain is represented by an index containing a number of different survey responses. The use of indices allows for an understanding of the overall effect of the intervention on these outcomes and reduces the number of hypotheses to be tested. Indices are constructed following the procedure described in M. L. Anderson (2008) using Stata code published by Schwab et al. (2020). By construction, each index has a mean of zero and a standard deviation of one and is denominated in standard deviation units. A listing of components for each primary outcome index and sub-index, as well as summary statistics for each, are presented in Table iv.

A number of survey questions have answer schemes that are categorical. For example, some questions ask respondents to indicate their agreement on a 4-unit scale, or choose one of 5 options about how certain decisions are made. To preserve the full information provided

by each variable, while avoiding treating them as continuous, we create binary indicators for each category option and then create an index from the binary indicators for each question following the method introduced in Heath, Hidrobo, and Roy (2020) (henceforth, HHR). This question-level index is a continuous measure of answers for categorical questions. After creating question-level HHR indices, we then create module-level Anderson indices. Appendix B provides more information on how we measure decision-making and creating HHR indices for categorical variables.

The density of the index for each domain of empowerment is shown in Figure ii. For each, the majority of observations are in the -2 to +2 SD range. The access to resources index has an extremely long positive tail, suggesting that a small group of women have very high resource access. The agency index has a slightly flattened distribution with significant positive truncation, suggesting that no one is significantly above the mean. And the achievements index has a taller distribution with both positive and negative outliers. Figure ii also provides the pairwise correlations for each index, each of which is positive. Achievements are highly correlated with agency (0.54) and only weakly correlated with access to resources (0.07). Access to resources has a correlation with agency of 0.19.

Many of the estimated impacts reported in Section 5 have magnitudes of 0.10 to 0.20 SD. To give a sense of whether these impacts are economically meaningful, we offer a benchmark. Focusing on the control group, for each index, we report the difference in means between women who can and cannot read. We selected this metric because achieving literacy represents a large gain in empowerment but it is not included in any of our indices as there was no expectation of either intervention impacting it. Literate women have a mean access to resources that is 0.15 SD higher than illiterate women. For agency, the difference is 0.17 SD, and for achievements, 0.24 SD. We also test control-group differences in means between women who are more than 20 years younger than their husband and other women. Spousal age gap is traditionally viewed as a proxy for a woman's empowerment within her marriage; an age gap of more than 20 years represents the 95th percentile of our sample. Within the control group, women more than 20 years younger than their husband have access to resources that is lower by 0.34 SD, agency that is lower by 0.20 SD, and achievements that are lower by 0.09 SD. These figures are provided to help the reader benchmark the magnitude of the estimated impacts of the interventions.

In addition to our primary outcomes of interest, we additionally present impacts on ancillary outcomes that may shed light on the mechanisms through which the interventions affect empowerment. These include measures of elements from the conceptual framework: h (sugar production), c (individual cane ownership and cane management), f (financial inclusion), s (asset ownership), and n (gender norms and marital quality). As before, each

outcome is represented by an Anderson index. Other Anderson indices are also employed to test for unintended consequences of the intervention, such as reductions in other agricultural production or time spent on other activities.

To examine impacts of these empowerment-increasing interventions on family welfare, we test impacts on family food security, children's health, children's school enrollment and attendance, and adult life satisfaction.

4.3 Empirical strategy

Our estimation strategy closely follows the pre-analysis plan. Any deviations from the pre-analysis plan, the reasoning for them, and alternate results according to the plan are presented in Appendix A.

In order to study the impact of the interventions separately and together, we estimate the following specification:

$$Y_i = \alpha + \beta_1 E I_i + \beta_2 B C I_i + \beta_3 B oth_i + \theta_S C + \varepsilon_i \tag{3}$$

 Y_i is the outcome for individual i. EI_i and BCI_i are indicators for being assigned to only the EI or BCI respectively, and $Both_i$ is an indicator for receiving both interventions. θ_SC are stratification cell fixed effects and ε_i is an error term. Each β coefficient is thus an indicator of the average difference between each treatment group and the control group. We will also test whether the coefficients for the different treatment groups are equal to each other.

Given that both treatments are assigned at the household level, we estimate heteroskedasticity-robust standard errors. In addition to these, we present randomization inference p-values as specified in our pre-analysis plan (Athey and Imbens, 2017; Young, 2019). Also in line with the pre-analysis plan, we additionally calculate sharpened q-values within each family of outcomes to control the False Discovery Rate arising from multiple hypothesis testing (M. L. Anderson, 2008). For our primary outcomes, the three domains of empowerment, we also calculate the more conservative Family Wise Error Rate-corrected p-values (List, Shaikh, and Xu, 2019; Barsbai et al., 2020). These alternative test statistics for each hypothesis test are shown below the robust standard errors in each table of estimated coefficients.

⁸Randomization inference is conducted using *ritest* in Stata with 2,000 replications, and the randomization process exactly replicated (Heß, 2017).

5 Results

5.1 Impacts on women's empowerment

We begin by presenting our main analysis regarding the impact of each intervention on women's empowerment in Figure iii. Estimated β coefficients from equation (3) are presented for each domain of empowerment. Robust standard errors are used to construct the 95% confidence intervals shown. The results are also shown in Table \mathbf{v} , including tests for equality of coefficients and alternative p-values. While our discussion focuses on significance tests using the robust standard errors, our main results are robust to evaluation using the RI or FWER-adjusted p-values.

Access to resources is increased by the economic intervention by 0.22 standard deviations, an effect that is significant at the 1% level. The BCI increases access to resources by 0.05 SD, an effect that we cannot reject is zero. We can reject at the 1% level that these effects are the same.

Agency is increased by the economic intervention by 0.17 SD, significant at the 1% level. The BCI increased agency by a comparable amount, 0.18 SD, also significant at the 1% level. We cannot reject that these effects are the same.

Achievements are increased by the behavior change intervention by 0.23 SD, significant at the 1% level. The impact of the economic intervention on achievements is smaller (0.10 SD) and significant only at the 10% level, and we can reject that the effect of the interventions on achievements is the same.

We do not find significant evidence of multiplier effects when combining the interventions. For each domain, we find that the impact of the combined intervention is not significantly different from the larger of the two individual interventions' impacts, suggesting that the interventions act more as substitutes than complements.

To further explore the source of the estimated impacts on empowerment, we also present results for each of the sub-components of the access to resources index (Figure iv) and for each of the sub-indices included in the agency and achievement indices (Figures v and vi). These results are also presented in Appendix Tables C1 and C2. Impacts of the EI on access to resources are primarily driven by increases in payments received for own cane blocks and increased control over household cane income. We do not observe significant impacts on personal expenditures, either in levels or in ratio to the husband's personal expenditures, or on the need for permission to spend.

While both the EI and the BCI have comparable impacts on the index for agency, these effects are operating through different channels. The EI significantly increases a woman's decision-making power, for financial, agricultural, and household management decisions.

While the BCI increases each of these, only the impact on household management decision-making is significant, and only at the 10% level. For financial and agricultural decision-making, we can reject that the effects of the two interventions are equal.

Impacts of the BCI on agency are instead operating primarily through improvements in women's self-confidence, an effect that is large and significant at the 1% level. As detailed in Table iv, this represents her comfort level with speaking out in public meetings, asserting herself in business relations, and bargaining over resources within her household. The EI also improves self-confidence, but by half as much and this effect is significant only at the 10% level. We can reject at the 5% level that the effects of the two interventions on self-confidence are the same.

The impacts of the BCI on achievements are operating through increases in self-esteem, life satisfaction, and freedom from IPV. Impacts of the EI on these indicators are smaller, and are not independently significantly different from zero.

Mechanisms

In this section we seek to determine how the interventions were able to improve women's empowerment and why the two interventions impact different dimensions of empowerment. Specifically, we estimate impacts on elements included in the conceptual framework, as discussed in Section 3 and shown in Table iii: h, c, f, s, and n. Impacts on these are presented in Figure vii and Appendix Table C3. As before, these factors are constructed indices, the components of which are presented in Table vi.

We document that total household cane production is unchanged by either intervention. This is an important finding that is consistent with our prediction and supports our claim that this intervention represents an intra-household transfer only, without shifting total household resources.

Shifts in the woman's control over household resources are driven by increases in women's cane ownership and management. These are clearly predominant mechanisms of impact for the EI, with extremely large effects on cane ownership (1.3 SD). For the BCI, these are positive and (at least marginally) significant, but are far smaller than the impacts from the EI. We can reject that the impacts of the interventions on these mechanisms are the same at the 1% level. Nonetheless, this rejects the critical condition of $\frac{\partial c}{\partial BCI} = 0$ in the conceptual framework and opens the possibility that $\frac{\partial R}{\partial BCI} > 0$. However, this impact of the BCI on c is not enough to generate a significant impact of the BCI on R.

Consistent with the prediction, we find that financial inclusion is impacted by the EI and not the BCI. The EI did include opening bank accounts for participating women, which increased not only account holding but also loan taking, raising the financial inclusion index

by 0.24 SD. We can reject at the 5% level that the impacts of the interventions on financial inclusion are the same. Neither intervention has a significant impact on women's assets.

Also consistent with the prediction, the impacts of the BCI appear to be operating significantly through improvements in perceptions of gender equality norms and in marriage quality and communication. Interestingly, the EI also shifts gender norms by an amount nearly identical to the BCI's effects of 0.17 SD. While this is not inconsistent with the prediction that $\frac{\partial n}{\partial EI} \geq 0$, it is surprising that the effects of the two interventions on norm perceptions are so similar, given that changing norms was a key target of the BCI and was expected to occur only indirectly as a result of the EI.

Unintended consequences

One possible downside to increasing women's participation in cane management could be that women reduce their time spent on other activities, thereby reducing non-cane agricultural production, enterprise or wage income, or valuable household production. In Figure viii and Appendix Table C4, we document that the EI does increase an index of women's time spent on cane cultivation and management. This is a large effect of 0.3 SD, significant at the 1% level. However, we find no evidence for the concern about how this may affect their time in other activities, which are actually also reported to increase by 0.13 SD. This index comprises women's time reported on all other queried activities (non-cane agriculture, wage work, enterprise work, household chores, fetching water and firewood, leisure) as well as physical labor tasks and management tasks for non-cane agriculture. We also document that neither intervention has a significantly negative impact on non-cane production.

While not shown in Figure viii, we note two other possible unintended consequences. First, some interventions empowering women have been documented to increase intimate partner violence, as shifts in empowerment may disrupt long-standing household norms. As shown in Figure vi, there is no increase in IPV as a result of either of these interventions. Second, the following section documents impacts of the intervention on educational investments in children and suggests that girls' education may be minimally harmed by the combined intervention. To the extent that the EI reduces women's available time for household and care work, it is feasible that some of these tasks may be taken on by older girls in the family. We further explore this possibility in Appendix D and conclude that any impacts of these interventions on girls' education are minimal.

⁹A similar result was found by Bossuroy et al. (2021) in Niger where an combined intervention targeting women's empowerment increased child labor and child chores relative to the comparison group.

5.2 Impacts on family welfare

Limited existing evidence suggests that increasing women's empowerment may have positive welfare effects on their children. This evidence primarily comes from a small number of studies documenting that extra-household transfers shift spending toward (girl) children when given to women instead of men (Lundberg, Pollak, and Wales, 1997; Pitt and Khandker, 1998; Duflo, 2003). This evidence is somewhat countered by a more recent study documenting that large cash transfers to women increase women's empowerment but do not shift household budget shares relative to transfers to men (Haushofer and Shapiro, 2016). We explore whether an increase in women's empowerment that arises from an intra-household transfer has any downstream impacts on child (or husband) welfare.

We first examine impacts on food security. We asked six questions about food security over the past 7 days. We collapse these into a food insecurity score following the World Food Programme method.¹⁰ Based on this score, 63% of households are food insecure at baseline and 39% are severely food insecure. Despite these high levels of food insecurity, we do not find impacts of either intervention on the food insecurity score or on any of these indicators of food insecurity, as shown in Figure ix. We can reject at the 5% level that either intervention decreased the food insecurity score by 0.15 or more for a score with a range of 1 to 4, a mean of 1.8 and a standard deviation of 1.19; that is, we can rule out any effect larger than 0.13 SD.

We examine the impact of the interventions on various measures of child welfare, including investments in health and education. To do this, we estimate equation (3) at the child-level, rather than the household-level, and cluster standard errors by household.

Figure x shows impacts on the probability of receiving a well-child health check in the past year, and the probabilities of having a cough, fever, or diarrhea in the past 2 weeks. These outcomes are measured for children under age 10. We find no significant beneficial impacts of either intervention on any of these outcomes. In fact, we observe a decrease in the probability of a health check for children in households assigned to the BCI. Given that only 16% of children have had a recent health check, the magnitude of the effect (0.046) is large. We do not have a clear hypothesis for why the BCI may have reduced this type of investment in child health. However, we do not see any impacts in terms of child illness

¹⁰The food insecurity score is 1 if in the past seven days, the household reports not worrying about having enough food and reports zero days that they: (a) rely on less preferred and/or less expensive foods, (b) limit portion size at meal-times, (c) reduce the number of meals eaten in a day, (d) restrict consumption by adults so that small children may eat, or (e) borrow food, or rely on help from a friend or relative. The food security score is 2 if the household reports that it worried about having enough food and reports zero days for actions a-e. The food security score is 3 if the household reports that it relied on less preferred and/or less expensive foods and b-e are zero. The food security score is 4 if the household reports any days for b-e.

in the past 2 weeks. We can reject at the 5% level that either intervention increased the probability of a recent health check by at least 3.4 percentage points; we can also reject that either intervention decreased the probability of any child illness by at least 4 percentage points.

We next examine educational investments. These include indicators for whether a child is currently enrolled in school, whether she was enrolled for both of the two preceding school trimesters, the amount spent on her education in the past year, and whether she has missed any school days in the past year due to non-payment of school fees. Results for all children aged 5 to 18 and by child gender are shown in Figure xi. Neither intervention significantly improves any indicator of educational investment. Given the standard errors, we can reject at the 5% level that either intervention increases enrollments by 0.025 percentage points or more. We note that the EI exhibits a significant negative impact on girls' enrollment during the past 2 terms, as discussed in Section 5.1. We also note that reported enrollments in this population are very high at baseline, with roughly 95% of children aged 5 to 18 enrolled. A population with lower baseline educational investments may have greater scope for improvements.

In addition to education and food security, we also consider impacts on life satisfaction. We use a standard module to measure life satisfaction for both the woman and her husband. As reported in Figure vi, the EI and BCI improved life satisfaction for the woman by 0.97 SD and 0.16 SD, respectively. The effect of the EI falls just short of statistical significance and the effect of the BI is significant at the 1% level. As reported in Figure xii, the EI and BCI improved life satisfaction for the husband by 0.16 SD and 0.20 SD, respectively, both significant at the 1% level.

When we examine impacts on individual components of the husband's life satisfaction index, we see that the EI increased all aspects of life satisfaction, but the largest impact is on satisfaction with the distribution of work within the household (0.15 SD, significant at 1%). We speculate that this is arising from his reduced responsibility for household cane. The EI also improves satisfaction with his power to make decisions and with life generally, both by 0.10 SD. The BCI improves all aspects of life satisfaction significantly (at the 5% level or better), but has the largest impact on satisfaction with life generally. Given that each intervention also improved marital quality and communication, these factors may also be contributing to increases in husband's life satisfaction. Combining the interventions reduces the point estimates on these indicators, though we cannot reject that the effects are the same as each intervention individually. Overall, the results from both interventions suggest that empowering women within the household in different ways can improve household dynamics such that both men and women have higher levels of life satisfaction even if other indicators

of well being are unaffected.

6 Discussion

In this study we have proposed and tested a novel economic intervention for improving women's empowerment: intra-household transfers of productive assets to women. Ex-ante it was unknown whether asset transfers would be de facto, thereby increasing women's share of control over household income, or whether such transfers would be simply de jure, leaving existing balances of control intact. We document that the offer of transfers was well accepted by households and that transfers were de facto, increasing women's participation in management of the assets and receipt of payments from their production. In contrast to other economic interventions for empowering women, the intra- rather than extra-household transfers offer the opportunity to increase women's empowerment at a lower public cost.

We find that the economic intervention (EI) has significant impacts on women's access to resources and agency. The magnitudes of these effects are comparable to, or larger than, the difference in empowerment between women who are and who are not literate. We compare these effects to those of a behavior change intervention (BCI): a couples' based workshop on gender equality and cooperation. We find that while the EI impacts access to resources and agency, the BCI increases empowerment through agency and achievements, such as self-esteem and life-satisfaction. Consistent with our priors, the BCI achieves this primarily through shifting gender norms and marital quality. What is surprising is that the EI has comparable impacts on these factors. We speculate that this is operating through new information that both husband and wife receive about her abilities when she begins to manage cane and through positive experiences with shifting gender roles. As such, increasing resource control is not the only mechanism of impact for the EI. That the asset transfer also brought women into the male-dominated space of commercial agriculture and contract farming seems to have contributed to its impacts on empowerment.

While existing evidence suggests that increasing empowerment is more likely when working with young, unmarried women and when combining intervention types, we find that each intervention is able to increase the empowerment of married women on its own. In fact, we find that, for any given dimension, combining the interventions offers no benefit above the more effective intervention on its own. This suggests that EIs and BCIs may act more as substitutes than complements. However, given that their impact occurs through different channels, the ultimate goal of any given intervention should be considered when designing programming aimed at increasing women's empowerment.

Having established the effectiveness of each intervention for increasing empowerment, we

also test the downstream impacts of these interventions on family welfare outcomes. We find no evidence for increased investment in children's health or education, though we note that reported investments in education at baseline leave little room for improvement. In contrast, food security at baseline offers much room for improvement. Nonetheless, we also find no impacts on any indicator of food security.

Given the prior evidence that increased female bargaining power (a component of empowerment) shifts spending toward investment in children, what might explain the null effects on child health, education, and food security? One possibility is that women do not have different preferences for spending on children and that this is a myth based on too few studies that have mixed findings (Lundberg, Pollak, and Wales, 1997; Pitt and Khandker, 1998; Duflo, 2003; Ambler, 2016; Haushofer and Shapiro, 2016). Another possibility is that women's empowerment impacts investment in children specifically in the presence of an extra-household transfer. Such a dynamic can be easily explained by theories of mental accounting (Thaler, 1999).

Mental accounting suggests that the source of income may affect how that income is spent. In other words, people have spending preferences that are specific to the source of the funds. If men and women have difference preferences for spending new income such as cash transfers or pensions, it is possible to observe that shifting control to women through the receipt of this new income would increase spending on children. Ambler (2016) provides a good example of this: while South African women who receive a pension appear to spend it at least in part on grandchildren, men "spend" it on retirement. However, they may not have different preferences over the household's "regular" earned income, such as that from sugarcane, as these are considered a fixed part of the household budget. The findings provided here offer evidence of this: despite exogenous increases in women's empowerment and documented changes in agency, in the absence of an extra-household transfer we observe no changes in spending on health or education, nor increases in food security. It should be noted that we also do not observe an increase in household income. Had the intervention shifted total household resources, this may have changed the impacts on family welfare. We also acknowledge that this relationship should be tested in other settings to understand the extent to which these finding may be context specific.

While we find no impacts on investments in children, we do find that these interventions that empowered women improved the life satisfaction of not only the women themselves, but also their husbands. When examining impacts of each intervention on the sub-components of the life satisfaction index, it appears that the EI may have benefited husbands by relieving some of their burden of cane management, as they become more satisfied with the allocation of household responsibilities. This suggests that empowering women by allowing them into

traditionally male roles may also benefit men by changing their expectations and responsibilities. The BCI appears to have increased all facets of men's life satisfaction, perhaps through the estimated impacts on marital quality or the workshop's focus on understanding each partner's contributions to the household.

In sum, we document that an intra-household transfer of productive assets can significantly improve women's empowerment. However, we also provide evidence that empowering women in the absence of extra-household transfers might not generate the benefits for children that have been widely assumed both by economists and policymakers. Nonetheless, empowering women in this way offers improvements in life satisfaction for both women and men at a lower public cost than existing transfer programs. Even in the absence of downstream impacts on children, empowering women remains a worthy goal from the perspectives of both equity and life satisfaction.

References

- ADB (2011). Strengthening Gender Impacts of Social Protection in the Philippines. Tech. rep. Asian Development Bank, p. 2.
- Aker, Jenny C. et al. (Oct. 2016). "Payment Mechanisms and Antipoverty Programs: Evidence from a Mobile Money Cash Transfer Experiment in Niger". In: *Economic Development and Cultural Change* 65.1, pp. 1–37. ISSN: 0013-0079. DOI: 10.1086/687578.
- Akresh, Richard, Damien de Walque, and Harounan Kazianga (Jan. 2013). Cash Transfers and Child Schooling: Evidence from a Randomized Evaluation of the Role of Conditionality. Tech. rep. Washington, DC: World Bank. DOI: 10.1596/1813-9450-6340.
- Almås, Ingvild et al. (2018). "Measuring and Changing Control: Women's Empowerment and Targeted Transfers". In: *The Economic Journal* 128.612, F609–F639. ISSN: 1468-0297. DOI: 10.1111/ecoj.12517.
- Ambler, Kate (Oct. 2016). "Bargaining with Grandma: The Impact of the South African Pension on Household Decision-Making". In: *Journal of Human Resources* 51.4, pp. 900–932. ISSN: 0022-166X, 1548-8004. DOI: 10.3368/jhr.51.4.0314-6265R1.
- Ambler, Kate, Kelly M. Jones, and Maria Recalde (2021). "Measurement of Intra-Household Resource Control: Exploring the Validity of Experimental Measures".
- Ambler, Kate, Kelly Jones, and Michael O'Sullivan (Feb. 2021). "Facilitating Women's Access to an Economic Empowerment Initiative: Evidence from Uganda". In: *World Development* 138, p. 105224. ISSN: 0305-750X. DOI: 10.1016/j.worlddev.2020.105224.
- Ambler, Kate, Kelly Jones, Michael O'Sullivan, and Anasuya Sivaram (2016). "Farm and Family Balance: Connecting Women to the Cash Crop Industry in Uganda". In: *Baseline Report*.
- Anderson, Michael L. (Dec. 2008). "Multiple Inference and Gender Differences in the Effects of Early Intervention: A Reevaluation of the Abecedarian, Perry Preschool, and Early Training Projects". In: *Journal of the American Statistical Association* 103.484, pp. 1481–1495. ISSN: 0162-1459, 1537-274X. DOI: 10.1198/016214508000000841.
- Anderson, Siwan and Jean-Marie Baland (Aug. 2002). "The Economics of Roscas and Intrahousehold Resource Allocation*". In: *The Quarterly Journal of Economics* 117.3, pp. 963–995. ISSN: 0033-5533. DOI: 10.1162/003355302760193931.
- Armand, Alex et al. (Oct. 2020). "The Effect of Gender-Targeted Conditional Cash Transfers on Household Expenditures: Evidence from a Randomized Experiment". In: *The Economic Journal* 130.631, pp. 1875–1897. ISSN: 0013-0133. DOI: 10.1093/ej/ueaa056.

- Ashraf, Nava, Dean Karlan, and Wesley Yin (Mar. 2010). "Female Empowerment: Impact of a Commitment Savings Product in the Philippines". In: *World Development* 38.3, pp. 333–344. ISSN: 0305-750X. DOI: 10.1016/j.worlddev.2009.05.010.
- Athey, S. and G. W. Imbens (Jan. 2017). "Chapter 3 The Econometrics of Randomized Experimentsa". In: *Handbook of Economic Field Experiments*. Ed. by Abhijit Vinayak Banerjee and Esther Duflo. Vol. 1. Handbook of Field Experiments. North-Holland, pp. 73–140. DOI: 10.1016/bs.hefe.2016.10.003.
- Attanasio, Orazio and Valérie Lechene (Oct. 2002). "Tests of Income Pooling in Household Decisions". In: *Review of Economic Dynamics* 5.4, pp. 720–748. ISSN: 1094-2025. DOI: 10.1006/redy.2002.0191.
- Baird, Sarah, Craig McIntosh, and Berk Özler (Sept. 2019). "When the Money Runs out: Do Cash Transfers Have Sustained Effects on Human Capital Accumulation?" In: *Journal of Development Economics* 140, pp. 169–185. ISSN: 0304-3878. DOI: 10.1016/j.jdeveco. 2019.04.004.
- Barber, Sarah L. and Paul J. Gertler (Apr. 2010). "Empowering Women: How Mexico's Conditional Cash Transfer Programme Raised Prenatal Care Quality and Birth Weight". In: *Journal of Development Effectiveness* 2.1, pp. 51–73. ISSN: 1943-9342. DOI: 10.1080/19439341003592630.
- Barsbai, Toman et al. (June 2020). Information and the Acquisition of Social Network Connections. Working Paper 27346. National Bureau of Economic Research. DOI: 10.3386/w27346.
- Benhassine, Najy et al. (Aug. 2015). "Turning a Shove into a Nudge? A "Labeled Cash Transfer" for Education". In: *American Economic Journal: Economic Policy* 7.3, pp. 86–125. ISSN: 1945-7731. DOI: 10.1257/pol.20130225.
- Biryabarema, E (2016). "Raw Sugar Output by Uganda's Top Processors down 14 Pct in H1". In: *Reuters*.
- Bossuroy, Thomas et al. (Mar. 2021). Pathways out of Extreme Poverty: Tackling Psychosocial and Capital Constraints with a Multi-Faceted Social Protection Program in Niger. Tech. rep. 9562. The World Bank.
- Bourguignon, François, Francisco H. G. Ferreira, and Phillippe G. Leite (Dec. 2003). "Conditional Cash Transfers, Schooling, and Child Labor: Micro-Simulating Brazil's Bolsa Escola Program". In: *The World Bank Economic Review* 17.2, pp. 229–254. ISSN: 0258-6770. DOI: 10.1093/wber/lhg018.
- Breierova, Lucia and Esther Duflo (May 2004). The Impact of Education on Fertility and Child Mortality: Do Fathers Really Matter Less Than Mothers? Tech. rep. 10513. National Bureau of Economic Research, Inc.

- Chang, Wei et al. (July 2020). "What Works to Enhance Women's Agency: Cross-Cutting Lessons from Experimental and Quasi-Experimental Studies". J-PAL Working Paper.
- Chou, Shin-Yi et al. (Jan. 2010). "Parental Education and Child Health: Evidence from a Natural Experiment in Taiwan". In: *American Economic Journal: Applied Economics* 2.1, pp. 33–61. ISSN: 1945-7782. DOI: 10.1257/app.2.1.33.
- Doepke, Matthias and Michèle Tertilt (Dec. 2019). "Does Female Empowerment Promote Economic Development?" In: *Journal of Economic Growth* 24.4, pp. 309–343. ISSN: 1381-4338, 1573-7020. DOI: 10.1007/s10887-019-09172-4.
- Donald, Aletheia, Markus Goldstein, and Lea Rouanet (2021). "Two Heads Are Better than One: Couples' Training, Household Production and Investment in Côte d'Ivoire".
- Doss, Cheryl, Caitlin Kieran, and Talip Kilic (July 2020). "Measuring Ownership, Control, and Use of Assets". In: *Feminist Economics* 26.3, pp. 144–168. ISSN: 1354-5701. DOI: 10.1080/13545701.2019.1681591.
- Doyle, Kate et al. (Apr. 2018). "Gender-Transformative Bandebereho Couples' Intervention to Promote Male Engagement in Reproductive and Maternal Health and Violence Prevention in Rwanda: Findings from a Randomized Controlled Trial". In: *PLOS ONE* 13.4, e0192756. ISSN: 1932-6203. DOI: 10.1371/journal.pone.0192756.
- Duflo, Esther (2003). "Grandmothers and Granddaughters: Old-Age Pensions and Intrahousehold Allocation in South Africa". In: *The World Bank Economic Review* 17.1, pp. 1–25. ISSN: 0258-6770.
- (Dec. 2012). "Women Empowerment and Economic Development". In: Journal of Economic Literature 50.4, pp. 1051–1079. ISSN: 0022-0515. DOI: 10.1257/jel.50.4.1051.
- Field, Erica et al. (July 2021). "On Her Own Account: How Strengthening Women's Financial Control Impacts Labor Supply and Gender Norms". In: *American Economic Review* 111.7, pp. 2342–2375. ISSN: 0002-8282. DOI: 10.1257/aer.20200705.
- Gertler, Paul (May 2004). "Do Conditional Cash Transfers Improve Child Health? Evidence from PROGRESA's Control Randomized Experiment". In: *American Economic Review* 94.2, pp. 336–341. ISSN: 0002-8282. DOI: 10.1257/0002828041302109.
- Haushofer, Johannes and Jeremy Shapiro (Nov. 2016). "The Short-Term Impact of Unconditional Cash Transfers to the Poor: ExperimentalEvidence from Kenya*". In: *The Quarterly Journal of Economics* 131.4, pp. 1973–2042. ISSN: 0033-5533, 1531-4650. DOI: 10.1093/qje/qjw025.
- Heath, Rachel, Melissa Hidrobo, and Shalini Roy (Mar. 2020). "Cash Transfers, Polygamy, and Intimate Partner Violence: Experimental Evidence from Mali". In: *Journal of Development Economics* 143, p. 102410. ISSN: 0304-3878. DOI: 10.1016/j.jdeveco.2019. 102410.

- Heß, Simon (Sept. 2017). "Randomization Inference with Stata: A Guide and Software". In: *The Stata Journal* 17.3, pp. 630–651. ISSN: 1536-867X. DOI: 10.1177/1536867X1701700306.
- Kabeer, Naila (1999). "Resources, Agency, Achievements: Reflections on the Measurement of Women's Empowerment". In: *Development and Change* 30.3, pp. 435–464. ISSN: 1467-7660. DOI: 10.1111/1467-7660.00125.
- Kilic, Talip et al. (Feb. 2020). Are You Being Asked? Impacts of Respondent Selection on Measuring Employment. Policy Research Working Papers. The World Bank. DOI: 10. 1596/1813-9450-9152.
- Lecoutere, Els and Eva Wuyts (June 2021). "Confronting the Wall of Patriarchy: Does Participatory Intrahousehold Decision Making Empower Women in Agricultural Households?" In: *The Journal of Development Studies* 57.6, pp. 882–905. ISSN: 0022-0388. DOI: 10.1080/00220388.2020.1849620.
- List, John A., Azeem M. Shaikh, and Yang Xu (Dec. 2019). "Multiple Hypothesis Testing in Experimental Economics". In: *Experimental Economics* 22.4, pp. 773–793. ISSN: 1573-6938. DOI: 10.1007/s10683-018-09597-5.
- Litwin, Ashley, Elizaveta Perova, and Sarah Anne Reynolds (Oct. 2019). "A Conditional Cash Transfer and Women's Empowerment: Does Bolsa Familia Influence Intimate Partner Violence?" In: Social Science & Medicine 238, p. 112462. ISSN: 0277-9536. DOI: 10.1016/j.socscimed.2019.112462.
- Lundberg, Shelly J., Robert A. Pollak, and Terence J. Wales (1997). "Do Husbands and Wives Pool Their Resources? Evidence from the United Kingdom Child Benefit". In: *The Journal of Human Resources* 32.3, pp. 463–480. ISSN: 0022-166X. DOI: 10.2307/146179.
- Macours, Karen, Norbert Schady, and Renos Vakis (Apr. 2012). "Cash Transfers, Behavioral Changes, and Cognitive Development in Early Childhood: Evidence from a Randomized Experiment". In: *American Economic Journal: Applied Economics* 4.2, pp. 247–273. ISSN: 1945-7782. DOI: 10.1257/app.4.2.247.
- Mayoux, Linda (Dec. 2012). "Gender Mainstreaming in Value Chain Development: Experience with Gender Action Learning System in Uganda". In: *Enterprise Development and Microfinance* 23. DOI: 10.3362/1755-1986.2012.031.
- Molyneux, Maxine and Marilyn Thomson (July 2011). "Cash Transfers, Gender Equity and Women's Empowerment in Peru, Ecuador and Bolivia". In: Gender & Development 19.2, pp. 195–212. ISSN: 1355-2074. DOI: 10.1080/13552074.2011.592631.
- Pierotti, Rachael S., Milli Lake, and Chloé Lewis (Aug. 2018). "Equality on His Terms: Doing and Undoing Gender through Men's Discussion Groups". In: Gender & Society 32.4, pp. 540–562. ISSN: 0891-2432. DOI: 10.1177/0891243218779779.

- Pitt, Mark M. and Shahidur R. Khandker (Oct. 1998). "The Impact of Group-Based Credit Programs on Poor Households in Bangladesh: Does the Gender of Participants Matter?" In: *Journal of Political Economy* 106.5, pp. 958–996. ISSN: 0022-3808. DOI: 10.1086/250037.
- Quisumbing, Agnes R. et al. (Aug. 2020). Designing for Empowerment Impact in Agricultural Development Projects: Experimental Evidence From the Agriculture, Nutrition, and Gender Linkages (ANGeL) Project in Bangladesh. SSRN Scholarly Paper ID 3674113. Rochester, NY: Social Science Research Network.
- Schwab, Benjamin et al. (Dec. 2020). "Constructing a Summary Index Using the Standardized Inverse-Covariance Weighted Average of Indicators". In: *The Stata Journal* 20.4, pp. 952–964. ISSN: 1536-867X. DOI: 10.1177/1536867X20976325.
- Seshan, Ganesh and Dean Yang (May 2014). "Motivating Migrants: A Field Experiment on Financial Decision-Making in Transnational Households". In: *Journal of Development Economics* 108, pp. 119–127. ISSN: 0304-3878. DOI: 10.1016/j.jdeveco.2014.01.005.
- Strauss, John, Germano Mwabu, and Kathleen Beegle (June 2000). "Intrahousehold Allocations: A Review of Theories and Empirical Evidence". In: *Journal of African Economies* 9.Supplement_1, pp. 83–143. ISSN: 0963-8024. DOI: 10.1093/jafeco/9.Supplement_1. 83.
- Thaler, Richard H. (1999). "Mental Accounting Matters". In: Journal of Behavioral Decision Making 12.3, pp. 183–206. ISSN: 1099-0771. DOI: 10.1002/(SICI)1099-0771(199909) 12:3<183::AID-BDM318>3.0.CO;2-F.
- Vaillant, Julia et al. (May 2020). "Engaging Men to Transform Inequitable Gender Attitudes and Prevent Intimate Partner Violence: A Cluster Randomised Controlled Trial in North and South Kivu, Democratic Republic of Congo". In: *BMJ Global Health* 5.5. ISSN: 2059-7908. DOI: 10.1136/bmjgh-2019-002223.
- Young, Alwyn (May 2019). "Channeling Fisher: Randomization Tests and the Statistical Insignificance of Seemingly Significant Experimental Results*". In: *The Quarterly Journal of Economics* 134.2, pp. 557–598. ISSN: 0033-5533, 1531-4650. DOI: 10.1093/qje/qjy029.

Figures

Figure i: Timeline of study

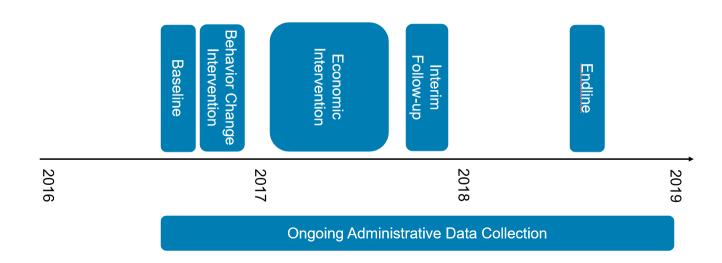
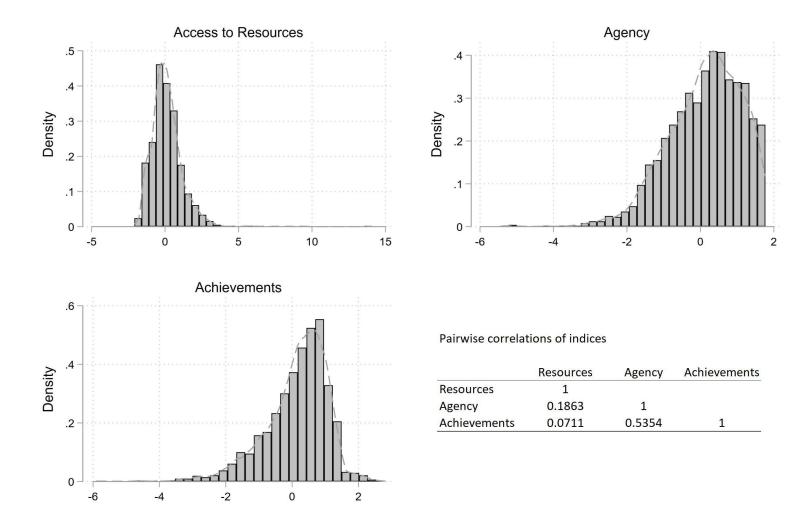
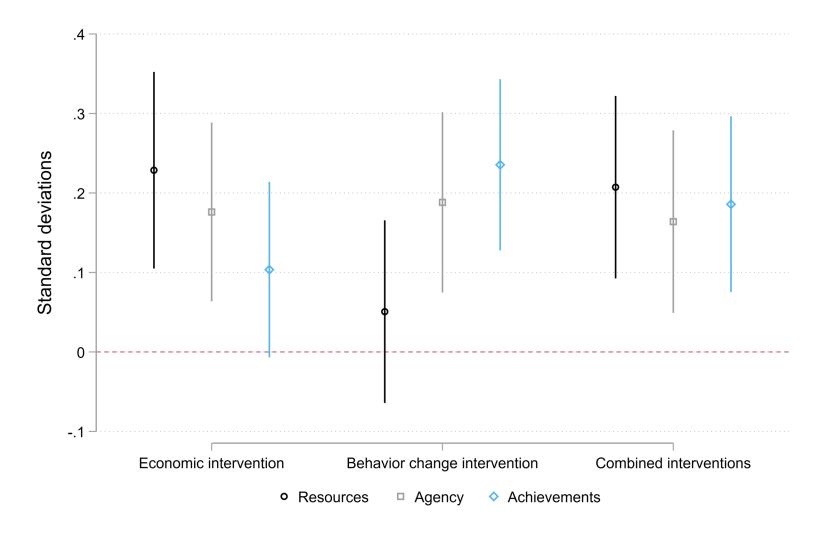


Figure ii: Distributions and correlations of indices for domains of empowerment



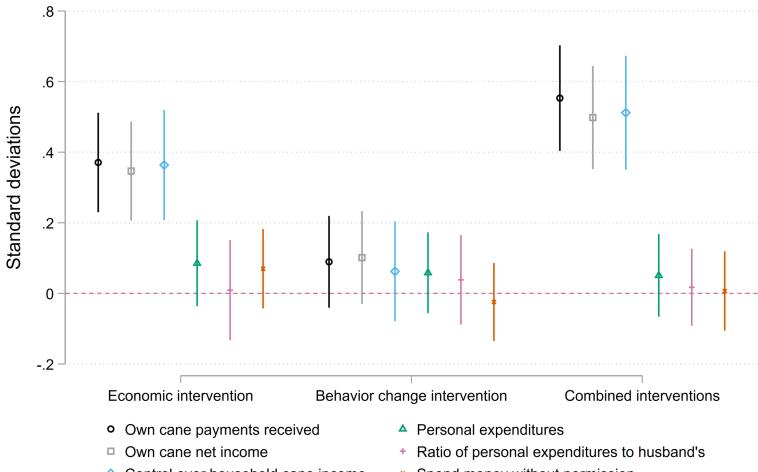
Note: Densities shown for the index of each domain of empowerment. Construction of indices is described in Section 4.2. Correlation between the three indices is also presented.

Figure iii: Domains of empowerment



Note: Estimates from Equation (3). "Economic Intervention" shows estimates of β_1 ; "Behavior Change Intervention" shows estimates of β_2 and "Combined intervention" shows estimates of β_3 . Dependent variables are shown in legend. Magnitudes are in standard deviations. Error bars show 95% confidence intervals.

Figure iv: Access to resources: sub-components



- Control over household cane income
- * Spend money without permission

Figure v: Agency: sub-indices

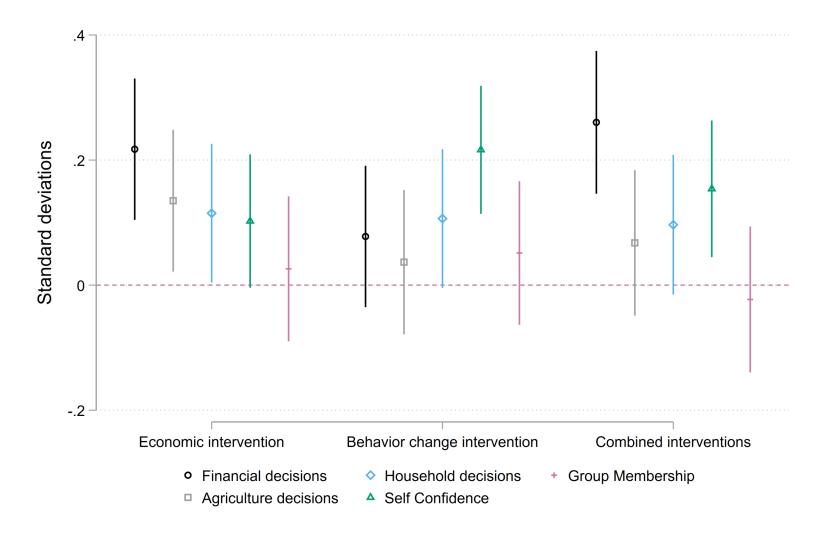


Figure vi: Achievements: sub-indices

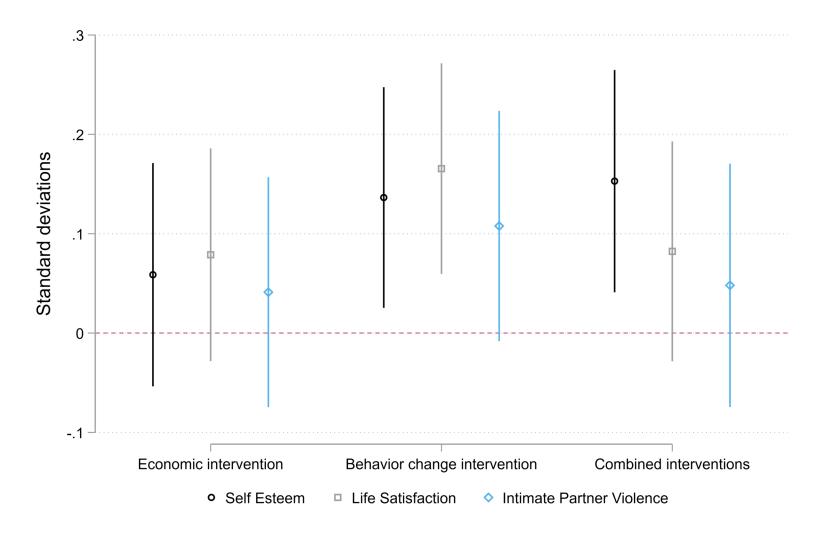


Figure vii: Mechanisms of impact

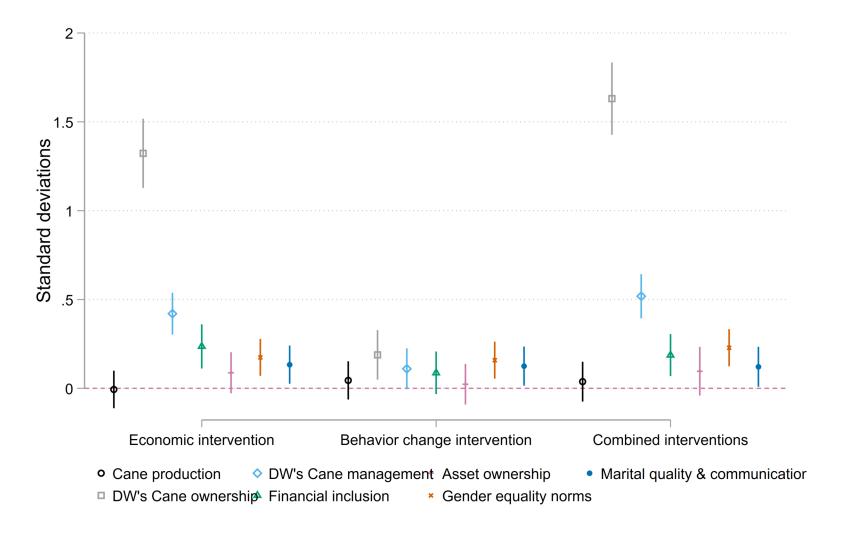


Figure viii: Possible unintended consequences

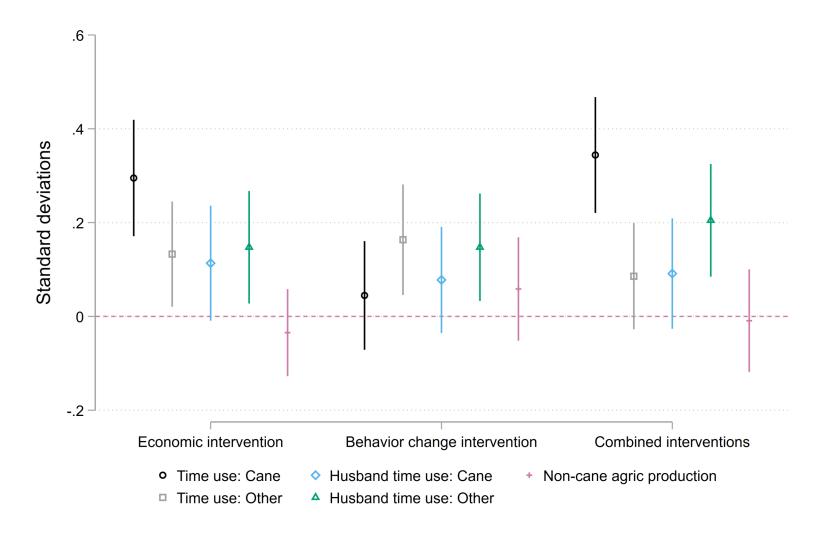


Figure ix: Family Welfare: Food Insecurity

Food Insecurity Score

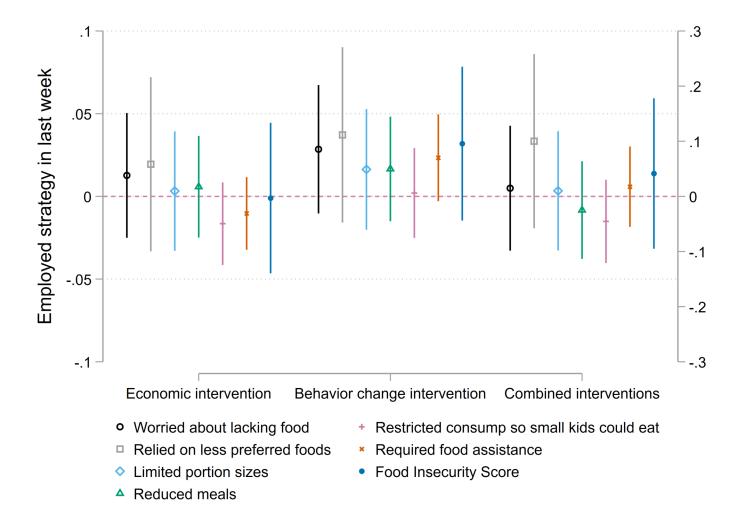
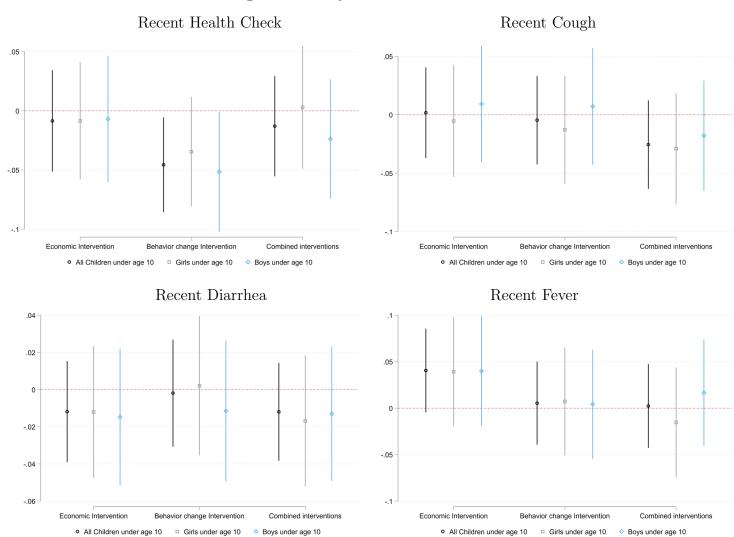
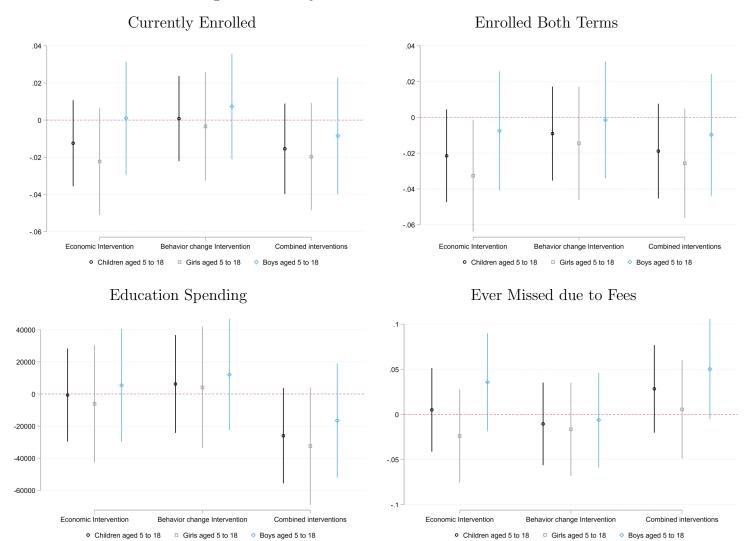


Figure x: Family Welfare: Child Health



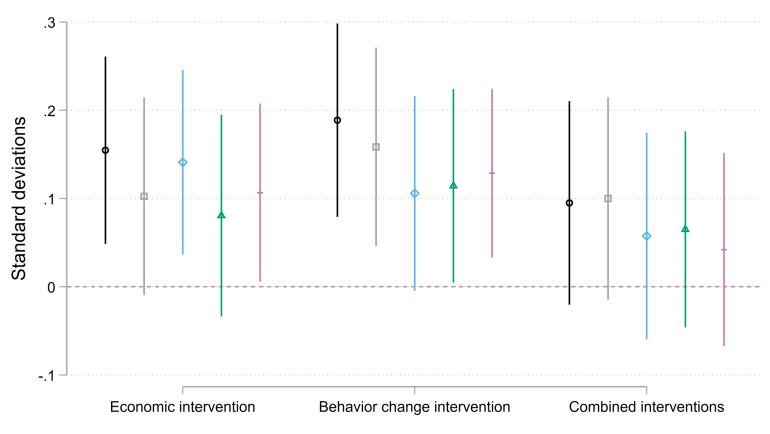
Note: See notes to Figure iii. Estimates are at the child level.

Figure xi: Family Welfare: Educational Investment



Note: See notes to Figure iii. Estimates are at the child level.

Figure xii: Family Welfare: Husband's Life Satisfaction



- Life Satisfaction Index
- Satisfied with life overall
- Satisfied with distribution of work in household
- △ Satisfied with available leisure time
- + Satisfied with power to make important decisions

Tables

Table i: Summary Statistics

| | | | Means | | |
|--|-------------|---------------------------|----------------------------------|------------------------|---|
| | Control (1) | Economic intervention (2) | Behavior change intervention (3) | Both interventions (4) | P-value for test that $1 = 2 = 3 = 4$ (5) |
| Baseline characteristics | | | | | |
| Husband age | 47.34 | 46.00 | 46.33 | 46.76 | 0.126 |
| Wife age | 38.73 | 37.90 | 38.39 | 38.62 | 0.232 |
| Household is polygamous | 0.33 | 0.34 | 0.34 | 0.34 | 0.999 |
| Length of marriage | 20.04 | 19.20 | 19.26 | 19.71 | 0.119 |
| Husband can read and write | 0.86 | 0.86 | 0.85 | 0.81 | 0.086 |
| Husband years of schooling | 7.45 | 7.55 | 7.40 | 7.12 | 0.202 |
| Wife can read & write | 0.63 | 0.64 | 0.63 | 0.63 | 0.977 |
| Wife years of schooling | 5.38 | 5.73 | 5.70 | 5.53 | 0.096 |
| Absolute difference in spouses' ages | 8.95 | 8.40 | 8.10 | 8.40 | 0.166 |
| Absolute difference in spouses' years of schooling | 3.46 | 3.46 | 3.38 | 3.55 | 0.797 |
| Household size | 9.03 | 8.62 | 8.51 | 8.65 | 0.040 |
| Number of children | 5.15 | 4.94 | 4.86 | 4.99 | 0.274 |
| Number of children under 5 | 1.45 | 1.42 | 1.37 | 1.38 | 0.640 |
| Food insecure | 0.60 | 0.63 | 0.63 | 0.636 | 0.445 |
| Severely food insecure | 0.36 | 0.38 | 0.40 | 0.402 | 0.467 |
| Number of sugarcane blocks currently cultivated | 4.07 | 4.04 | 4.06 | 3.88 | 0.773 |
| Husband contributes to sugarcane | 1.00 | 0.99 | 0.99 | 0.99 | 0.734 |
| Wife contributes to sugarcane | 0.79 | 0.81 | 0.80 | 0.81 | 0.887 |
| Attrition | | | | | |
| Wife completed endline | 0.96 | 0.97 | 0.98 | 0.97 | 0.539 |
| Husband completed endline | 0.92 | 0.91 | 0.93 | 0.90 | 0.267 |

Notes: Sample is households completing the baseline survey. *p*-value is calculated using the main regression specification.

Table ii: Take-up of interventions

(1)

(2)

(3)

Panel A: Behavior change intervention Husband Wife Husband and wife Average days attended 2.324 2.1922.310 Attended at least two days 0.7860.7890.7460.656 Attended all three days 0.7000.708

| Panel B: Economic intervention | No workshop | Workshop | Overall |
|-------------------------------------|-------------|----------|---------|
| Initial visit | | | |
| Agreed to register/transfer (%) | 75.0% | 81.4% | 78.2% |
| Total blocks registered/transferred | 0.931 | 1.010 | 0.971 |
| Final takeup | | | |
| Completed registration/transfer (%) | 67.7% | 73.8% | 70.8% |
| Total blocks registered/transferred | 0.719 | 0.790 | 0.755 |
| Completed registration (%) | 57.0% | 60.7% | 58.9% |
| Completed transfer (%) | 11.3% | 13.8% | 12.6% |

Notes: Sample is households that completed the baseline survey and are (Panel A) assigned to the behavior change intervention, or (Panel B) assigned to the economic intervention.

Table iii: Hypothesized impacts of interventions

| Impact of \downarrow on \rightarrow | h | c | f | s n | R | G | A |
|---|----|----------|----|-----------------|----------|---|---|
| Economic intervention | =0 | + | + | $\geq 0 \geq 0$ | + | + | + |
| Behavior change intervention | =0 | ≥ 0 | =0 | = 0 + | ≥ 0 | + | + |

Notes: Parameters are as defined in Section 3. Hypothesized impacts are derived in Section 3 as well.

Table iv: Index Components

| Relevant variables | Mean presented, if different than version in index | Full Sample Mean | Control Mean |
|--|--|--|--|
| ACCESS TO RESOURCES INDEX | | | |
| Payments DW received from cane (1000 UGX) | | 812,467 | 383,257 |
| Net income DW received from cane (1000 UGX) | | $734,\!420$ | 353,926 |
| Payments on wife's blocks: share controlled by wife | | 0.90 | 0.93 |
| Payments on husband's blocks: share controlled by wife | | 0.13 | 0.08 |
| DW personal expenditures (1000 UGX) | | $52,\!565$ | $48,\!607$ |
| Ratio of DW personal expenditures to H's | | 4.267 | 3.058 |
| AGENCY INDEX: Financial decisions sub-index HHR Indices based on 1 to 5 scale on who decides about How to earn money for the household How the money she earns will be used How her husband's earnings will be used Making major household purchases Making everyday household purchases Spending payments she receives Spending payments her husband receives HHR Index: Who decides about use of enterprise profits | Wife has any say % of ent where wife has any say | 0.479 0.703 0.327 0.526 0.820 0.532 0.490 0.109 | 0.450 0.670 0.293 0.514 0.799 0.443 0.431 0.098 |
| AGENCY INDEX: Agricultural decisions sub-index HHR Indices based on 1 to 5 scale on who decides about | Wife has any say | | |
| how to use agricultural land | | 0.566 | 0.554 |
| Anderson indices across all non-sugar crops for | % of crops where wife has any say | 0.05- | 0.046 |
| who decides production (HHR index) | | 0.857 | 0.843 |
| who decides sales (HHR index) | | 0.818 | 0.803 |

Continued on next page

Table iv continued: Index Components

| | | Full | ~ . |
|--|------------------------------------|--------|---------|
| | Mean presented, | Sample | Control |
| Relevant variables | if different than version in index | Mean | Mean |
| | | | |
| AGENCY INDEX: Household decisions sub-index | | | |
| HHR Indices based on 1 to 5 scale on who decides about | Wife has at least equal say | | |
| How to allocate responsibilities in the household | | 0.664 | 0.655 |
| Health care for herself | | 0.741 | 0.730 |
| Health care for their children | | 0.721 | 0.690 |
| Limiting the number of children born | | 0.796 | 0.762 |
| Visits to friends or relatives | | 0.593 | 0.564 |
| | | | |
| AGENCY INDEX: Self-confidence sub-index | | | |
| HHR Indices based on 1 to 4 scale response about her comfort | Very comfortable | | |
| speaking out at a meeting of other women | | 0.868 | 0.826 |
| speaking out at a meeting of men and women | | 0.761 | 0.724 |
| talking to people who work for you about a disagreement | | 0.889 | 0.868 |
| refusing someone who has asked to buy something for less than a fair price | | 0.910 | 0.893 |
| bargaining with a supplier to get a lower price for something | | 0.942 | 0.921 |
| speaking out about a hh money issue with your spouse if you do not agree | | 0.860 | 0.850 |
| | | | |
| A GENOW INDEX. G | | | |
| AGENCY INDEX: Group membership | | | |
| Whether she belongs to any group | | 0.633 | 0.627 |
| (social, community, professional, religious, etc.) | | | |

Continued on next page

Table iv continued: Index Components

| | Mean presented, if different than | Full Sample | Control |
|--|-----------------------------------|----------------|---------|
| Relevant variables | version in index | Mean | Mean |
| ACHIEVEMENTS INDEX: Life Satisfaction sub-index | | | |
| HHR Indices based on 1 to 4 scale response about satisfaction with | Very satisfied | | |
| your life these days | | 0.352 | 0.327 |
| the distribution of work duties within your household | | 0.589 | 0.563 |
| your available time for leisure activities | | 0.574 | 0.553 |
| your power to make important decisions | | 0.528 | 0.489 |
| ACHIEVEMENTS INDEX: Self-esteem sub-index | | | |
| HHR Indices based on 1 to 4 scale response about DISAGREEMENT that \dots | Strongly disagrees | | |
| At times you think you are no good at all | | 0.564 | 0.548 |
| You feel you do not have much to be proud of | | 0.286 | 0.269 |
| You certainly feel useless at times | | 0.723 | 0.702 |
| You wish you could have more respect for yourself | | 0.034 | 0.028 |
| All in all, you are inclined to feel you are a failure | | 0.674 | 0.627 |
| HHR Indices based on 1 to 4 scale response about AGREEMENT that | Strongly agrees | | |
| You feel you have a number of good qualities | | 0.383 | 0.335 |
| You are able to do things as well as most other people | | 0.632 | 0.613 |
| You feel that you are a person of worth, at least equal plane others | | 0.673 | 0.648 |
| You take a positive attitute towards yourself | | 0.840 | 0.824 |
| ACHIEVEMENTS INDEX: Free from IPV sub-index | | | |
| Reports no IPV in past year | | 0.910 | 0.907 |
| WOMAN Disagrees that husband is justified in hitting his wife if | | | |
| She goes out of the home without telling him | | 0.667 | 0.652 |
| She neglects the children | | 0.626 | 0.606 |
| She argues with him | | 0.839 | 0.833 |
| She refuses to have sex with him | | 0.844 | 0.825 |
| She burns the food | | 0.901 | 0.882 |
| HUSBAND Disagrees that husband is justified in hitting his wife if | | 0.040 | 0.040 |
| She goes out of the home without telling him | | 0.849 | 0.846 |
| She neglects the children | | 0.810 | 0.783 |
| She argues with him | | 0.929 | 0.917 |
| She refuses to have sex with him | | 0.946 | 0.954 |
| She burns the food | | 0.967 | 0.963 |

Table iv continued: Index Components

| | Mean presented, | Full | C 1 |
|--|------------------------------------|----------------|-----------------|
| Relevant variables | if different than version in index | Sample Mean | Control Mean |
| FAMILY WELFARE: Food security outcomes | | | |
| Food Insecurity Score | | -1.832 | -1.795 |
| During the past 7 days | | | |
| Worried about lacking food | | 0.128 | 0.116 |
| Relied on less preferred foods | | 0.307 | 0.283 |
| Limited portion sizes | | 0.112 | 0.106 |
| Reduced meals | | 0.076 | 0.072 |
| Restricted consumption so small children could eat | | 0.049 | 0.056 |
| Required food assistance | | 0.047 | 0.042 |
| FAMILY WELFARE: Child health outcomes | | | |
| Share of children under age 10 with | | | |
| Recent health check | | 0.162 | 0.178 |
| Recent cough | | 0.122 | 0.127 |
| Recent diarrhea | | 0.457 | 0.448 |
| Recent fever | | 0.178 | 0.186 |
| FAMILY WELFARE: Child education outcomes | | | |
| Education spending per child | | 272,656 | 279,312 |
| Share of children aged 6 to 18 who were | | | |
| Currently enrolled | | 0.873 | 0.881 |
| Enrolled both of two most recent terms | | 0.858 | 0.871 |
| Never missed school in 2 most recent terms due to unpaid fees | | 0.688 | 0.693 |
| FAMILY WELFARE: Husband's life satisfaction index | | | |
| HHR Indices based on 1 to 4 scale response about satisfaction with | Very satisfied | | |
| your life these days | * | 0.394 | 0.367 |
| the distribution of work duties within your household | | 0.726 | 0.683 |
| your available time for leisure activities | | 0.651 | 0.622 |
| your power to make important decisions | | 0.831 | 0.817 |

Notes: Each section presents the variables included in the noted index and describes how they are included. Means are presented for the variables in the included form unless otherwise specified in the second column. HHR indices and Anderson indices are described in Section 4.2 and in Appendix B.

Table v: Impacts on Empowerment

| | Resources (1) | Agency (2) | Achievements (3) |
|------------------------------|---------------|------------|------------------|
| Economic intervention | 0.220*** | 0.169*** | 0.100* |
| Standard error | (0.064) | (0.058) | (0.057) |
| RI p-value | 0.00 | 0.01 | 0.07 |
| MHT | 0.00 | 0.03 | 0.43 |
| Behavior change intervention | 0.047 | 0.182*** | 0.231*** |
| Standard error | (0.059) | (0.058) | (0.056) |
| RI p-value | 0.43 | 0.00 | 0.00 |
| MHT | 0.91 | 0.03 | 0.00 |
| Combined interventions | 0.202*** | 0.159*** | 0.181*** |
| Standard error | (0.060) | (0.059) | (0.057) |
| RI p-value | 0.00 | 0.00 | 0.00 |
| MHT | 0.00 | 0.07 | 0.01 |
| EI only = BCI only | | | |
| Robust p-value | 0.007 | 0.827 | 0.017 |
| RI p-value | 0.01 | 0.82 | 0.02 |
| MHT | 0.06 | 0.96 | 0.13 |
| EI only = Both | | | |
| Robust p-value | 0.785 | 0.868 | 0.150 |
| RI p-value | 0.78 | 0.85 | 0.15 |
| MHT | 0.99 | 0.87 | 0.62 |
| BCI only = Both | | | |
| Robust p-value | 0.010 | 0.704 | 0.362 |
| RI p-value | 0.01 | 0.69 | 0.37 |
| MHT | 0.08 | 0.98 | 0.90 |
| Pure control mean | 0.000 | -0.000 | 0.000 |
| Adjusted R-squared | 0.014 | 0.037 | 0.026 |
| Observations | 2301 | 2212 | 2301 |

Note: Estimations of β_1 , β_2 , and β_3 from Equation (3). Robust standard errors are shown in parentheses. RI p-values are presented below. MHT indicates Family-wise Error Rate corrected p-values. Lower sections present tests for equality of coefficients, with the associated p-values of each type. Pure control means are zero by construction of the index. Means of relevant components are presented in Table iv. Observations are lower for agency because some women are without husbands at endline and the decision making questions do not apply.

Table vi: Components of additional indices

| Index | Components |
|----------------------|--|
| Cane ownership | Wife holds any registration Proportion of blocks registered to women |
| Cane management | Primary manager of any block Number of management cane activities DW participates in Number of correct cane knowledge answers DW's decision making role in cane production: DW report DW's decision making role in cane sales: DW report DW's decision making role in cane production: H report DW's decision making role in cane sales: H report |
| Financial inclusion | Has bank account Has active bank account Applied for loan Received loan Total loaned (/1000 UGX) Has outstanding balance Loan balance (/1000 UGX) |
| Women's assets | DW owns land DW savings balance (/1000 UGX) |
| Non-sugar production | Acres of land dedicated to food crops Acres of land dedicated to other non-food crops Land for food crops increased in last 12 months Land for non-food crops increased in last 12 months Land for non-sugarcane crops increased in last 12 months Total production value of other crops (/1000 UGX) Total sale value of other crops (/1000 UGX) Profits from non-ag enterprises (/1000 UGX) |
| Time on other things | Average weekly hours spent on non-sugar ag Average weekly hours spent on wage labor Average weekly hours spent on enterprise labor Hours last week spent fetching firewood Hours last week spent on household management Hours last week spent on leisure Number of physical activities for non-sugar ag Number of management activities for non-sugar ag |

Continued on next page

Table vi Continued: Components of additional indices

| Index | Sub-index | Components |
|---|---|--|
| Time on sugar | Effort | Effort on sugar exceeds or equals spouse Effort on sugar exceeds or equals other crops Effort of sugar affects work on other crops Average weekly hours spent on sugar |
| | Physical activities for cane | Land preparation Planting Applying fertilizer Applying pesticide Watering Weeding Harvesting Loading harvest Transporting harvest |
| Gender norms & marital quality | Gender norms; wife & husband separately | Important decisions in the family should be made only by the men of the family (disagree) If wife working outside the home, husband should help her with household chores (agree) Wife has right to express opinion even if she disagrees with what husband is saying (agree) A wife should tolerate being beaten by her husband in order to keep the family together (disagree) It is better to send son to school than it is to send a daughter (disagree) |
| | Marital quality & communication (1 to 10 agree scale) | Regarding major household decisions or issues, usually my spouse and I will discuss these together I think that my spouse contributes a lot to the wellbeing of this household If I ever have personal concerns, I like to discuss them with my spouse |

Notes: Each section presents the variables included in the noted index. HHR indices and Anderson indices are described in Section 4.2 and in Appendix B.

Appendix

A Adherence to pre-analysis plan

The pre-analysis plan classifies household-level outcomes from survey data as primary, secondary, or tertiary. These designations correspond to the directness of the expected impacts of the interventions. That is, those deemed primary are those expected to be directly affected, whereas those deemed tertiary are those expected to have only "downstream" impacts at best.

Within each of these groups, there are several constructs, each of which includes several indicators. In the plan, we proposed to construct standardized indices and False Discovery Rate-corrected q-values within each construct and we therefore take the constructs as inviolable units (with limited exceptions, discussed below).

In the analysis presented here, our main outcomes of interest are the constructs listed in the plan as women's access to resources (secondary), women's decision-making power (secondary), and women's empowerment (tertiary). In this analysis, following Kabeer (1999), women's decision-making power is referred to as "agency" and women's empowerment is referred to as "achievements."

In order to better align with the meaning of Kabeer's taxonomy, the following indicators have been moved from achievements to agency: self-confidence index and group membership. We note that this is a key difference between our analysis and the pre-analysis plan. However, we felt this change was necessary as these indicators more truly reflect agency rather than achievements. In Figure A1, we provide results that retain the original categorizations. The difference in the findings is that, when self-confidence and group membership are excluded from agency, the BCI does not have a statistically significant impact on agency. This is as expected since, as noted above, the primary mechanism by which BCI impacts agency is through improvements in self-confidence. Despite this deviation from the pre-analysis plan, we believe that the inclusion of these elements in agency is the correct approach, given the nature of the questions in the self-confidence module (see Table iv).

Following our conceptual framework, this analysis also explores potential mechanisms. These are drawn from the following pre-specified constructs: primary outcomes of women's ownership of sugarcane blocks, women's management of sugarcane blocks, and women's financial inclusion; and secondary outcomes of women's assets and marital quality and gender norms. The indicator for total household resources, h, is proxied here with total household cane production. This is the pre-specified (tertiary) construct: sugar production.

We also explore potential unintended consequences. These are drawn from the following

pre-specified constructs: secondary outcomes of time spent on sugarcane and time spent on non-sugar activities; and tertiary outcome non-sugar production activities.

In our exploration of impacts on family welfare, we draw on the following pre-specified constructs: tertiary outcomes of household expenditures and household welfare. One difference between our analysis and what was planned is that we have excluded from these the following indicators: health expenditures and seeking treatment for a sick child. We failed to note this at the time of pre-specification, but these outcome reflect not only willingness to invest in health, but also the propensity to have poor health and require these investments. Given that these capture countervailing effects, these are poor indicators of changes in household investment and have been excluded from the analysis. Also, in order to fully document the lack of any impact on the include measures of welfare, we show each indicator from these constructs independently rather than collapsing them into specified constructs.

We finally note that very few pre-specified outcomes are excluded from this analysis beyond what we have already noted. These are the items in the *other cane inputs* construct, which focus on the use of non-labor inputs to cane, *household outcomes from administrative data*, and *company outcomes*. Analyses of these constructs will be presented in a separate paper focused on the agricultural impacts of these interventions.

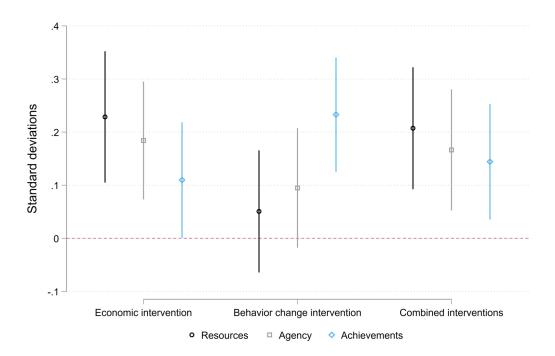


Figure A1: Impacts on Empowerment: pre-analysis plan specification

Note: See notes to Figure iii. Figure displays the results using the slightly modified grouping of variables as defined in the pre-analysis plan, as discussed in Appendix A.

B Categorical survey answers

All of the endline questions about decision-making follow this format: Who usually makes decisions about {topic}? Answer options: (a) I make these decisions on my own, (b) We make these decisions together, (c) My husband makes these decisions without my input.

If the answer given is (b), then the following is next asked: When you and your husband make decisions about {topic}, whose preferences matter more? Answer options: (i) My preferences, (ii) My husband's preferences, (iii) Our preferences matter equally.

The combination of answers from these two questions generates the following categories: (1) Husband decides alone, (2) Husband decides with wife's input, (3) Decision is made equally, (4) Wife decides with husband's input, (5) Wife decides alone. Because we do not want to make judgments that women having more or sole decision making power is necessarily preferred to equal decision making, we collapse these into the following three categories: (1) Wife has no say, (2) Wife has less than equal say, and (3) Wife has equal or more say. While we wish to maintain the information contained in the differences between the three categories above, but because we cannot assume that they are on a continuous scale, we therefore use the following method as proposed by Heath, Hidrobo, and Roy (2020).

We construct binary indicators for: wife has any say and wife has at least equal say. Taken together, this set of two binary indicators captures all of the information in the three categories above. We then normalize each indicator (using the mean and standard deviation of the control group). This ensures that variables with higher variance do not contribute disproportionately to the total index. We then sum these normalized indicators and renormalize the final index so it has a mean of zero and standard deviation of one. In this way, we have created an index for each question of who makes the decision about {topic}, which neither imposes a cardinal valuation on categories, nor excludes any available information.

We follow this same method for all other questions with categorical answers, which are shown below with their respective answer options.

- Self-esteem questions and Gender norms questions: Strongly disagree; Somewhat disagree; Somewhat agree; or Strongly agree
- Self-confidence questions: No, not at all comfortable; Yes, but with a great deal of difficulty; Yes, but with a little difficulty; Yes, fairly comfortable; or Yes, very comfortable
- Life satisfaction: Completely dissatisfied; Somewhat dissatisfied; Somewhat satisfied; or Completely satisfied
- Marital quality questions: Scale of 1 to 10.

C Additional tables

Tables in this section present estimations of β_1 , β_2 , and β_3 from Equation (3) for various outcomes, as presented in Figures iv to xii. Robust standard errors are shown in parentheses. RI p-values are presented below. MHT indicates sharpened q-values to control for the False Discovery Rate, as discussed in Section 4.3. Lower sections of the tables present tests for equality of coefficients, with the associated p-values of each type.

For Tables C1 to C4 and Table C8, outcomes are sub-indices and pure control means are zero by construction of the index. Means of relevant components are presented in Table iv. For Tables C5 to C7, outcomes are binary, with the exception of Column (1) in Table C7, for which the outcome is winsorized spending per child in 1,000 Ugandan shillings. For Tables C6 and C7, estimations are at the child level.

Table C1: Access to Resources: sub-components

| | Income fro | om own cane | Share of HH cane | Personal | Ratio of personal | Permission |
|------------------------------|------------|-------------|-------------------|--------------|-------------------|----------------|
| | Gross | Net | income controlled | expenditures | expend (W:H) | to spend index |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Economic intervention | 0.371*** | 0.347*** | 0.364*** | 0.085 | 0.009 | 0.064 |
| Standard error | (0.072) | (0.072) | (0.079) | (0.062) | (0.072) | (0.058) |
| RI p-value | 0.00 | 0.00 | 0.00 | 0.16 | 0.90 | 0.25 |
| MHT | 0.00 | 0.00 | 0.00 | 0.15 | 0.43 | 0.19 |
| Behavior change intervention | 0.089 | 0.101 | 0.062 | 0.058 | 0.038 | -0.026 |
| Standard error | (0.066) | (0.067) | (0.072) | (0.058) | (0.065) | (0.057) |
| RI p-value | 0.25 | 0.18 | 0.45 | 0.34 | 0.57 | 0.67 |
| MHT | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Combined interventions | 0.553*** | 0.498*** | 0.512*** | 0.051 | 0.017 | 0.003 |
| Standard error | (0.076) | (0.075) | (0.082) | (0.060) | (0.056) | (0.058) |
| RI p-value | 0.00 | 0.00 | 0.00 | 0.40 | 0.79 | $0.95^{'}$ |
| MHT | 0.00 | 0.00 | 0.00 | 0.42 | 0.83 | 0.92 |
| EI only = BCI only | | | | | | |
| Robust p-value | 0.000 | 0.002 | 0.000 | 0.664 | 0.702 | 0.112 |
| RI p-value | 0.00 | 0.00 | 0.00 | 0.67 | 0.68 | 0.11 |
| MHT | 0.00 | 0.00 | 0.00 | 0.31 | 0.31 | 0.09 |
| EI only = Both | | | | | | |
| Robust p-value | 0.034 | 0.072 | 0.098 | 0.585 | 0.907 | 0.287 |
| RI p-value | 0.02 | 0.06 | 0.08 | 0.58 | 0.91 | 0.28 |
| MHT | 0.25 | 0.25 | 0.25 | 0.54 | 0.76 | 0.28 |
| BCI only = Both | | | | | | |
| Robust p-value | 0.000 | 0.000 | 0.000 | 0.899 | 0.725 | 0.612 |
| RI p-value | 0.00 | 0.00 | 0.00 | 0.90 | 0.76 | 0.61 |
| MHT | 0.00 | 0.00 | 0.00 | 0.82 | 0.77 | 0.77 |
| Pure control mean | -0.000 | 0.000 | 0.000 | 0.000 | -0.000 | 0.000 |
| Adjusted R-squared | 0.048 | 0.039 | 0.042 | 0.017 | -0.002 | 0.003 |
| Observations | 2301 | 2301 | 1755 | 2297 | 2047 | 2295 |

Table C2: Agency & Achievements: sub-indices

| | Agency sub-indices | | | | | Achievements sub-indices | | |
|----------------------|--------------------|--------------|-----------|------------|------------|--------------------------|--------------|----------|
| | | Decision-mak | ing | Self- | Group | Self- | Life | Freedom |
| | Financial | Agricultural | HH mngmnt | confidence | membership | esteem | satisfaction | from IPV |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Economic | 0.210*** | 0.132** | 0.111* | 0.100* | 0.026 | 0.057 | 0.078 | 0.041 |
| Standard error | (0.059) | (0.059) | (0.057) | (0.055) | (0.059) | (0.058) | (0.056) | (0.059) |
| RI p-value | 0.00 | 0.03 | 0.06 | 0.06 | 0.66 | 0.33 | 0.16 | 0.50 |
| MHT | 0.00 | 0.09 | 0.12 | 0.12 | 0.35 | 0.28 | 0.17 | 0.35 |
| Behavior change | 0.073 | 0.035 | 0.103* | 0.211*** | 0.051 | 0.135** | 0.162*** | 0.108* |
| Standard error | (0.058) | (0.059) | (0.057) | (0.053) | (0.059) | (0.057) | (0.055) | (0.059) |
| RI p-value | 0.21 | 0.56 | 0.07 | 0.00 | 0.39 | 0.02 | 0.00 | 0.08 |
| MHT | 0.13 | 0.26 | 0.08 | 0.00 | 0.20 | 0.04 | 0.01 | 0.08 |
| Combined | 0.253*** | 0.068 | 0.094 | 0.150*** | -0.023 | 0.150*** | 0.081 | 0.048 |
| Standard error | (0.059) | (0.060) | (0.058) | (0.057) | (0.059) | (0.058) | (0.057) | (0.062) |
| RI p-value | 0.00 | 0.26 | 0.09 | 0.01 | 0.69 | 0.01 | 0.14 | 0.43 |
| MHT | 0.00 | 0.26 | 0.15 | 0.02 | 0.36 | 0.02 | 0.19 | 0.34 |
| EI only = BCI only | | | | | | | | |
| Robust p-value | 0.018 | 0.097 | 0.883 | 0.027 | 0.663 | 0.171 | 0.100 | 0.247 |
| RI p-value | 0.02 | 0.11 | 0.88 | 0.04 | 0.66 | 0.18 | 0.11 | 0.27 |
| MHT | 0.12 | 0.18 | 0.49 | 0.12 | 0.40 | 0.25 | 0.18 | 0.25 |
| EI only = Both | | | | | | | | |
| Robust p-value | 0.462 | 0.278 | 0.758 | 0.352 | 0.405 | 0.106 | 0.948 | 0.909 |
| RI p-value | 0.46 | 0.29 | 0.75 | 0.34 | 0.40 | 0.11 | 0.95 | 0.92 |
| MHT | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| BCI only = Both | | | | | | | | |
| Robust p-value | 0.002 | 0.586 | 0.870 | 0.240 | 0.204 | 0.795 | 0.128 | 0.327 |
| RI p-value | 0.00 | 0.58 | 0.88 | 0.26 | 0.20 | 0.81 | 0.13 | 0.31 |
| MHT | 0.02 | 0.92 | 0.92 | 0.72 | 0.72 | 0.92 | 0.72 | 0.85 |
| Pure control mean | 0.000 | -0.000 | -0.000 | 0.000 | 0.000 | -0.000 | -0.000 | -0.000 |
| Adjusted R-squared | 0.019 | 0.015 | 0.005 | 0.022 | 0.001 | 0.007 | 0.017 | 0.016 |
| Observations | 2243 | 2212 | 2212 | 2301 | 2300 | 2301 | 2301 | 2212 |

Table C3: Mechanisms

| | Cane production (1) | Cane ownership (2) | Cane management (3) | Financial Inclusion (4) | Asset ownership (5) | Marital quality and communication (6) | Perception of gender norms (7) |
|---|---------------------|--------------------------|---------------------------|-------------------------------|---------------------|---------------------------------------|--------------------------------|
| Economic | -0.006 | 1.323*** | 0.420*** | 0.236*** | 0.088 | 0.133** | 0.169*** |
| Standard error | (0.054) | (0.099) | (0.060) | (0.063) | (0.059) | (0.056) | (0.054) |
| RI p-value | 0.91 | 0.00 | 0.00 | 0.00 | 0.18 | 0.01 | 0.00 |
| MHT | 1.00 | 0.00 | 0.00 | 0.00 | 0.88 | 0.31 | 0.06 |
| | | | | | | | |
| Behavior change | 0.045 | 0.189*** | 0.110* | 0.087 | 0.023 | 0.123** | 0.155*** |
| Standard error | (0.055) | (0.071) | (0.059) | (0.061) | (0.058) | (0.057) | (0.054) |
| RI p-value | 0.41 | 0.10 | 0.08 | 0.18 | 0.73 | 0.03 | 0.00 |
| MHT | 0.99 | 0.16 | 0.67 | 0.91 | 1.00 | 0.43 | 0.13 |
| Combined | 0.038 | 1.631*** | 0.518*** | 0.187*** | 0.096 | 0.122** | 0.221*** |
| Standard error | (0.057) | (0.104) | (0.063) | (0.060) | (0.070) | (0.058) | (0.054) |
| RI p-value | 0.51 | 0.00 | 0.00 | 0.00 | 0.13 | 0.02 | 0.00 |
| MHT | 1.00 | 0.00 | 0.00 | 0.06 | 0.91 | 0.48 | 0.00 |
| EI only = BCI only | | | | | | | |
| Robust p-value | 0.327 | 0.000 | 0.000 | 0.023 | 0.265 | 0.850 | 0.769 |
| RI p-value | 0.34 | 0.00 | 0.00 | 0.02 | 0.31 | 0.84 | 0.77 |
| MHT | 0.98 | 0.00 | 0.00 | 0.38 | 0.97 | 1.00 | 1.00 |
| $\overline{\text{EI only} = \text{Both}}$ | | | | | | | |
| Robust p-value | 0.421 | 0.017 | 0.124 | 0.447 | 0.900 | 0.838 | 0.277 |
| RI p-value | 0.42 | 0.01 | 0.12 | 0.43 | 0.88 | 0.85 | 0.30 |
| MHT | 0.99 | 0.30 | 0.87 | 0.99 | 0.99 | 1.00 | 0.98 |
| $\overline{BCI \text{ only} = Both}$ | | | | | | | _ |
| Robust p-value | 0.898 | 0.000 | 0.000 | 0.109 | 0.284 | 0.985 | 0.168 |
| RI p-value | 0.90 | 0.00 | 0.00 | 0.12 | 0.27 | 0.98 | 0.19 |
| MHT | 1.00 | 0.00 | 0.00 | 0.84 | 0.97 | 0.98 | 0.92 |
| Pure control mean | 0.000 | 0.000 | 0.000 | 0.000 | -0.000 | -0.000 | 0.000 |
| Adjusted R-squared | 0.092 | 0.136 | 0.051 | 0.025 | -0.002 | 0.009 | 0.016 |
| Observations | 2301 | 2301 | 2301 | 2300 | 2301 | 2212 | 2301 |

Table C4: Unintended consequences

| | Wife's t | time use | Husband | l's time use | Production of non-cane |
|------------------------------|----------|-----------|----------|--------------|------------------------|
| | Cane (1) | Other (2) | Cane (3) | Other (4) | agriculture (5) |
| Economic intervention | 0.295*** | 0.133** | 0.114* | 0.147** | -0.035 |
| Standard error | (0.063) | (0.057) | (0.063) | (0.061) | (0.047) |
| RI p-value | 0.00 | 0.02 | 0.05 | 0.02 | 0.51 |
| MHT | 0.00 | 0.30 | 0.66 | 0.26 | 0.98 |
| Behavior change intervention | 0.045 | 0.163*** | 0.078 | 0.147** | 0.058 |
| Standard error | (0.059) | (0.060) | (0.058) | (0.058) | (0.056) |
| RI p-value | 0.48 | 0.01 | 0.19 | 0.02 | 0.26 |
| MHT | 0.99 | 0.13 | 0.92 | 0.20 | 0.98 |
| Combined interventions | 0.344*** | 0.086 | 0.091 | 0.205*** | -0.009 |
| Standard error | (0.063) | (0.058) | (0.060) | (0.061) | (0.056) |
| RI p-value | 0.00 | 0.13 | 0.14 | 0.00 | 0.88 |
| MHT | 0.00 | 0.88 | 0.85 | 0.02 | 0.98 |
| EI only = BCI only | | | | | |
| Robust p-value | 0.000 | 0.599 | 0.557 | 1.000 | 0.032 |
| RI p-value | 0.00 | 0.62 | 0.55 | 1.00 | 0.07 |
| MHT | 0.00 | 0.99 | 0.99 | 1.00 | 0.48 |
| EI only = Both | | | | | |
| Robust p-value | 0.455 | 0.399 | 0.727 | 0.358 | 0.559 |
| RI p-value | 0.43 | 0.43 | 0.73 | 0.36 | 0.61 |
| MHT | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| BCI only = Both | | | | | |
| Robust p-value | 0.000 | 0.186 | 0.817 | 0.338 | 0.205 |
| RI p-value | 0.00 | 0.18 | 0.84 | 0.34 | 0.20 |
| MHT | 0.00 | 0.92 | 0.99 | 0.99 | 0.93 |
| Pure control mean | 0.000 | 0.000 | 0.000 | -0.000 | 0.000 |
| Adjusted R-squared | 0.033 | 0.030 | 0.031 | 0.026 | 0.011 |
| Observations | 2301 | 2301 | 2172 | 2172 | 2301 |

Table C5: Impacts on food insecurity

| | Worry about lacking food | Rely on less preferred foods | Limit portion sizes | Reduce meals | Restrict consumpsion so kids can eat | Require food assistance | Food insecurity score |
|----------------------|--------------------------|---------------------------------|---------------------|-----------------|--------------------------------------|-------------------------|-------------------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| Economic | 0.013 | 0.019 | 0.003 | 0.006 | -0.016 | -0.010 | -0.003 |
| Standard error | (0.019) | (0.027) | (0.018) | (0.016) | (0.013) | (0.011) | (0.070) |
| RI p-value | 0.52 | 0.49 | 0.87 | 0.72 | 0.20 | 0.42 | 0.97 |
| MHT | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Behavior change | 0.028 | 0.037 | 0.016 | 0.017 | 0.002 | 0.023* | 0.096 |
| Standard error | (0.020) | (0.027) | (0.019) | (0.016) | (0.014) | (0.013) | (0.071) |
| RI p-value | 0.16 | 0.17 | $0.38^{'}$ | 0.30 | 0.87 | 0.06 | 0.17 |
| MHT | 0.46 | 0.46 | 0.46 | 0.46 | 0.61 | 0.46 | 0.46 |
| Combined | 0.005 | 0.033 | 0.003 | -0.008 | -0.015 | 0.006 | 0.041 |
| Standard error | (0.019) | (0.027) | (0.018) | (0.015) | (0.013) | (0.012) | (0.070) |
| RI p-value | 0.81 | 0.22 | 0.86 | 0.60 | 0.24 | 0.63 | $\stackrel{\backslash}{0.56}$ |
| MHT | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| EI only = BCI only | | | | | | | |
| Robust p-value | 0.427 | 0.514 | 0.483 | 0.505 | 0.148 | 0.007 | 0.158 |
| RI p-value | 0.41 | 0.54 | 0.49 | 0.49 | 0.16 | 0.01 | 0.19 |
| MHT | 0.59 | 0.59 | 0.59 | 0.59 | 0.46 | 0.05 | 0.46 |
| EI only = Both | | | | | | | |
| Robust p-value | 0.688 | 0.606 | 0.994 | 0.350 | 0.908 | 0.158 | 0.514 |
| RI p-value | 0.68 | 0.61 | 1.00 | 0.36 | 0.91 | 0.20 | 0.53 |
| MHT | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| BCI only = Both | | | | | | | |
| Robust p-value | 0.236 | 0.889 | 0.486 | 0.108 | 0.182 | 0.198 | 0.439 |
| RI p-value | 0.22 | 0.88 | 0.49 | 0.11 | 0.18 | 0.15 | 0.44 |
| MHT | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 |
| Pure control mean | 0.116 | 0.283 | 0.106 | 0.072 | 0.056 | 0.042 | 1.795 |
| Adjusted R-squared | 0.012 | 0.015 | 0.012 | 0.001 | 0.001 | 0.008 | 0.012 |
| Observations | 2299 | 2300 | 2300 | 2300 | 2300 | 2300 | 2300 |

Table C6: Impacts on child health investment

| | Health check | Any illness | Diarrhea | Fever | Cough |
|------------------------------|--------------|-------------|----------|---------|---------|
| | (1) | (2) | (3) | (4) | (5) |
| Economic Intervention | -0.009 | 0.021 | -0.012 | 0.041* | 0.002 |
| Standard error | (0.022) | (0.021) | (0.014) | (0.023) | (0.020) |
| RI p-value | 0.70 | 0.38 | 0.40 | 0.10 | 0.93 |
| Behavior change Intervention | -0.046** | 0.001 | -0.002 | 0.005 | -0.005 |
| Standard error | (0.020) | (0.022) | (0.015) | (0.023) | (0.019) |
| RI p-value | 0.05 | 0.95 | 0.89 | 0.83 | 0.83 |
| Combined interventions | -0.013 | -0.031 | -0.012 | 0.002 | -0.026 |
| Standard error | (0.022) | (0.023) | (0.013) | (0.023) | (0.019) |
| RI p-value | 0.56 | 0.20 | 0.40 | 0.92 | 0.20 |
| EI only = BCI only | 0.079 | 0.365 | 0.494 | 0.124 | 0.752 |
| RI p-value | 0.09 | 0.38 | 0.50 | 0.12 | 0.73 |
| EI only = Both | 0.842 | 0.020 | 0.995 | 0.098 | 0.171 |
| RI p-value | 0.84 | 0.02 | 1.00 | 0.10 | 0.16 |
| BCI only = Both | 0.117 | 0.161 | 0.470 | 0.892 | 0.283 |
| RI p-value | 0.14 | 0.16 | 0.49 | 0.91 | 0.29 |
| Pure control mean | 0.178 | 0.634 | 0.127 | 0.448 | 0.186 |
| Adjusted R-squared | 0.020 | 0.016 | 0.002 | 0.012 | 0.015 |
| Observations | 5447 | 5449 | 5444 | 5447 | 5448 |

Table C7: Impacts on educational investment

| | Spending | Currently Enrolled | Enrolled past 2 terms | Ever missed from unpaid fees |
|---|-----------------|------------------------|-----------------------|------------------------------|
| Economic Intervention Standard error RI p-value | (3) | (1) | (2) | (4) |
| | -628.152 | -0.012 | -0.021 | 0.005 |
| | (14794.806) | (0.012) | (0.013) | (0.024) |
| | 0.97 | 0.32 | 0.13 | 0.84 |
| Behavior change Intervention | 6231.117 | 0.001 (0.012) 0.95 | -0.009 | -0.011 |
| Standard error | (15535.535) | | (0.013) | (0.023) |
| RI p-value | 0.69 | | 0.54 | 0.65 |
| Combined interventions Standard error RI p-value | -26003.247* | -0.015 | -0.019 | 0.028 |
| | (15146.163) | (0.012) | (0.013) | (0.025) |
| | 0.10 | 0.23 | 0.18 | 0.24 |
| EI only = BCI only RI p-value | $0.647 \\ 0.66$ | $0.268 \\ 0.28$ | $0.368 \\ 0.38$ | $0.498 \\ 0.53$ |
| EI only = Both | 0.084 | 0.814 | $0.852 \\ 0.84$ | 0.336 |
| RI p-value | 0.12 | 0.82 | | 0.35 |
| BCI only = Both | 0.036 | 0.191 | 0.483 | 0.106 |
| RI p-value | 0.03 | 0.20 | 0.49 | 0.11 |
| Pure control mean Adjusted R-squared Observations | 279312.251 | 0.881 | 0.871 | 0.307 |
| | 0.034 | 0.008 | 0.011 | 0.030 |
| | 10399 | 10402 | 10402 | 9083 |

Table C8: Impacts on husband's life satisfaction

| | Aggregate | | Satisfaction with | | | | |
|----------------------|-----------|--------------|-------------------|-------------------|--------------------|--|--|
| | Index | Life overall | Division of work | Amount of leisure | HH decision-making | | |
| | (1) | (2) | (3) | (4) | (5) | | |
| Economic | 0.155*** | 0.102* | 0.141*** | 0.081 | 0.107** | | |
| Standard error | (0.054) | (0.057) | (0.053) | (0.058) | (0.051) | | |
| RI p-value | 0.00 | 0.06 | 0.01 | 0.14 | 0.02 | | |
| MHT | 0.02 | 0.06 | 0.02 | 0.07 | 0.04 | | |
| Behavior change | 0.189*** | 0.158*** | 0.106* | 0.114** | 0.129*** | | |
| Standard error | (0.056) | (0.057) | (0.056) | (0.056) | (0.049) | | |
| RI p-value | 0.00 | 0.00 | $0.06^{'}$ | $0.04^{'}$ | 0.01 | | |
| MHT | 0.00 | 0.01 | 0.03 | 0.02 | 0.01 | | |
| Combined | 0.095 | 0.100* | 0.057 | 0.065 | 0.042 | | |
| Standard error | (0.059) | (0.058) | (0.060) | (0.057) | (0.056) | | |
| RI p-value | 0.07 | 0.08 | 0.30 | 0.24 | 0.35 | | |
| MHT | 0.36 | 0.36 | 0.36 | 0.36 | 0.37 | | |
| EI only = BCI only | | | | | | | |
| Robust p-value | 0.484 | 0.304 | 0.473 | 0.527 | 0.535 | | |
| RI p-value | 0.51 | 0.32 | 0.53 | 0.52 | 0.62 | | |
| MHT | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | |
| EI only = Both | | | | | | | |
| Robust p-value | 0.252 | 0.964 | 0.111 | 0.771 | 0.151 | | |
| RI p-value | 0.27 | 0.97 | 0.12 | 0.77 | 0.17 | | |
| MHT | 0.61 | 0.73 | 0.61 | 0.73 | 0.61 | | |
| BCI only = Both | | | | | | | |
| Robust p-value | 0.079 | 0.296 | 0.378 | 0.334 | 0.036 | | |
| RI p-value | 0.09 | 0.32 | 0.38 | 0.37 | 0.07 | | |
| MHT | 0.22 | 0.29 | 0.29 | 0.29 | 0.22 | | |
| Pure control mean | -0.000 | 0.000 | 0.000 | 0.000 | 0.000 | | |
| Adjusted R-squared | 0.021 | 0.019 | 0.004 | -0.001 | 0.001 | | |
| Observations | 2174 | 2174 | 2174 | 2174 | 2174 | | |

D Impacts on girls' schooling

Analysis presented in Section 5 reveals a statistically significant reduction in girls' enrollments during the past two school terms as a result of the economic intervention. This is a potential unintended consequence of concern, as increasing women's involvement in commercial agriculture may reduce their available time for care work, which may be passed on to older girl children, thereby reducing their ability to attend school.

We further explore this finding by examining in greater detail what women report about changes in their time use. Results presented in Figure viii reveal that neither intervention significantly shifted the amount of time women report spending on non-cane activities. In Figure D1, we present a more detailed analysis of the components of that index. The non-sugar time use categories include non-sugar agriculture, wage work, business enterprise work, collecting water or firewood, other household management activities, and leisure activities. The most relevant categories for this analysis are collecting water or firewood and other household management activities, as these are the activities most likely to be offset by children. We find no significant change in water/wood collection, but we do find a statistically significant reduction in time spent on other household management activities of 1.8 hours per week (or 6.6% of the mean) as a result of the EI. The point estimates of the effects of the BCI and the combined intervention on this outcome are also negative but are not statistically different from zero. This suggests that there may be scope for the EI to increase girls' household labor.

Because time use recall data can be noisy and error-prone, we also asked women at endline to report their perspectives on how their time use had changed over the past year. We asked: How does the amount of time you spend working on sugarcane compare to one year ago? If the women reported that it had increased, we next asked: When you are devoting more time to sugarcane, what other uses of your time have changed? The most common answer options were: spending less time on household management, less time on other agriculture, less time on other income generating activities, less time for relaxation, personal care, or social time, or less sleep. If either of the first two options were given, we next asked: Is there someone else who is working more on {activity} now that you are spending less time on it? And if yes, we next asked: Who is that person or people? Table D1 presents the means of these responses for the relevant sample and for the full sample. Only 26% of women report spending more time on cane, only 7% (7%) report that they therefore spend less time on housework (other agriculture), and only 3% (2%) report that children are doing more housework (other agriculture) as a result. In total, only 4% of women report that any children are doing either more housework or more other agricultural work as a result of her

doing more work on sugarcane. This suggests that any impacts on girls education must be driven by a very small minority of participants.

Finally, we explore impacts on enrollments during the past two terms, disaggregated by both gender and age of the child. For children aged 5 to 11, we find no significant impacts of any intervention. However, for children aged 12 to 18, we see that the economic intervention reduces the probability of being fully enrolled for both terms among both girls and boys, though it is statistically significant only for girls and the pooled group. The point estimates indicate a reduction of 2.6 percentage points for boys and 4.6 percentage points for girls. These are relatively modest impacts given that the mean in the control group is 85%.

In sum, the evidence supports that the economic intervention may have had an unintended consequence of reducing women's time for household management and thereby reducing school enrollment for girls aged 12 to 18. However, the estimated impact is quite modest relative to the overall level of enrollment for this group.

Making time for cane

.15

.05

Economic intervention Behavior change intervention Combined interventions

• More time on cane

Less time on housework

• Less time on other income generation

+ Less time on social/leisure/personal care

* Less time on sleep

Figure D1: Impacts on time use: 7-day recall diary

Table D1: Impacts on time use: reports of perception

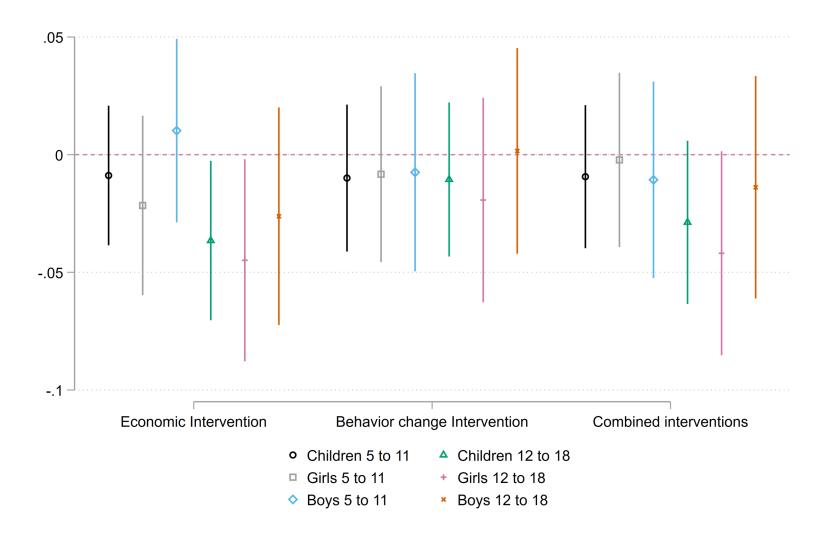
| When devoting more time to sugarcane, | | | | | | |
|---------------------------------------|------------------------------|---|----------------------|-----------------|--|--|
| How does the amour | nt of time you spend working | what other uses of your time have been reduced? | | | | |
| on sugarcane co | ompare to one year ago? | | Conditional on doing | Extrapolated to | | |
| | Full sample | | more cane work | Full sample | | |
| More time | 0.2585 | Household work | 0.295 | 0.076 | | |
| About the same | 0.4402 | Other agriculture | 0.294 | 0.076 | | |
| Less time | 0.3013 | Other income generation | 0.168 | 0.043 | | |
| N | 2240 | Social/relax/personal | 0.565 | 0.146 | | |
| | | Sleep | 0.268 | 0.069 | | |
| | | Other | 0.007 | 0.002 | | |
| | | N | 579 | 2240 | | |

| | Household managemen | ıt | Other agriculture | | |
|-----|--|-----------------------------|---|-----------------------------|--|
| | Conditional on doing more cane work, less household work | Extrapolated to full sample | Conditional on doing more cane work, less other agriculture | Extrapolated to full sample | |
| No | 0.579 | 0.044 | 0.506 | 0.038 | |
| Yes | 0.421 | 0.032 | 0.494 | 0.037 | |
| N | 171 | 2240 | 170 | 2240 | |

Is there someone else doing more now that you are doing less?

| Who is doing mo | re? (multi-select) | | | | |
|-----------------|--|-----------------------------|--|-----------------------------|-----------------------------|
| | Household management | nt | Other agriculture | Total | |
| | Conditional on doing more cane work, less housework, and having someone else do more housework | Extrapolated to full sample | Conditional on doing more cane work, less other agric, and having someone else do more other agric | Extrapolated to full sample | Extrapolated to full sample |
| Children | 0.958 | 0.031 | 0.607 | 0.023 | 0.043 |
| Husband | 0.153 | 0.005 | 0.167 | 0.006 | 0.010 |
| Other HH member | 0.111 | 0.004 | 0.131 | 0.005 | 0.007 |
| Hired help | 0.042 | 0.001 | 0.452 | 0.017 | 0.017 |
| N | 72 | 2240 | 84 | 2240 | 2240 |

Figure D2: Fully enrolled this year: by gender and age



E Intervention Details

E.1 Economic Intervention Details

Household offer script

Hello, my name is ____ and I am visiting you today to discuss a new project run jointly by the World Bank, the International Food Policy Research Institute, and Kakira Sugar Limited (Madhvani) that will encourage the participation of everyone in the household in sugarcane production activities.

Most families that farm sugarcane have contracts in the name of the head of household. However, we know that successful sugarcane production requires the participation of other members of the household as well, including the wives. Therefore we wanted you to be aware that Kakira encourages wives as well as husbands to be involved in sugarcane contracts.

There are many potential benefits of a woman's involvement in sugarcane production and contracting, not only for the woman, but also for her entire household, including her husband. For example,

- 1. Increasing a woman's involvement in cane production will improve her understanding of the processes and allow her to make better contributions, which could increase productivity
- 2. Households where responsibilities are more balanced may be better off financially and happier
- 3. Allowing her to have direct access to income from cane can improve household food security and improve the welfare of children and other household members

Please don't think that we are proposing that a woman should become independent from her husband or no longer care for the home and children. Rather, bringing her into the process of cane farming and contracting can improve her ability to help take care of the family. In doing this, husbands and wives can work better together as a team for achieving a brighter future for themselves and their children.

What do you think of this idea?

FIELD OFFICERS: Take time to discuss their concerns. Employ list of FAQs to address concerns.

We would like to offer you the opportunity to involve your {designated wife} in your sugarcane contracts by either transferring one or more of your registered Kakira blocks to

{designated wife} or registering a new block not currently contracted with in her name.

There is no requirement that all of your blocks be contracted to the same person so you can

transfer or register only the blocks that you wish to. This may be just one block or more

than one. The choice is up to you and your wife.

Transferring a block or newly registering it in the wife's name means that she will be

responsible for the contract. She will be the recipient of any remaining Kakira benefits, such as inputs and payments, and will additionally be the recipient of the final payment upon

harvest of the sugar cane. This also means that she will be responsible for payment of any

debts related to the contract. However, sugarcane production is an activity that is important

for the well-being of the whole family so if it is the case that your wife participates in the

activities on your contracted blocks you should plan to continue participating in activities

on blocks contracted by your wife.

The World Bank, IFPRI, and Kakira hope to learn about the impact of women's par-

ticipation in sugarcane production through this project. Your participation will help us to achieve this goal. If you agree to participate we would like to thank you by offering you a

gift of a solar lamp. This gift will be delivered when the transfer or registration process is

finalized, along with all relevant paperwork.

Do you have any questions about the program?

Field officer: Answer questions using the FAQs

In order to participate both the husband and wife must agree that they would like to

take part. If you both agree, we can fill out the paperwork today and I will take it to Kakira

to begin processing. I will also need to take your wife's picture. You may also want to think it over and discuss it in more detail. If so, I can come back in a few days to answer any

further questions that you might have and complete the paperwork at that time.

Field officer: Refer to flow chart to manage rest of visit.

69

Behavior Change Intervention Details E.2

GALS Change Catalyst Workshop (selected tools) E.2.1







ACTIVITY 1.1 PAIRWISE INTRODUCTION: WHAT



ACTIVITY 1.2 SOULMATE

SOULMATE VISIONING: BASIC STEPS WITH FACILITATION NOTES



ROCKY ROAD TO DIAMOND DREAMS - GALS PHASE 1









STEP 4 PLENARY SHARING (10-25 MINUTES, 2-5 MINUTES PER GROUP)



STEP 5 PLENARY DISCUSSION

SESSION 2 VISION JOURNEY







PART 1 VISION JOURNEY - SESSION 2

AIMS OF THE VISION JOURNEY

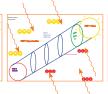


ROCKY ROAD TO DIAMOND DREAMS - GALS PHASE 1 PART 1 VISION JOURNEY - SESSION 2











PART 1 VISION JOURNEY - SESSION 2

ROCKY ROAD TO DIAMOND DREAMS - GALS PHASE 1

SESSION 3 GENDER **ALANCE T**

year after year. If the roots are not equally strong on both sides, then the tree will fall over in the first storm. If the fruits on one side are heavier than on the other, then the also tree

AIMS OF THE GENDER

- AIMS FOR PARTICIPANTS:

 identify who contributes most work to the household:
 women or mer.

 identify who spends most for the household: women or mer
 identify who benefits most from household income:
 women or mer.



PART 1 GENDER BALANCE TREE - SESSION 3

GENDER BALANCE TREE





gyour notebook dany with your final Vision Journey on pages two and three. And a pencil, and black and gree or be facilitation.

Be easy and surk on the Vision-Journey song from the previous day.

Which was the surface of the surfa FACILITATOR PREPARATION MATERIALS/ PREPARED INPUTS

Put up a blank flipphart at the front of the room for interactive presentation of the tool.

Put the Milliams Highway framework on a wall in the half for use in the plensy.

Put the pullipse, included day yead appeal or allow load or all year flowers. With some sharpeness and nubbers.

Per group. I Rightwish just in different corners of the venue and different colorance markers.

The property Milliams have been all degrees and been entirely for group color configuration.

- Pairnise reage on achievements from honework from the previous session and facilitatir inhoduction IO0 minutes!
- interactive presentation of the steps - solidator does not hold be pen - and drawing individual trees (IO minutes!
- individual filling in the cardio commitments in the vision circle on the radio large of the Minitares (IA) minutes!
- shouldcast lifting in the cardio commitments in the vision circles on the IO0 minutes!
- IA-opposition of the radio per service plus produce quantified trees (ID) minutes!
- IA-opposition of IA-oppos

OUTPUTS Individual Gender Balance Tree in notebook diary with five clear action commitments as "green fruits"
 Ouantified gender colour-coded visions and opportunities on the mother Multilane Highway.
 Gender Balance Tree song.

ROCKY ROAD TO DIAMOND DREAMS - GALS PHASE 1 PART 1 GENDER BALANCE TREE - SESSION 3

- inement of your own individual Gender Balance Tree based on the plenary discussion.
 on the immediate change strategies identified and reflect on what works, what does not work, what advice can you share with others, what advice do
- ery need? make the methodology and what you have learned with at least two people in your household, community or group. actise the Gender Balance Tree song. ing your disty and perss (maybe bury a couple more colours?) to the next meeting.

- Analyse the information from the Multilane Highway vision and opportunities and put onto excel sheet for sharing with your colleagues.

 Add to your notes in the margin for future adoptation.

 Consider any issues and changes you wont to make in the next exercise. Empowement Leadership Map.



ROCKY ROAD TO DIAMOND DREAMS - GALS PHASE 1

GENDER BALANCE TREE PARTICIPANT DIARIES: BASIC STEPS





STEP 1: TRUNK: WHO IS IN THE HOUSEHOLD? Draw two lines in the middle of the paper for the

Draw two lines in the middle of tre papers were used to the paper the present the present



STEP 2: ROOTS: WHO CONTRIBUTES WHAT WORK? A Draw two roots for women and two roots for men or

PART 1 GENDER BALANCE TREE - SESSION 3

1000













ROCKY ROAD TO DIAMOND DREAMS - GALS PHASE 1

PART 1 GENDER BALANCE TREE - SESSION 3

SESSION 2 EMPOWERMENT EADERSHIP MA

UNDERLYING NARRATIVE: LEADERSHIP FOR EMPOWERMENT THROUGH PYRAMID PEER Building the strength to move towards our vision begins with ourselves and those close to us. Families, friendships and communities can be important sources of support but can also challenge us in moving forward. Isolation, disunity and personal suffering within the family and community are causes of unhappiness and poverty which most women and men can start to change themselves. Building better friendships, working together with co-wives, stopping hurtful gossip, curbing our own anger, and helping our friends to stop drinking and ruining their lives will make our lives happier.

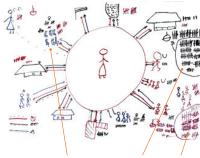


AIMS OF THE EMPOWERMENT

PART 1 TAKING GALS BACK HOME - SESSION 4

UMS FOR PARTICIPANTS

- IMS FOR ORGANISATIONS
 deepen understanding of different household
 compositions from the Gender Balance Tree relations
 between co-wives, within joint families, relations with
 natal families and power relations between men within



MATERIALS/ PREPARED INPUTS Oscussion in pairs, recapitulation of steps in the Gender Balance Free, sharing the tool and GRI song [15 minutes]. Performance of the Gender Balance Free song for everyone to remember [20 minutes] introduction to the Empowerment Leadership Map activity IS minutes] introduction to the Empowerment Leadership Map activity IS minutes; introduction to the Empowerment Leadership Map activity IS minutes; introduction to the Empowerment Leadership Map activity IS minutes in Introduction and Individual mapping - a personal and control of the Manufacture of the TIMING HOMEWORK FOI FACILITATOR 3 HOURS

ROCKY ROAD TO DIAMOND DREAMS - GALS PHASE 1

EMPOWERMENT LEADERSHIP MAP PARTICIPANT DIARIES: BASIC STEPS





STEP 1 WHO AM I?
First draw yourself in the centre of the sheet of paper. Are you happy or sad, confident or frightened, healthy or sick, educated or not, never had the opportunity to attend school, what work do you do?



STEP 2 WHO IS IMPORTANT IN NY LIFE?

Then daw around you the different people and institutions who are limportant in your life working outwards from the centre, putting those who are most important of losses to be a centre. The putting those who are most important closes to be a centre of the putting those who are most important closes to be a centre of the putting the puttin







PART 1 TAKING GALS BACK HOME - SESSION 4

Remember when you share with someone, you should ask them to share with others. Ss you visit them you should track their sharing also on your map.

ROCKY ROAD TO DIAMOND DREAMS - GALS PHASE 1 PART 1 TAKING GALS BACK HOME - SESSION 4



INDIVIDUAL ANALYSIS PARTICIPANTS DIARIES STEPS 1-5

ROCKY ROAD TO DIAMOND DREAMS - GALS PHASE 1





1 HOUR



so they should have any questions ready.

Ask if they can meet to write a song for the Empowerment Leadership Map to add to the other songs ready for the

PART 1 TAKING GALS BACK HOME - SESSION 4

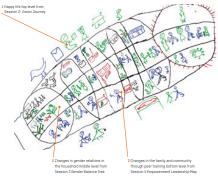
SESSION 6 MULTILANE HIGHWAY **ACTION PLAN**



PART 1 MULTILANE HIGHWAY ACTION PLAN - SESSION 6

FACILITATOR PREPARATION

ACTIVITY 6.1 THE MULTILANE HIGHWAY VISION JOURNEY TILL THE FIRST PARTICIPATORY GENDER REVIEW



ROCKY ROAD TO DIAMOND DREAMS - GALS PHASE 1

ACTIVITY 6.2 PREPARATION ACTIVITY 6.3 CLOSING FOR THE COMMUNITY WORKSHOPS THE FOLLOWING WEEK

SONGS AND REMARKS



PART 1 MULTILANE HIGHWAY ACTION PLAN - SESSION 6

E.2.2 Family Vision Workshop

We summarize here some key differences between the Family Vision Workshop (FVW) implemented as part of this study and traditional GALS Change Catalyst Workshop (CCW), described above. This is taken directly from what was shared by the principle investigators with the implementing partner, Oxfam.

Objectives The ultimate aim of the FVW is to open the minds of men to the possibility that it may benefit them and their household for their wives to have greater participation in the sales of sugarcane and the decision-making regarding use of the profits. Another aim is to empower women to feel capable of contracting directly with the sugar company and to exert their preferences alongside their husbands in terms of how the profits should be used. As with traditional GALS, these aims should not be overtly stated but should be accomplished indirectly, by working toward the FVW's stated aims, which will be the same as for the GALS CCW (see box).

AIMS OF THE CCW

The aim of this capacity-building is for all participants, women and men, to:

- be inspired by the possibilities of moving forward to achieve a vision;
- have analysed for themselves the negative consequences of gender inequality for their ability to achieve this vision;
- realise that they can also help other people to change through sharing what they have learned;
- be convinced of the benefits of keeping their diaries, tracking their progress and that of those they hope to help or change;
- come away with a clear change plan in A4 diaries with trackable action steps from day one;
- · be singing and enjoying their new-found freedom.

Participation Participation in the FVW will be based on assignment by the study team according to specific protocols that will allow us to analyze impact. It is very important that the households mobilized by our staff are the beneficiaries of the FVW. In each selected household we will aim to have both the husband and (at least one) wife participate.

Dissemination The FVW is intended as a one-time workshop to spark change within the participating households. At this stage, we are not planning to conduct the other GALS activities, such as Phase 1 parts 2 & 3 (community action learning & participatory gender reviews) or later phase activities, as discussed above. Therefore significantly less workshop

time will be dedicated to preparing participants to disseminate what they have learned. While we recognize that community dissemination may be beneficial, it is not the focus of this study and we must use the limited workshop time carefully to achieve the FVW aims.

Family Vision Workshop Tools As noted above, the FVW will make use of existing GALS CCW tools, with the exception of the "taking GALS home" tools that focus on dissemination.

Day 1

CCW Session 1: Pairwise Introductions & Soulmate Visioning

CCW Session 2: Vision Journey

Day 2

CCW Session 3: Gender Balance Tree

*additional activity this day related to men's and women's roles in sugarcane production, marketing, sales, and use of profits.

Day 3

CCW Session 4 Empowerment Leadership Map

CCW Session 6 Multi-lane Highway Action plan (6.1 and 6.3 only)

E.2.3 Anecdotal reports from workshop implementers

- 1. "Mrs. Ngobi Salima aged 28 from St. John Church of Uganda said its waste of time and hard to think and believe that men will accept to plan and take joint decision with their women. Since I got married to my husband I have never known how much he earns she said, while her fellow women cheered her up in chorus. When participants were sent for group work to come up with the household Vision Road is when she came back laughing and smiling and took to testify that GALS is like a witch craft because for the first time in her life since marriage the husband has unconditionally revealed how much he earns in a month. I am happy to know, I use to think his salary was very big she said."
- 2. "One participant called Mr. Kakaire from Kagalagala mosque primary school training Centre put a spirited fight to convince his fellow men that according to Basoga culture women do not own land because they can go anytime. Many of his collogues (sic) opposed it and challenged him openly and called on him to change his attitude. After the three days training, he said he is going to organize a clan meeting to attempt to put this idea to them because he wants to have joint land agreement with the wife."

- 3. "Mr. Yona Dauson at Namangiri training Centre said women cannot be trusted with valuable assets like land because they are not permanent citizens, they are always on move. That is why they are called "Abakyala." But on the second day of the training, after introducing Gender Balance tree, he was convinced beyond doubt that it's important to share domestic work load as well as management of Assets."
- 4. "Mr. Woire Patrick said as a result of Gender balance tree: since I was born and got married I must confess I have never helped my wife Naigaga on caregivers work, but this morning before coming for the training I prepared breakfast for the family. That brought a lot of surprises to the children and I promise to continue with my work to help unite my family."