Endline Report of the Resilience Food Security Activity Graduating to Resilience in Uganda, Cohort 1

Technical and Operational Performance Support (TOPS) Uganda Graduation Randomized Control Trial Associate Award

October 2022

The Technical and Operational Performance Support (TOPS) Uganda Graduation Randomized Control Trial (RCT) Associate Award works to measure the cost-effectiveness of different variations of graduation programming for refugees and host communities in Uganda, as part of the United States Agency for International Development (USAID) Bureau for a Humanitarian Assistance (BHA)-funded Pilot Resilience Food Security Activity (RFSA) there. This information will help the food security community of practice and USAID to design projects and modify existing projects in ways that bolster performance, efficiency, and effectiveness. The TOPS Uganda Graduation RCT Associate Award is a seven-year activity (2017–2023) implemented by Save the Children (lead) and Innovations for Poverty Action.

Disclaimer:

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Contact:

Save the Children
899 North Capitol St NE, Suite 900
Washington, DC 20002
IMPEL@savechildren.org
www.fsnnetwork.org

Prepared By:

ipa
INNOVATIONS FOR POVERTY ACTION

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Abbreviations and Acronyms

BHA	USAID Bureau for Humanitarian Assistance
CBT	Community-Based Trainers
CGAP	Consultive Group to Assist Poor
FCS	Food Consumption Score
FFBS	Farmer Field Business Schools
HAZ	height-for-age Z-score
HDDS	household dietary diversity score
HFIAS	Household Food Insecurity Access Scale
HH	household
IGA	income-generating activity
IPA	Innovations for Poverty Action
NGO	nongovernmental organization
OPM	Office of the Prime Minister
PPP	purchasing power parity
RCT	randomized control trial
RFSA	Resilience Food Security Activity
SCORE	Sustainable Comprehensive Responses for Vulnerable Children and their Families
SD	standard deviation
SPM	selection, planning, and management
TC	Town Council
UGX	Ugandan Shilling
USAID	U.S. Agency for International Development
USD	United States dollar(s)
VSLA	village savings and loans association
WASH	water, sanitation, and hygiene

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This report was written by Antoine Guilhin, Jan Will, Gabriel Olila, Lasse Brune, Nathanael Goldberg, and Doug Parkerson.

Executive Summary

In 2017, the United States Agency for International Development (USAID) awarded the implementation of a Resilience Food Security Activity (RFSA) in Kamwenge District, Uganda, to the AVSI Foundation (AVSI).

As part of the RFSA, AVSI was tasked with adapting a graduation program to improve food security, nutrition, self-reliance, and resilience among extremely poor refugee and host households in Rwamwanja Refugee Settlement and in the surrounding host community of Kamwenge District.

The Graduation Approach is a multifaceted model combining livelihood promotion, financial inclusion, social empowerment, and social protection components. It is designed to address the needs of extremely poor households and to equip recipients with protection processes, such as sustainable livelihoods, improved savings, and household dynamics, by building skills and confidence. The initiative seeks to ensure households are able to meet their basic needs, as well as build an asset base to diversify income, protect themselves from shocks, and sustain well-being. The approach typically consists of six components:[1]

The type of numbered list used may depend on the type of document, but default to:

1. **Consumption support**: to stabilize incomes and enable households to focus on skills training to build or expand livelihoods, as well as prevent consumption of productive assets.
2. **Productive asset transfer**: in-kind (for instance, livestock) or cash that can be for any small-scale income-generating activity.
3. **Technical training**: covering improved agronomic and animal husbandry technical skills, financial literacy, enterprise selection planning and management, climate risk management, and bank linkages.
4. **Coaching**: the relationship between a coach and participant consisting of regular visits and support sessions (generally weekly, bi-weekly, or monthly) over a 30-month period to support households set realistic goals, monitor households' progress, reinforce lessons, help solve problems as they arise, and link/refer participants to needed services.
5. **Access to savings**: to create a secure place to save resources and access financial capital to grow businesses and meet household current and future needs.
6. **Referrals and linkages to critical services**: this can include basic information on sanitation and nutrition, nutrition referral and management, public and private sector linkages like extension services, group registration, financial services, and access to inputs.

Together with a consortium including Trickle Up and IMPAQ International,[2] AVSI adapted the six graduation components to the context of Kamwenge. The activity they designed was named Graduating to Resilience. Innovations for Poverty Action (IPA) was selected to evaluate the

[1] See a description of the six components of the Graduation Approach: https://www.avsi.org/en/news/2019/01/10/g2r-activity-update-2-graduation-approach/1729/

[2] Now called the American Institutes for Research

activity using a randomized controlled trial (RCT) to measure the impact and cost-effectiveness of different variations of graduation programming for refugees and host communities.

The study was designed to test the relative performance and cost-effectiveness of three activity variations. Households in treatment arm "T1" were coached individually and received a cash asset transfer. Households in treatment arm "T2" were coached in groups and received a cash asset transfer. Households in treatment arm "T3" were coached individually but did not receive a cash asset transfer. Both T2 and T3 were variations chosen to identify lower-cost, more cost-effective versions of the standard version, which is T1. To estimate the impact of each of the three intervention arms, households were compared to a control group in control villages ("Pure Control"). Furthermore, some households in treatment villages were randomized into a "Spillover Control" group. These households were not offered participation in any of the interventions. Since other households in the same villages were participating in the activity, this allows a comparison of "Spillover Control" households to "Pure Control" households to measure the aggregate spillovers from the three treatment arms to other households in the same villages.

Table 1. Activity components by treatment arm

Activity Component	T1: Standard Graduation	T2: Group Coaching	T3: Empowerment Model
Consumption support*	●	●	●
Livelihood skills training and support	●	●	●
Savings and financial inclusion	●	●	●
Cash asset Transfer ($300)	●	●	
Coaching	Individual	Group	Individual
Linkages and referrals	●	●	●

**$4 (host) / $5 (refugee) per household member per month for 12 months*

Between August 2018 and November 2018, IPA conducted a baseline survey to assess the status of key indicators[3] among participating households, gain a better understanding of prevailing conditions and perceptions of the study population, and guide the randomization of households into the three intervention variations and control groups.

Approximately 30 months later, between April and October 2021, IPA conducted an endline survey. The goal was to collect information on study households to assess the impact of the activity 18 months after the end of the monthly cash consumption support and 24 months after the asset cash transfer.

[3] Baseline key indicators included indicators on assets, income, consumption, food security, well-being, and anthropometric measurements.

Coaching sessions ended during the endline data collection in June 2021. The endline survey measured household consumption, food security, asset ownership, income, subjective well-being, and other outcomes to compare against baseline results.

The target sample was composed of 11,145 households that were interviewed during the baseline survey and randomly assigned to one of three treatment arms, the Spillover Control group or the Pure Control group. During endline data collection, IPA enumerators were able to complete interviews for 94% of the sample (10,514 households), with completion rates balanced across experimental groups.

The main findings on key outcomes of interest are as follows:

- There was a large positive impact of the activity on several key outcomes. T1 (individual coaching and asset) and T2 (group coaching and asset) have the largest impact, but T3 (individual coaching and no asset) still has a large impact on the different outcomes. No major differences were observed between those who received individual versus group coaching (T1 and T2).
- The average value of productive assets was between purchasing power parity (PPP) $819 (T3) and PPP $1,105 (T1) among households assigned to the treatment groups, which is larger than the average of PPP $585 among households in the Pure Control group.
- The average monthly income for households assigned to the treatment groups was between PPP $124 (T3) and PPP $136 (T1), which is larger than the average PPP of $94 among households in the Pure Control group.
- The average monthly consumption per capita of the households assigned to the treatment groups was between PPP $111 (T3) and PPP $118 (T1), which is larger than the average PPP of $94 among households in the Pure Control group.
- Food security also increased among all treatment groups, with households scoring on average 0.51 (T3) to 0.63 (T1) standard deviations (SD) higher on a composite food security index than Pure Control households (for which the mean was normalized to zero). The index includes the Food Consumption Score (FCS), the Household Food Insecurity Access Scale (HFIAS), and the households' average length/height-for-age z-score (HAZ) for children under 5 years. The increase in the index was driven by the increase in the FCS and HFIAS. The percentage of households deemed as "Acceptable" according to the FCS was between 92% (T3) and 94% (T1) among households assigned to the treatment groups, compared to households assigned to the Pure Control group, for which this value was 87%. The percentage of households deemed as "Food Secure" according to the HFIAS was between 29% (T3) and 38% (T1) among households assigned to the treatment groups, compared to households assigned to the Pure Control group, for which this value was 12%. There was no difference between treatment and control groups in terms of HAZ for children under 5.
- Target participants' subjective well-being increased in households assigned to the treatment groups, which had an average that was between 0.44 (T3) to 0.62 (T1) SDs higher on a composite well-being index than Pure Control households (among which the mean was normalized to zero). The index includes the Kessler 6 mental health scale (from 0 to 24; higher = worse) and a life satisfaction question (on an increasing scale from 1 to 10). The average Kessler 6 score in households assigned to the treatment groups was between 5.3

(T3) and 4.8 (T1), compared to households assigned to the Pure Control group, which averaged 5.9. The average life satisfaction score of households assigned to the treatment groups was between 4.6 (T3) and 5.0 (T1), compared to households assigned to the Pure Control group, which averaged 3.4.

- There were sizable—albeit less precisely estimated—spillover effects of the activity on consumption levels and food security of households who were eligible but not assigned to treatment and who resided in treatment villages. Spillover magnitudes are between 25% (as a share of T1's treatment effect estimate) and 36% (as a share of T3's treatment effect estimate) of the direct treatment effects for consumption and 13% (as a share of T1's treatment effect estimate) to 16% (as a share of T3's treatment effect estimate) for a composite food security index. There was no sign of sizable spillover effects on measures of economic activity, such as productive assets and income, suggesting that spillovers on consumption and food security may be operating via informal community insurance against shocks rather than a broader effect on aggregate economic activity in the intervention villages.
- Treatment effects are larger for hosts than for refugees (especially for asset holdings), except for consumption, where the effects are similar for the two sample populations. The effect on livestock holdings is larger in the host sample in absolute terms but higher in the refugee sample relative to the respective Pure Control means. Before the intervention, hosts were slightly better off than refugees, owning more productive assets and larger land.

The results from the endline survey demonstrate that households assigned to treatment groups fared better than households assigned to the Pure Control group in key economic outcomes, such as accumulation of productive assets, income, consumption, food security, and subjective well-being. Individual and group coaching have similar impact results. Households assigned to the asset transfer arms (T1 and T2) were better off than households assigned to the no-asset arm (T3).

The group coaching arm (T2) has similar impacts to T1 in each of these metrics, but 13% lower costs and therefore performs best in the cost-benefit analysis. T3 (no asset) performs worse than T1 and T2 and has a negative return on investment under reasonable assumptions about the persistence of effects. Based on these findings, the group-coaching version of the activity appears to be the "best buy" among the Graduating to Resilience implementation approaches.

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1. Context of the Graduating to Resilience Activity in Uganda

1.1. Introduction to the Graduation Approach

Social protection programs are an important poverty reduction tool that governments can implement to sustainably lift vulnerable households out of poverty by increasing their income and providing them with a safety net. The "graduation from ultra-poverty" approach was pioneered by the Bangladeshi non-governmental organization (NGO) BRAC in the early 2000s. It aims to help people move out of poverty by addressing all the poverty challenges through a multifaceted intervention. Economic inclusion programs in 75 countries have reached 90 million beneficiaries as of 2021.[4]

The Graduation Approach is a set of services for targeted extremely poor households, designed to help recipients build new livelihoods while building skills and confidence, along with an asset base to diversify income, protect themselves from shocks, and sustain well-being. The approach typically consists of six components:

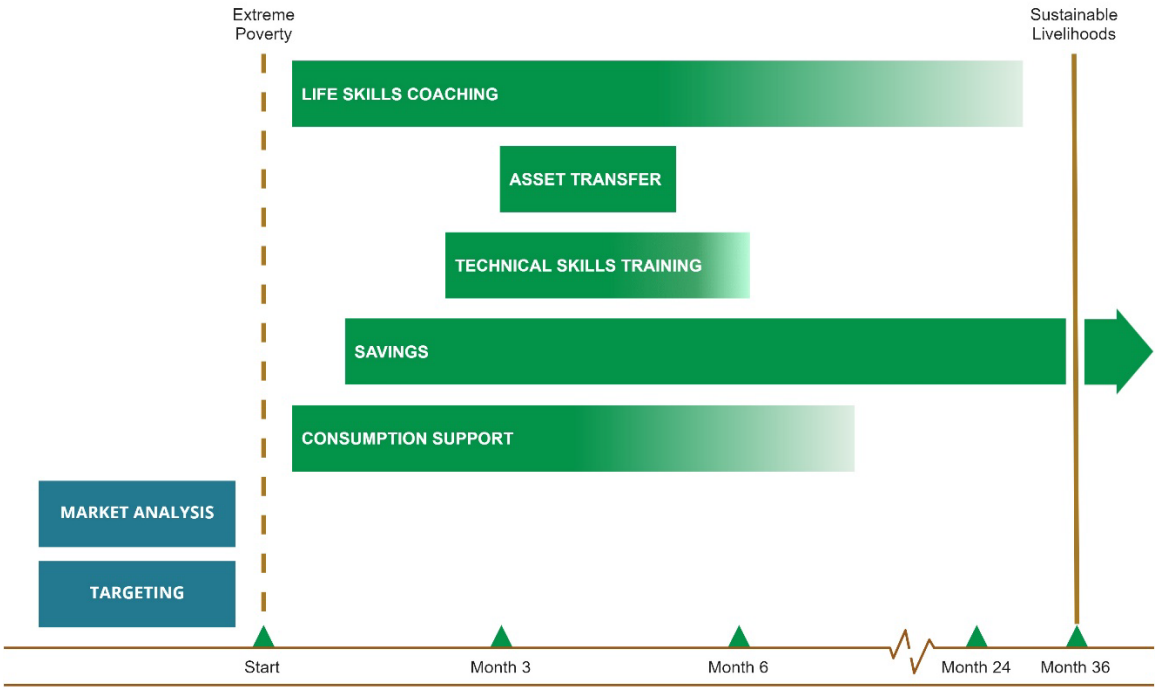
1. **Consumption support**: to stabilize incomes and enable households to focus on skills training to build or expand livelihoods, as well as prevent consumption of productive assets.
2. **Productive asset transfer**: in-kind (for instance, livestock) or cash that can be for any small-scale income-generating activity (IGA).
3. **Technical training**: covering improved agronomic and animal husbandry technical skills, financial literacy, enterprise selection planning and management, climate risk management, and bank linkages.
4. **Coaching**: the ongoing relationship between a coach and participant consisting of regular visits and support sessions (generally weekly, bi-weekly, or monthly) over a 30-month period to support households set realistic goals, monitor households' progress, reinforce lessons, help solve problems as they arise, and link/refer participants to needed services.
5. **Access to savings**: to create a secure place to save resources and access financial capital to grow businesses.
6. **Referrals and linkages to health services**: this can include basic information on sanitation and nutrition, nutrition referral and management, public and private sector linkages like extension services, group registration, financial services, and access to inputs.

Randomized control trial (RCT) evaluations of the Graduation Approach in six countries showed positive impacts on all ten key outcomes after 2 years, including income and consumption, assets and savings, food security, physical health, mental health, and women's empowerment.

[4] Andrews, Colin; de Montesquiou, Aude; Arevalo Sanchez, Ines; Dutta, Puja Vasudeva; Paul, Boban Varghese; Samaranayake, Sadna; Heisey, Janet; Clay, Timothy; Chaudhary, Sarang. 2021. The State of Economic Inclusion Report 2021: The Potential to Scale. Washington, DC: World Bank.

After 3 years (a full year after the activity concluded), most of the impacts were sustained, with the exception of physical health and women's empowerment.[5] Related research showed strong gains after 7 years in Bangladesh and after 10 years in India.[6,7]

Figure 1. Illustration of the Graduation Approach



Source: Consultative Group to Assist Poor (CGAP)[8]

1.1.1. Cost-Effectiveness

Graduation programs are relatively expensive because of the multifaceted services they provide and can range from $358 United States Dollar (USD) per household in India to $2,697 USD per household in Peru, but they are cost-effective models to reach the extreme poor. The benefits for the participants—the consumption increase generated by the program along with increases in household assets—are greater than the cost of the program. Experiments in six countries showed positive returns, ranging from 133% in Ghana to 433% in India. In other words, for every

[5] Banerjee, Abhijit, et al. "A multifaceted program causes lasting progress for the very poor: Evidence from six countries." Science 348.6236 (2015): 1260799.

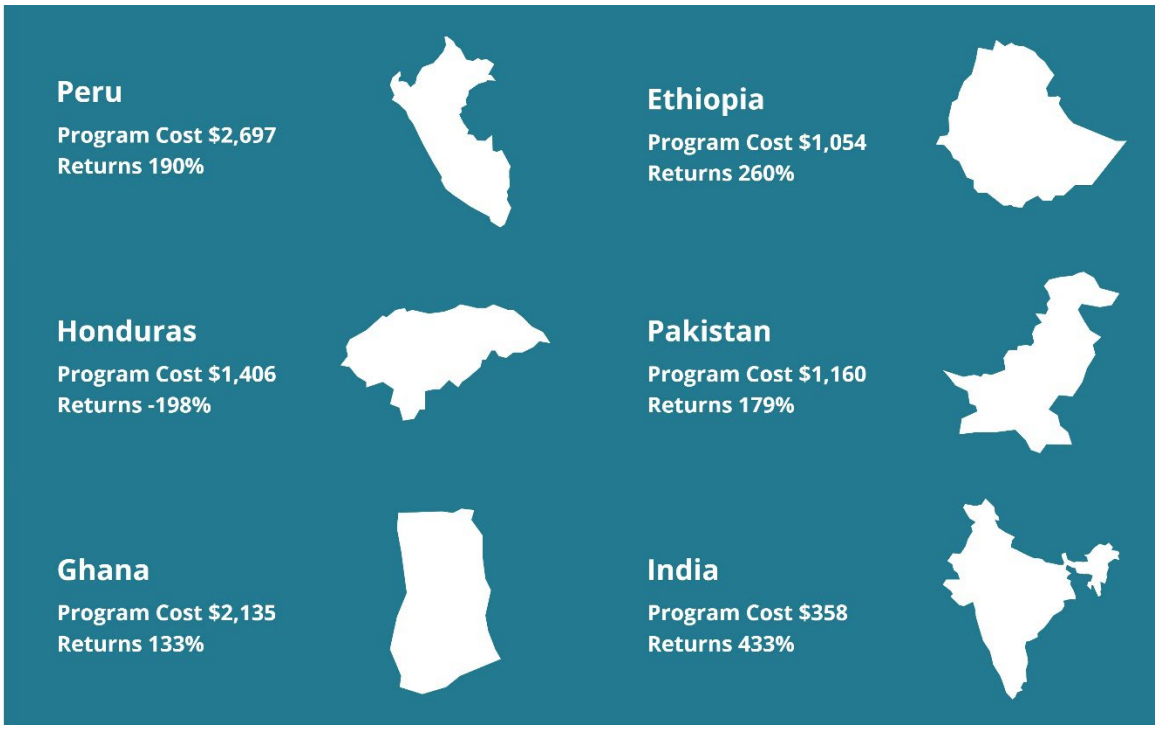
[6] Bandiera, Oriana, et al. "Labor markets and poverty in village economies." The Quarterly Journal of Economics 132.2 (2017): 811-870.

[7] Banerjee, Abhijit, Esther Duflo, and Garima Sharma. "Long-term effects of the targeting the ultra-poor program." American Economic Review: Insights 3.4 (2021): 471–86.

[8] https://www.cgap.org/blog/how-make-graduation-approach-work-refugees

dollar spent on the program in India, ultra-poor households had $4.33 USD in long-term benefits in terms of consumption and household assets.[9]

Figure 2. Graduation programs' cost and returns per participating household in six countries



Source: IPA

Cost data from previous pilots[10] suggests that despite the positive return on investment, graduation programs remain too expensive for most governments or NGOs to implement at scale. To calculate total program costs, the authors added direct-transfer costs, management costs, start-up expenses, and overhead. They defined benefits as the increase in total consumption and household assets and returns as total benefits as a percentage of the total program cost. Graduation performed well by this standard in all countries except Honduras,[11] with some sites producing gains far greater than the amount invested.

1.2. Setting in Uganda and Implementing Partner

In 2017, the United States Agency for International Development (USAID)'s Bureau for Humanitarian Assistance (BHA) issued an award to the AVSI Foundation (AVSI) to implement a Resilience Food Security Activity (RFSA) in Kamwenge District (in green in Figure 3), Uganda. AVSI, an International NGO that has operated in Uganda since the early 1980s, works together

[9] https://www.poverty-action.org/impact/ultra-poor-graduation-model

[10] Banerjee, et al. 2015, https://www.science.org/doi/epdf/10.1126/science.1260799;

Bandiera, et al. 2016 (Bangladesh), https://sticerd.lse.ac.uk/dps/eopp/eopp43.pdf

[11] The program in Honduras faced an overall loss of productive assets (chickens) because they died in large numbers.

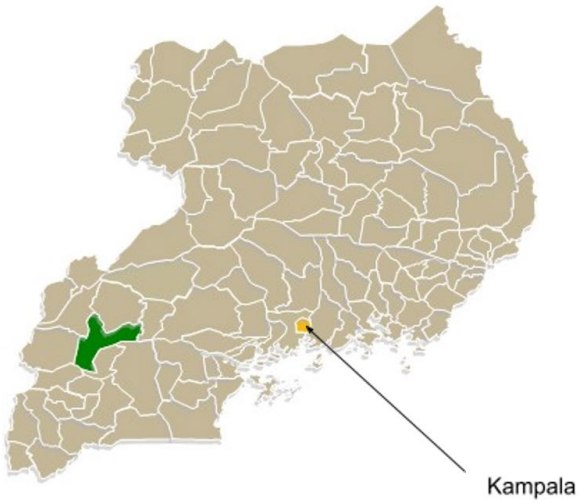
with a consortium including Trickle Up and AIR. Kamwenge District is in southwestern Uganda and hosts the Rwamwanja Refugee Settlement. This settlement is home to approximately 85,000[12] refugees, predominantly Congolese, most of whom arrived in or after 2012. The surrounding non-refugee Ugandan population also faces significant development challenges and remains food insecure—up to two-thirds of the population in the Mid-Western sub-region experiences some level of food insecurity.

Reducing this burden requires enabling the poorest families to shift from insecure sources of income to more sustainable IGAs. One avenue is to promote self-employment activities and a holistic set of services, including the grant of a productive asset, to the poorest households in a village. These different activities, as well as regular interactions with the households over the course of 30 months, are designed to complement each other in helping households to start a productive and sustainable self-employment activity. The idea is to provide a "big push" over a limited period, with the hope of unlocking a poverty trap, according to the results of the Graduation Approach in other contexts.

AVSI was tasked with adapting the six graduation components to the context. The goal of the activity is to graduate extremely poor refugee and Ugandan households from conditions of food insecurity and fragile livelihoods towards self-reliance and resilience.

Under the Implementer-Led Evaluation and Learning (IMPEL) Associate Award, Innovations for Poverty Action (IPA) was selected to evaluate the Graduating to Resilience RFSAusing an RCT to measure the cost-effectiveness of different variations of graduation programming for refugees and host communities. Between April and December 2021, IPA conducted an endline survey to measure the impact of variants of the Graduating to Resilience activity by comparing households in three treatment arms to the control group.

Figure 3. Map of the evaluation research on Graduating to Resilience, Uganda 2018[13]



[12] See UNHCR data on refugees in Uganda, https://data2.unhcr.org/en/country/uga; visited on April 7, 2022

[13] Graduating to Resilience is located in the northern part of Kamwenge district in this 2018 map of Uganda's political districts. Kamwenge district boundaries were redrawn in in 2019, but the activity is still located within the new boundaries of the district.

1.3. Activity Eligibility and Targeting Process

The study area includes the entire Rwamwanja Refugee Settlement as well as four sub-counties and three town councils (TC) contiguous to the settlement for the host community. These sub-counties and town councils were Nkoma, Biguli, Bihanga, Bwizi, Nkoma Katalyeba TC, Biguli TC, and Lyakahungu TC.

Between June and August 2018, AVSI conducted an eligibility verification exercise to identify extremely poor households in each village. AVSI's targeting exercise utilized the Participatory Rural Appraisal techniques of social mapping (quantitative questionnaire using a scorecard) and poverty wealth ranking ("bucketing").[14]

AVSI conducted a social mapping exercise and household scorecard to validate the administrative household list and quantitatively assess the poverty level of each household using contextualized proxy indicators. AVSI followed this up with the wealth ranking, which involved community members defining the wealth categories of extremely poor, poor, moderate, and rich as a group and placing the names of each household head in the wealth category the community felt was appropriate. AVSI reached 35,204 households during the exercise and identified 25,104 households to be eligible to benefit from the activity—defined as households that were extremely poor or poor with a woman or youth (between 18 and 30 years old) who are economically active or can be made economically active. AVSI excluded 10,064 households that did not qualify for the activity. AVSI provided the final list of eligible households in both target communities to IPA.

1.4. Components of the Intervention

The Graduating to Resilience RFSA included multiple components to address the various constraints that extremely poor households face. The form and content of the graduation elements were based in part on Trickle Up's experience adapting the Graduation Approach for people affected by displacement and AVSI's previous Sustainable Comprehensive Responses for Vulnerable Children and their Families (SCORE) project. This section describes the main components and their purpose.

1.4.1. Consumption Support

The consumption support component consisted of monthly cash transfers provided to households from AVSI for 12 months. This element aimed to stabilize incomes and enable households to focus on training to develop new livelihoods and prevent the consumption of productive assets. The consumption support was calibrated around the consumption of food to ensure basic food and dietary needs were met. These cash transfers started in February 2019 at the beginning of the RFSA, and ended 12 months later in February 2020. The amounts given differed slightly between refugee and host communities to account for differences in food gaps. The food gap is the amount of money that a household needs to meet its minimum food needs

[14] See description of AVSI Participatory Rural Appraisal https://avsi-usa.org/participatory-rural-appraisal/

per month. Each refugee household received Ugandan Shilling (UGX) 18,000 (about purchasing power parity (PPP) $14 or $5 USD) per household member per month, and each household in the host community received UGX 15,000 (about PPP $12 or $4 USD) per household member per month. As consumption support was transferred using mobile money, those amounts were topped up with the expected withdrawal fees.

1.4.2. Asset Transfer

Graduation programs have traditionally provided income-generating assets to households, most often livestock. The RFSA gave out a one-time cash transfer to allow participants to choose the type of assets to acquire/enterprise to engage in. The purpose of the transfer was to provide financial capital for any small-scale IGA, whether on-farm or off-farm. AVSI trained and supported households in developing their business plan to detail how they would use the cash. The RFSA community-based trainers (CBTs) trained participants in the selection, planning, and management (SPM) of IGAs to raise key facets of beginning a business before this process. Each household in T1 and T2 received a single transfer of UGX 1,100,000 (about PPP $840 or $300 USD) in July/August 2019. This was about 7 months after the beginning of the project, after participants had begun attending coaching, received core and technical skills training, and started their Village Savings and Loan Association (VSLA) activities.

1.4.3. Coaching Sessions: Group or Individual

Respondents in the treatment arm with group coaching (T2) sessions met weekly for 2 hours. The sessions consisted of 25 participants per group on average. During the COVID-19 pandemic, the sessions were carried out remotely via conference calls of five people in the later stages of the intervention; this was after the RFSA had delivered all structured topics at least once previously. The 1-hour individual coaching sessions were carried out at participants' homes and started with weekly meetings but were reduced to one fortnightly meeting per respondent in June 2019 because the RFSA realized that participants were overly stretched and could not keep up with a weekly pace. Similarly, during the COVID-19 pandemic, individual coaching was conducted remotely via phone calls. Both types of sessions continued for the duration of the activity, from February 2019 to June 2021. A structured group and individual coaching curriculum guided all coaching activities. Alongside coaching activities, nutrition screening was conducted, and children found to be malnourished were referred to Village Health Teams, which made health facility referrals for management. During the COVID-19 pandemic, the RFSA utilized the Ministry of Health family mid-upper arm circumference approach and trained caregivers to monitor their children’s nutrition status directly with technical support from a coach observing the standard operating procedures.

1.4.4. Village Savings and Loan Associations

The purpose of the VSLA component was to create a secure place to save income and access low-interest loans. Every week, the participants had a VSLA meeting facilitated by a CBT. Weekly, VSLA members saved, took loans, and contributed to a self-insurance (welfare) fund.

The AVSI programming guide provides the following details about VSLAs:

- On savings: "The minimum saving amount, set by the group, is usually 500 to 2,000 shillings."
- On loans: "After a few months of building up the level of savings, the group is able to make loans. Loan sizes typically range from 20,000 to 100,000 shillings and are payable in 4 weeks to 12 weeks. Those applying to borrow are questioned by other group members to judge whether they are investing wisely. The interest rates that the members pay on loans are set by the group. Rates as high as 10% per month are sometimes set, but members benefit from the high returns on their savings."
- About the welfare fund: "Groups also have a social welfare fund that the members contribute to; this is used to cope with shocks such as death and illness. The fund is effectively a self-insurance scheme."

The programming guide also indicates that a key element of VSLA groups is self-selection. In this case, however, because of the RCT design, the VSLA group was the same as the intervention group, and therefore, in the context of this specific RFSA, the composition of the VSLA groups was imposed on the participants. At the end of the cohort, participants were encouraged to continue carrying on the VSLA's activities. Some groups removed a few unproductive members from their groups.

1.4.5. Livelihoods Skills Training and Support

The livelihoods skills training and support activities included a set of training aimed at helping participants develop their businesses and IGAs, on-farm or off-farm. These training sessions included (1) SPM training of IGAs, (2) Agronomic and agro-business training through Farmer Field Business Schools (FFBS), (3) Business Coaching, and (4) Financial Literacy Training.

Selection, Planning, and Management of Income Generating Activities

This training aimed to help participants identify and select an IGA, plan for a successful launch, and manage the activity effectively. CBTs helped participants identify activities that would suit the participant's skills, and the context, considering market opportunities, feasibility, and profitability. The SPM training also supported participants already engaged in appropriate IGA with additional business skill training to expand their enterprises. Before the start of the training, AVSI carried out a market and value chain assessment to understand the viability of enterprises in the local market. The results were used to adapt the training to the local context.

Agronomic and Agribusiness Training Through Farmer Field Business School

The AVSI programming guide describes FFBS as "a hands-on and participatory learning-by-doing approach, by which groups of farmers meet regularly throughout the selected crop season or livestock growth period to experiment and learn about new production and marketing options."

FFBS sought to help participants learn how to improve their agricultural productivity on selected crops. AVSI promoted maize, beans, and groundnuts. FFBS groups were intended to provide participants with the necessary skills to shift from subsistence to commercial agriculture.

Farmers met with their "intervention" groups (about 25 participants), the same exact group as those in T2. Participants voted to choose which particular crop on which they wanted to focus their learning. Typically, individuals within a group select the enterprise on which they want to receive training, but due to the RCT constraints, groups were formed, and participants had to agree on which crop from among three activity-promoted crops to learn about; thus, some members may have preferred to learn about maize, but the majority in that group wanted to learn about another crop.

Business Coaching

The AVSI programming guide describes business coaching as: "The intention of business coaching is to provide mentorship and continued technical support to business owners in the current cycle of their businesses, both on and off-farm enterprises." CBTs delivered quarterly business coaching sessions to the participants at their business premises, and CBTs could also be engaged for guidance at the VSLA group level or via referral from a coach as needed. A structured curriculum guided business coaching.

Financial Literacy Training

This training provided participants with basic earning, spending, budgeting, saving, and borrowing skills. It also provided information related to banking services. CBTs facilitated the training at the intervention group level during or after VSLA meetings. It started at month four after VSLAs had completed the savings start-up training and activities.

1.4.6. Referral and Linkages

This activity is two-fold. Linkages primarily aimed to facilitate connections between private and public sector actors and participants in order for them to access quality and affordable agro-inputs, extension services, and markets to increase their agricultural productivity and incomes. AVSI started this activity by organizing a Market Event.

The AVSI programming guide describes the Market Event as follows: "The Market Event consists of a systematic set of activities that will culminate in an exhibition that will bring together private sector actors (seed firms, agro-input dealers), key stakeholders, primary participants and their [household] HH members, as well as non-participant refugee and host community members to explore and initiate opportunities for linkages that will directly contribute to the activity goals. The private sector will have the opportunity to showcase their products and technologies to potential clients and initiate a business relationship."

Details of the Market Event were reported in IPA's report "AVSI Graduating to Resilience Sponsored Market Event/Road Show" from June 2019.[15]

Referrals relate to facilitating participants' access to critical services tackling issues such as nutrition, gender-based violence, health, and water, sanitation, and hygiene (WASH). Referrals are made by a coach who utilizes the RFSA-mapped service providers' inventory to refer participants for appropriate care.

Table 2. Summary of the timeline of the different activities

	Start Date	End Date	Frequency	Duration
Cash				
Consumption support (~$4–5 per household member per month)	Feb '19	Feb '20	Monthly (n = 12)	
Asset transfer (~$300)	Jul '19	Aug '19	Once	
Coaching				
Group Coaching Sessions	Feb '19	Jun '21	Weekly	1:30 to 2 Hours
Individual Coaching Sessions	Feb '19	Jun '21	Every 2 Weeks*	1 Hour
Savings				
VSLA	Feb '19	Jun '21	Weekly	1 Hour
Livelihoods Skills Training and Support				
SPM Training	May '19	Sep '19	Weekly	1 Hour
FFBS	Feb '19	Aug '19	Weekly	0:30 to 2 Hours
Business Coaching	Oct '19	Jun '21	Quarterly	30 Minutes
Financial Literacy Training	Jun '19	Dec '19	Weekly	2 Hours

**From June 2019 (before which meetings took place weekly)*

1.5. 1.5. Implementation Staff, Community-Based Trainers, and Coaches

1.5.1. Community-Based Trainers

CBTs were in charge of technical training and mentorship support, including VSLA and livelihood training sessions covering FFBS, SPM, and financial literacy. They were assigned approximately

[15] See the description of the market event at https://avsi-usa.org/may-12-2019-myvillagemymarket-engaging-private-sector%e2%80%8b-to-create-sustainable-opportunities/

three intervention groups (groups of 25 participants). They were recruited based on the following attributes:

- Academic background and experience in agricultural extension services
- Resident within the Activity areas of operation
- Ability to communicate with target participants in a language they understand
- Physically able to lead practical sessions
- An adult (over 18) of sound mind and appropriate character CBT were trained by AVSI staff prior to starting their role.

Coaches

Coaches were in charge of facilitating individual and group coaching sessions. They were trained in facilitation skills, nutrition, gender, prevention of sexual exploitation and harassment, and the coaching approach, including different topics of the structured coaching curriculum to support primary participants and their households.

Group coaches were assigned to three groups, 75 households on average, and individual coaches were assigned to 25 households on average. Coaches also attended technical training led by CBTs to reinforce these messages and skills within coaching sessions.

The qualifications for coaches were bachelor's degrees or diplomas. Most refugee coaches had a diploma in pedagogy.

1.6. Activity Participation

This section describes the rates of activity participation and reasons for dropping out of the activity based on AVSI quarterly participation data, as well as the characteristics of those who dropped out of the activity relative to those who remained. Overall, activity participation was high, with over 90% of those initially assigned to treatment participating throughout the first year when transfers were taking place. Activity participation dropped over time, but in most cases, AVSI's records indicate relocation as the reason for dropout. Dropout rates were highest for the no-asset treatment group (T3) and lowest for the asset-transfer treatment group with group coaching (T2).

Figure 4 and Figure 5 show the share of households that dropped out of the activity between January 2019 and April 2021, separately for the refugee and the host community and separately by treatment arm. In the refugee community, participation dropped noticeably after the end of cash transfers in February 2020, with the no-asset treatment group (T3) seeing the biggest drop and ending up with a slightly lower share of the household participating through the end of the activity. Participation rates were slightly higher in the host community than in the refugee community. By April 2021, the share of households remaining in the activity was similar across the three treatment arms.

Table 3 shows the reasons AVSI recorded regarding why participants left the activity. The most important reason for dropping out of the activity was that households left their village. Among dropouts, a slightly larger share did so in the refugee community (69%) than in the host community (46%). This is partly due to the number of refugee households that returned to the Democratic Republic of the Congo (130 households in total). The second most important reason for dropout is households losing interest in the activity. Households that missed AVSI activity during an entire quarter were removed from the activity.

Figure 4. Activity participation over time, refugee sample

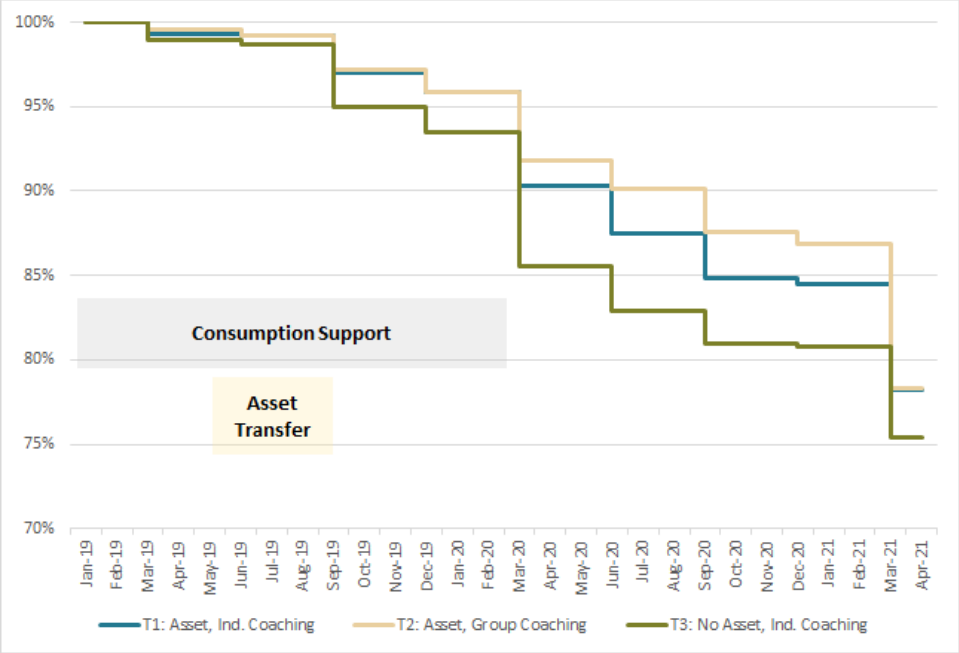


Figure 5. Activity participation over time, host sample

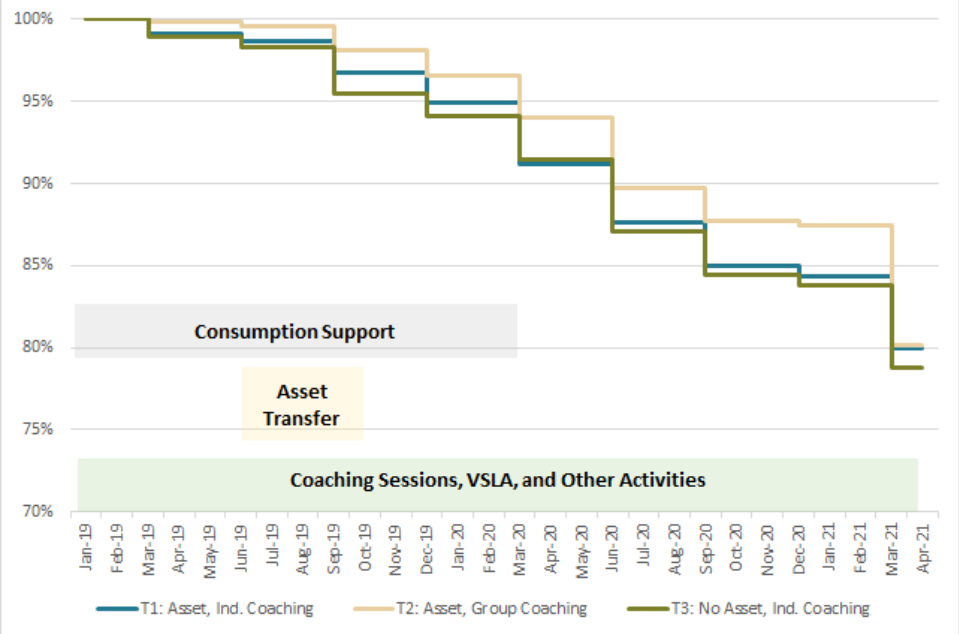


Table 3. Reasons for dropping out of the activity

	All		Host		Refugee	
	N	%	N	%	N	%
Household relocated	818	57%	311	46%	507	67%
Household no longer interested	353	25%	190	28%	163	22%
Other reason	80	6%	50	7%	30	4%
Primary participant divorced and left	57	4%	57	8%	0	0%
Primary participant too sick to attend	33	2%	18	3%	15	2%
Primary participant too old for the activity	32	2%	31	5%	1	0%
Duplicated household	21	1%	6	1%	15	2%
Primary participant died	17	1%	10	1%	7	1%
Household of a coach or CBT	17	1%	0	0%	17	2%
Total	1,428		673		755	

We can analyze the characteristics of the households that dropped out of the activity to understand how they may be different from those that did not drop out. Table 4 compares dropout and non-dropout households in terms of food security at baseline, using the Household Dietary Diversity Score (HDDS). This comparison suggests that households that dropped out had lower food security at baseline, but only marginally. The HDDS is a measure of food consumption diversity and is calculated as the sum of the number of food groups the households consumed the previous day. [16] The higher the score, the more diverse the household's food consumption is.

Table 4. Baseline food security index dropout versus non-dropout

	All		Non-Dropout		Dropout	
	Mean	N	Mean	N	Mean	N
Host	3.14	3,302	3.18	2,629	3.01	673
Refugee	3.00	3,329	3.01	2,574	2.96	755
Total	3.07	6,631	3.10	5,203	2.98	1,428

[16] The food groups are A. Cereals, B. Root and tubers, C. Vegetables D. Fruits, E. Meat, poultry, offal K. Sugar/honey, F. Eggs L. Miscellaneous, G. Fish and seafood, H. Pulses/legumes/nuts, I. Milk and milk products and J. Oil/fats.

2. Methodology of the Randomized Control Trial

2.1. Research Question

This study aims to evaluate the effectiveness of the Graduation Approach in improving food security, nutrition, and self-reliance among poor households in refugee settlements and host communities in Uganda. While the Graduation Approach has been evaluated in a variety of low-resource settings (e.g., in Ethiopia) and in conflict or post-conflict settings (e.g., Yemen), it was yet to be tested with refugees across demographically disparate communities.

USAID also sought to enable broad and rigorous learning to inform policy adaptation on a large scale. With this activity, USAID is interested in learning whether the graduation model can be adapted to reduce the cost of implementation without substantially reducing the activity's effectiveness. More specifically, the question is about the cost-effectiveness of the asset transfer, as well as the cost-effectiveness of the group-coaching model versus individual coaching.

In summary, the objectives of the RCT are to:

- Evaluate the activity's effectiveness in improving food security, nutrition, and self-reliance among poor households in refugee settlements and host communities in Uganda.
- Evaluate the cost-effectiveness of the asset transfer in the success of the activity.
- Evaluate the cost-effectiveness of group coaching versus individual coaching.

2.2. Study Design

To answer these research questions, IPA's RCT sought to identify the most cost-effective model for the Graduation Approach through a rigorous comparison of the costs and the results of the approach across three variations: (T1) the full graduation program with individual, household-level coaching; (T2) the full graduation program with group coaching and (T3) the graduation program without an asset transfer component and individual coaching. The three treatment arms are described in Table 5.

Table 5. Description of the three intervention arms

Activity Component	T1: Standard Graduation	T2: Group Coaching	T3: Empowerment Model
Consumption support*	●	●	●
Livelihood skills training and support	●	●	●
Savings and financial inclusion	●	●	●
Cash asset Transfer ($300)	●	●	

Activity Component	T1: Standard Graduation	T2: Group Coaching	T3: Empowerment Model
Coaching	Individual	Group	Individual
Linkages and referrals	●	●	●

**$4 (host) / $5 (refugee) per household member per month for 12 months*

The design employs a two-stage randomization procedure. First, a total of 114 study villages[17] were randomized into either "Treatment" villages, where interventions took place, or "Control" villages, where no interventions were implemented. Table 6 shows the breakdown by host and refugee communities. In the second step, a total of 8,833 households in treatment villages were randomized into different intervention arms or a within-treatment "spillover control" group. Table 7 shows the breakdown by experimental groups and communities.

In order to estimate the impact of each of the three intervention arms, households are compared to a control group in Control villages ("Pure Control"). Furthermore, some households in treatment villages were randomized into a "Spillover Control" group. These households were not offered participation in any of the interventions. Since other households in the same villages were participants in the activity, this allows a comparison of "Spillover Control" households to "Pure Control" households to measure the aggregate spillovers from the three treatment arms to other households in the same villages.

Table 6. Number of treatment and control villages

	Treatment	Control
Host	36	36
Refugee	21	21
Total	57	57

Table 7. Number of households in each arm

Arm	All	Host	Refugee
Pure control	2,312	1,115	1,197
T1: Individual coaching + asset (Standard Graduation)	2,196	1,096	1,100
T2: Group coaching + asset (Group Coaching)	2,229	1,102	1,127
T3: Individual coaching, no asset (Empowerment)	2,206	1,104	1,102
Spillover control	2,202	1,100	1,102
Total	11,145	5,517	5,628

[17] Some "villages" were the result of combining or splitting up administratively assigned villages to organize the implementation and intervention. In this report, we refer to the villages as they are used in the study rather than referring to the local administrative units.

2.3. Study Design Limitations

The study has three intervention arms to which households were randomly assigned within the same communities at the household level. While comparing the Spillover Control group to the Pure Control group allowed researchers to estimate average spillover effects from all three intervention arms, the design cannot account for spillover effects between intervention arms. As such, the results of individual arms vis-a-vis the control group need to be interpreted, keeping in mind that the treated households in one treatment arm may have interacted with households of another treatment arm. The design captures the expected first-order spillovers (from treated to untreated households); but spillovers between treatment arms could imply, for example, that the effect of the no-asset arm would be in a context where other households in the community were not part of the treatment groups receiving an asset.

Self-reported data have limitations, such as the possibility of exaggeration or omission of information, inaccurate recollection of experiences or events, reporting untruthful information, and reduced validity when respondents do not fully understand a question. This may be especially true in areas such as a refugee settlement, where a high density of assistance programming may encourage respondents to believe they may receive a benefit for providing one answer over another. As outlined above in data quality, IPA deployed audit surveys to check the validity of answers as well as emphasized at the beginning of each survey that respondents would receive no negative or positive impact based on participation.

3. Data Collection

3.1. Evaluation Team

From 2017 to 2022, many IPA staff worked on this project and its different rounds of data collection, including Laura Schmucker as Research Manager; Patrick Malone and Jan Will as Research Coordinators; Antoine Guilhin and Aziz Buyinza as Research Associates; and Solomon Otale, Morris Bwambale, Alex Mwesigwa, Martin Atyera, and Edmund Emulu as Field Managers. In addition, many enumerators worked on this project. The Principal Investigators on the project are Lasse Brune, Nathanael Goldberg, Doug Parkerson, Dean Karlan, and Christopher Udry.

3.2. Sample and Baseline Survey

In February 2018, IPA and AVSI met to discuss how best to choose the study area. For the refugee settlement, IPA and AVSI decided to include the entire refugee community. In the host community, IPA and AVSI focused on four sub-counties contiguous to the settlement: Nkoma, Biguli, Bihanga, and Bwizi.

After conducting the targeting exercise, AVSI identified 25,104 eligible households (see Section 1.3), of which 11,145 were randomly selected to be part of the study. This included the selection of 50 replacement households per village to survey in randomized order, as needed. In total, 529 households were replaced in the host and 537 in refugee communities.

Between August and November 2018, IPA conducted a baseline survey to assess the status of key indicators, gain a better understanding of prevailing conditions and perceptions of the study population, and guide the randomization of households into the three variations and control groups.

After the baseline, the households initially sampled that could not be surveyed were removed from the sample, and the replacement households who were surveyed became part of the main Cohort 1 sample.

3.3. Endline Survey

3.3.1. Questionnaire

The questionnaire was divided into three parts. The first part covered household characteristics, expenses, income, finance, and assets, among other things, as detailed below. It was administered to the head of household or the “target participant” (the most likely primary participant as identified at baseline based on AVSI’s criteria irrespectively of eventual

participation status).[18] The second part asked about the target participant and her/his mental health, social network, and other issues.

The target participant was the individual in the household who was the primary participant of the activity if their household was assigned to a treatment group. The last part of the questionnaire was about women's and children's nutrition. The questions about children were administered to their respective caregivers. The questionnaire included the following modules:

Part I: Household survey (head of household)

- Household roster
- Polygamy
- Housing characteristics
- Livestock ownership, sales, and purchases
- Livestock inputs
- Livestock production
- Livestock structure
- Agriculture: inputs, production, and sales
- Fruit trees and permanent crops
- Employment
- Business
- Assets
- Organizational support
- Remittances and transfers
- Consumption
- Finance
- Food Consumption Score
- Household Food Insecurity Access Scale
- Social cohesion and trust
- WASH
- Shocks and stressors
- Access to information
- Livelihood activities
- Social and capacity-building support
- Aspirations and confidence to adapt
- Gender norms

[18] In 96% of cases, the target participant identified at baseline coincided with the eventual actual participant. Note follow-up surveying targets the likely participant as identified at baseline–pre-intervention—because while the actual participant is known in treatment groups, the counterfactual in the control is not. This is similar to why follow-up surveys are done with all households randomly assigned to treatment (and control) rather than only with those who were actually treated. Selection into which households end up being treated and which household members become the actual participant can be correlated with the outcomes of interest, and selective follow-up would thus lead to biased treatment effect estimates.

- Gender and cash
- Gender and household decision-making, access to credit and group participation
- Deceased household members

Part II: Target participant

- Gender and cash income
- Gender and household decision-making, access to credit and group participation
- Well-being
- Health
- Social capital
- Social networks
- Self-efficacy
- Grit
- Mental health
- Financial health
- Coaching sessions
- Intimate partner violence

Part III: Women and child (primary caregiver) nutrition

- Child nutrition and feeding practices
- Woman's nutritional status and feeding practices

The survey took approximately 3 hours and 30 minutes on average to administer.

In addition to the survey, a team of measurers also administered an anthropometrics survey, recording the height and weight of all the children under 5 and all women between 15 and 49 years old in the household. Due to the COVID-19 pandemic restrictions, the measurers did not measure subjects directly at the endline but instead asked adults in the households to measure the children and measure themselves. The anthropometric survey took, on average, 30 minutes for the measurers to administer.

3.3.2. Field Preparation

From January to March 2021, IPA designed the endline questionnaire and conducted six rounds of pre-testing before the launch of the data collection. After each round, the instrument was refined, and its duration was assessed. The survey instrument consisted of amended modules already used for baseline data collection rounds and new modules. Analysis of the baseline was used to refine the questionnaire.

A team of two, including the Field Manager and an enumerator, conducted the pilot surveys using a combination of in-person and over-the-phone interviews. They carried out six separate rounds of pre-testing, each focusing on a few sections of the questionnaire. In each of these rounds, the piloting team surveyed up to five people. The pre-testing was carried out in Kinoni and Kikona villages in Rukunyu town council as well as Kigolo and Musheija villages in

Kamwenge town council. All these villages are based in the host community and are outside the villages targeted by the study.

The field team for the endline data collection was finalized following two 7-day training sessions. Both consisted of 6 days of classroom training and 1 day of field practice. IPA first trained the enumerator of the host community team from April 12 to April 19. Of the 78 candidates invited to the training, 65 field officers were selected for the field team. Then, IPA trained the settlement team from May 10 to May 17. Again, 78 people were invited to the training session, and 65 field officers were selected. A third separate 2-day training was held for those enumerators taking anthropometric measures of the respondents during the data collection.

The trainees were selected based on their participation and performance during the training. The trainees consisted of both experienced IPA enumerators and newly recruited candidates. IPA did not hire enumerators who live near the Rwamwanja Refugee Settlement to avoid contamination with the sample. The introductory training content included enumeration principles, conducting ethical research, IPA data quality standards, and obtaining consent from respondents. Field officers were also trained about COVID-19 standard operating procedures, reporting symptoms, etc., the survey with each member, and afterward, they were given guided instructions on conducting the electronic survey using tablets. A separate 2-day training was conducted to train the anthropometric measurers.

3.3.3. Soft Launch

IPA conducted a full-scale soft launch of the endline survey on April 23. On this first day of data collection, all 84 enumerators only conducted one survey each. The Field Manager and Senior Research Associate observed the preparedness of the enumerator teams, contact strategies, familiarity with the questionnaires, and understanding of the objective of the survey. The enumerator teams received feedback on their performance, discussed challenges, and clarified any final questions.

3.3.4. Data Collection

The data collection of the endline survey started in the host community on April 24, 2021. Three weeks later, on May 15, the data collection started in the refugee community.

The data collection stopped in both communities with the lockdown imposed by the Government of Uganda in mid-June 2021 to curb the spread of COVID-19 transmission. Data collection resumed at the end of August 2021 and concluded in December 2021. At the end of October, most respondents (90% of the sample) had been surveyed. In November and December 2021, a small group of enumerators tracked the remaining households.

In both the host and refugee communities, IPA deployed 65 field officers, including 45 enumerators, two trackers, four mobilizers, five team leaders, two auditors, and 10 anthropometric measurers. Out of the 130 field officers, 71 were women.

The consumption support cash transfers started in February 2019 and ended in February 2020. The asset transfer was disbursed between July and August 2019. Therefore, the endline started about 26 months after the beginning of the intervention, 14 months after the end of the consumption support, and about 20 months after the asset transfer distribution. This means that the endline studies an effect more than a year after the end of the last cash transfer.

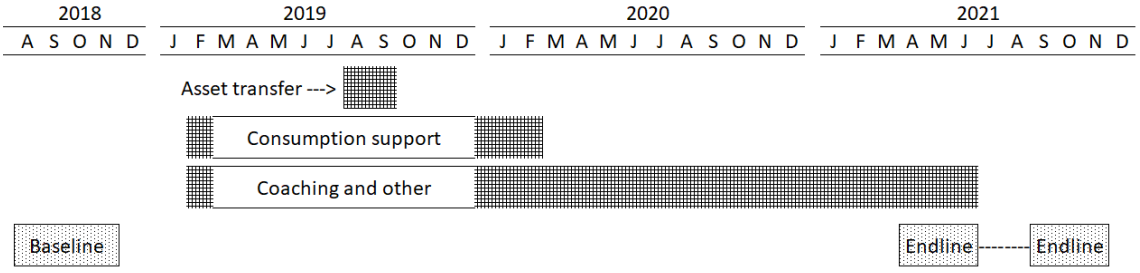
At the beginning of the data collection in April 2021, VSLAs and coaching sessions were still ongoing, but they ended in June 2021, while the endline data collection was yet to be completed.

Field officers were divided into two teams in both the settlement and host communities. In both, mobilizers visited the villages a day before the rest of the team and worked with the village chairperson or local council to locate the selected household respondents and make appointments. Enumerators followed to complete the household surveys the next day. When mobilized respondents could not be surveyed on the planned survey day, villages were revisited to track missing respondents up to three times. Both groups together were supervised by a Field Manager.

Once enumerators had listed the household members to measure—children under 5 and women 15–49—anthropometric measurers came to the household to administer the anthropometric survey. However, due to COVID-19 and to avoid direct contact between measurers and respondents, measurers did not measure directly but instructed adults in the households on how to measure the children and the other household members.

Figure 6 shows the data collection timeline (endline and other survey rounds) relative to the timing of the main activity components.

Figure 6. Timeline of the data collection and the activity elements



3.3.5. Household Mobilization and Respondent Selection

The field team was provided the list of households to survey. First, a mobilizer reached every household and mobilized the head of households and the target participant for the following day. If a household could not be available the following day, the mobilizer made an appointment for another day.

The following day, an enumerator visited the household to conduct the household survey. The first part of the survey covered topics related to the household and was administered to the

head of the household or the participant if they were knowledgeable. The second part of the survey covered topics specific to the activity participant and was administered to that participant. The third part of the survey covered questions about the nutrition of children and women in the household.

3.3.6. Data Quality

IPA ensured data quality through two processes: survey audits and high-frequency checks of recorded data. Audit surveys repeated approximately 40 questions from the original surveys. IPA randomly selected a subset of respondents who had been surveyed 2 days prior. Auditors administered a short version of the survey to each selected respondent, probing whenever the answer they received differed from the one originally recorded by the enumerator to assess whether there were any issues in survey administration, comprehension, or completion. IPA conducted audit surveys with 10% of the household respondents. Whenever discrepancies on key variables arose, in about 5% of the audit surveys, enumerators and auditors met to understand the origin of the discrepancy and verify the correct response, sometimes verifying answers with the household respondent. IPA research staff then corrected the verified answer in the database.

IPA also performed high-frequency checks daily on incoming data using Stata. IPA research staff wrote codes to look for data outliers, logical inconsistencies, key variables, and missing data. If IPA research staff identified any issues during this process, they consulted with enumerators to clarify or correct the answers. IPA discovered no intentional data manipulation by enumerators.

3.3.7. Survey Attrition

In total, 10,509 households were surveyed at the endline, representing 94.29% of the 11,145 households in the sample. The response rate per arm and community is shown in Table 9.

Table 8. Response rate across experimental groups and communities

	All		Host		Refugee	
	N	%	N	N	%	N
Pure control	2,172	93.94	1,051	94.26	1,121	93.65
T1: Ind. coaching + asset	2,075	94.49	1,050	95.8	1,025	93.18
T2: Group coaching + asset	2,113	94.8	1,040	94.37	1,073	95.21
T3: Ind. coaching, no asset	2,079	94.24	1,043	94.47	1,036	94.01
Spillover control	2,070	94.01	1,040	94.55	1,030	93.47
Total	10,509	94.29	5,224	94.69	5,285	93.91

We do not observe any statistically significant differences between arms; see Table 10.

Table 9. Attrition across experimental groups and communities

	(1)	(2)	(3)
Sample	**All**	**Refugee**	**Host**
Variable	**Attrited from Endline**	**Attrited from Endline**	**Attrited from Endline**
T1: Ind. coaching + asset	-0.01	0.01	-0.02
	(0.01)	(0.01)	(0.01)
T2: Group coaching + asset	-0.01	-0.01	0.00
	(0.01)	(0.01)	(0.01)
T3: Ind. coaching, no asset	0.00	0.00	0.00
	(0.01)	(0.01)	(0.01)
Spillover Control	0.00	0.00	0.00
	(0.01)	(0.01)	(0.01)
Observations	11150	5630	5520
R-squared	0.01	0.00	0.01
Mean in Pure Control	0.06	0.06	0.06
Standard deviation (SD) in Pure Control	0.24	0.24	0.23
P-value of H0:			
T1 = T2	0.78	0.13	0.15
Avg(T1, T2) = T3	0.63	0.86	0.58
Avg(T1, T2) ref. = avg(T1, T2) host	0.73	0.73	0.73
T3 ref. = T3 host	0.92	0.92	0.92

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

3.3.8. Challenges

The field team encountered infrastructural challenges due to the poor state of the roads in the survey area, heavy rains, the large distance between households in some host community villages, and restrictions introduced in light of COVID-19. The survey period fell in the rainy season, which further exacerbated the low quality of some roads and slowed down the data collection process by complicating access to some areas. In addition, the population density in the host community is low, and households are far apart. Often the households were separated by large areas of farmland or accessible only through small, steep paths where not even motorcycle taxis were able to pass. For this reason, enumerators had to walk up to 30 minutes one way to reach some respondents. Restrictions introduced to curb the COVID-19 pandemic

resulted in further challenges for the field team. A curfew at 7 p.m. combined with a long distance between Kamwenge Town, where the field team was based, and the survey sites led to the team having to leave the field early in order to make it back in time before the curfew.

4. Sample Characteristics

At baseline, 69% of the households indicated having livestock, 67% received income from paid work (mostly agricultural daily labor), and 25% had a business. On average, households had been living in the settlement for 4 years; the median year of tenure was 5 years at baseline.

To verify that treatment and control households were comparable, IPA tested whether there were statistically significant differences between treatment and control villages at baseline. No statistically significant differences were found, as can be seen in Table 11. Groups are similarly balanced within treatment communities, as seen in Tables 18 and 19 in Annex A.

Table 10. Balance of baseline characteristics, treatment versus control villages, for household interviewed at endline

	(1)			(2)			(1)–(2)
	Treatment villages			Control villages			Tvil vs. Cvil
	N	Mean	SD	N	Mean	SD	P-Value
Number of household members	8,342	5.72	2.55	2,172	5.76	2.49	0.82
Age of household head	8,342	39.44	13.91	2,172	39.49	14.13	0.63
Number of children under 18 in household	8,342	3.48	2.09	2,172	3.51	2.04	0.78
Female head of household	8,342	0.55	0.50	2,172	0.55	0.50	0.91
Number of rooms in the main house	8,342	2.88	1.25	2,172	2.85	1.21	0.47
Own agricultural land at time of the survey	8,342	0.54	0.50	2,172	0.50	0.50	0.10
Had a business activity in the last 12 months	8,342	0.25	0.44	2,172	0.25	0.43	0.83
Employed in the last 12 months	8,341	0.67	0.47	2,172	0.67	0.47	0.63
HDDS Score (0–12)	8,342	3.08	1.38	2,172	3.06	1.38	0.81
Subjective well-being index	8,342	-0.01	1.01	2,172	0.01	1.00	0.81
Joint Test P-Value:							0.77

5. Results

We focus on the primary outcome aggregates registered in the American Economic Association analysis plan[19] and their components. The impacts on selected secondary outcomes are also described. Additional impact estimates on BHA indicators can be found in the tables in Annex C.

5.1. Empirical Strategy

IPA estimated an intention-to-treat effect of each treatment arm using linear regressions. For each household i in village v, we specify:

$$Y_{i,v} = \beta_0 + \beta_1 Individual + \beta_2 Group + \beta_3 NoAsset + \beta_4 SP + \alpha_v + \varepsilon_i$$

Where Y is an outcome variable of interest, α_v captures village fixed effects, and "Individual," "Group," "NoAsset," and "SP" indicate random assignment into individual coaching with an asset, group coaching with an asset, individual coaching without an asset, and spillover control, respectively.

We focus on estimates of β_1, β_2, and β_3 which reflect the causal average impact of each assignment to each treatment arm versus households in control villages ("Pure Control"). The difference between β_1 and β_2 captures the differential impact of individual vs. group coaching. The comparison between β_1 and β_3 identifies the additional impact from the cash asset transfer, keeping the coaching modality constant. We also compare the average of β_1 and β_2 with β_3 pooling the "with asset" arms irrespective of the coaching modality with the "no asset" arm. The parameter β_4 captures spillovers from treatment group households to other eligible households that were not selected for participation but reside in the same villages. The parameter ε_i is a zero mean error term. To account for the two levels of randomization—village-level randomization into treatment and control and household-level randomization into experimental arms within treatment villages—we construct standard errors of the parameter estimates of interest by using a bootstrap procedure that mirrors the two stages randomization process at the two different levels.

All monetary values in the regression tables are in PPP dollars. The conversion rates are PPP $1 = 1,300 Ugandan Shillings and $1 USD = PPP $2.81.

For the main tables of this report, we pool host and refugee samples, but separate results for each sample are provided in the annexes and referenced in the text. We reference differences between the host and refugee communities in the description of the results below.

[19] Brune, Lasse et al. 2021. "Randomized Impact Evaluation of a Graduation Program on Livelihoods in Refugee and Host Communities in Uganda " American Economic Association RCT Registry. August 3. https://doi.org/10.1257/rct.4080-3.0

5.2. Impacts on Key Welfare Outcomes

In this section, we compare households in different experimental conditions to analyze the treatment effect of the Graduation Approach and its variations.

The regression results in Table 12 show large and statistically significant effects of all three treatment arms on key welfare outcomes that the activity aimed to improve (see “Interpretation of regression tables” on page 26 for an explanation of how to interpret the tables).

Comparison between treatment groups and Pure Control groups shows a large increase in key outcomes. The average value of productive assets was between PPP $819 (T3) and PPP $1,105 (T1) among participating households compared to the households in the Pure Control group, for which this value averaged PPP $585. The average monthly income for participants was between PPP $124 (T3) to PPP $136 (T1) among participating households compared to the households assigned to the Pure Control group, which averaged PPP $94. Among those who received any form of the graduation program, average monthly consumption per capita was between PPP $111 (T3) and PPP $118 (T1), compared to households assigned to the Pure Control group, which averaged PPP $94. Food security increased among all treatment groups, with households scoring on average 0.51 (T3) to 0.63 (T1) SDs higher than Pure Control households on a composite food security index (normalized to a mean of zero in the control). Subjective well-being increased among all treatment groups, with households scoring on average 0.44 (T3) to 0.62 (T1) SDs higher than control households on a composite well-being index (normalized to a mean of zero in the control).

We see at most relatively small differences in impacts on key welfare outcomes between T1 and T2, and the estimates are not statistically significantly different from each other. Treatment effects are consistently larger and statistically significant for T1 and T2, which received the asset transfer, compared to T3, which did not receive an asset transfer. We note that the increase in productive assets as measured is only about 61% (T1) and 50% (T2), respectively, of the size of the cash asset transfer (about $840 in PPP terms).

Annex Tables 19 and 20 show that treatment effect estimates are economically and statistically significant for each community. Treatment effects are larger for hosts compared to refugees (especially for asset holding), except for consumption, where the effects are similar for the two sample populations.

5.2.1. Spillover Effects

Beyond the large direct effects of the activity on its participants, there were sizable—albeit less precisely estimated—spillovers of the activity on both consumption levels and food security measures of non-participants who resided in treatment villages and were eligible to be selected for participation but were not (randomly) assigned to one of the treatment arms. Treatment-effect estimates for the spillover control group are between 25% (as a share of T1’s treatment-effect estimate) and 36% (as a share of T3's treatment-effect estimate) of the direct treatment effects for consumption and between 13% (as a share of T1's treatment effect estimate) and 16% (as a share of T3's treatment effect estimate) for the food security index. For measures of

economic activity such as productive assets and income, we find no signs of sizable spillovers, suggesting that spillovers on consumption and food security may be operating via informal community insurance against shocks rather than a broader effect on aggregate economic activity in the intervention villages.

Spillover effects are somewhat stronger in absolute terms in the host sample, where we also see a spillover effect on subjective well-being; this may be driven by the larger direct effects among hosts since the average treatment effect estimate of the spillover effect on consumption and food security in the refugee sample is large relative to the direct effects.

INTERPRETATION OF REGRESSION TABLES

The results tables in this section show the treatment-effect estimates estimated from a linear regression model. The column titles indicate the outcomes. The first row for each of T1, T2, and T3 shows the difference in average outcomes levels among each of the three arms and the Pure Control. The average outcome for the Pure Control group is shown in the lower half of the tables for reference. The second row shows the standard error of the estimated difference. Asterisks in the first row indicate levels of statistical significance for tests of the Null hypothesis of a treatment effect of zero.

Table 11. Impact of the activity on key welfare outcomes

Variables	(1)	(2)	(3)	(4)	(5)
	Value of Productive Assets (PPP $)	Monthly Income (PPP $)	Monthly Consumption (PPP $)	Food Security Index (Z-Score)	Subjective Well-Being Index (Z-Score)
T1: Ind. coaching + asset	520.54***	43.00***	24.02***	0.63***	0.62***
	(77.67)	(7.34)	(3.12)	(0.04)	(0.05)
T2: Group coaching + asset	424.83***	44.57***	25.77***	0.63***	0.55***
	(69.28)	(7.61)	(3.24)	(0.04)	(0.04)
T3: Ind. coaching, no asset	233.86***	30.38***	17.11***	0.51***	0.44***
	(70.00)	(6.71)	(3.12)	(0.04)	(0.04)
Spillover Control	29.20	6.17	6.14*	0.08*	0.07
	(72.19)	(6.29)	(3.38)	(0.05)	(0.05)
Observations	10514	9878	10514	10514	10458
R-squared	0.06	0.02	0.02	0.11	0.07

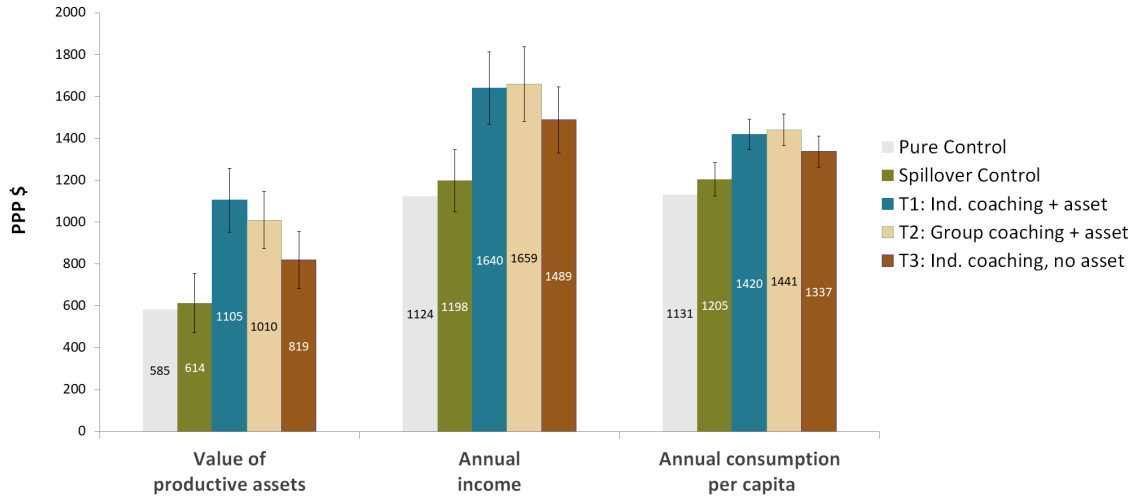
Variables	(1)	(2)	(3)	(4)	(5)
	Value of Productive Assets (PPP $)	Monthly Income (PPP $)	Monthly Consumption (PPP $)	Food Security Index (Z-Score)	Subjective Well-Being Index (Z-Score)
Mean in Pure Control	584.80	93.68	94.28	0.00	0.00
SD in Pure Control	1,532.00	131.10	78.62	1.00	1.00
P-value of H0:					
T1 = T2	0.20	0.85	0.54	0.81	0.12
Avg(T1, T2) = T3	0.00	0.01	0.00	0.00	0.00
Avg(T1, T2) ref. = avg(T1, T2) h.	0.07	0.21	0.56	0.01	0.00
T3 ref. = T3 host	0.58	0.28	0.52	0.01	0.00

Notes: The Food Security index is a z-score index of three components (Food Consumption Score (FCS), Negative Household Food Insecurity Access Scale (HFIAS), and Length/height-for-age (HAZ) for children under 5), standardized to a mean of 0 and SD of 1 in the Pure Control. The Subjective well-being index is an analogously constructed z-score index of two components (Negative Kessler 6 score and Life satisfaction from 1 to 10)

** Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process, which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Figure 7 and 8 graphically illustrate the regression results from Table 13.

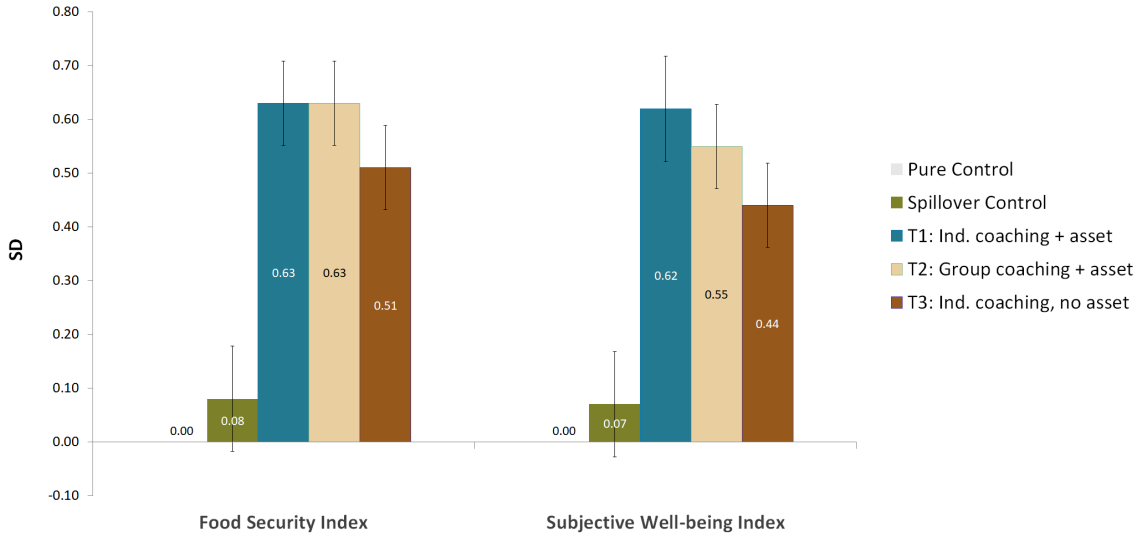
Figure 7. Differences in mean assets, income, and consumption across experimental groups



Notes: Values are in PPP $. For T1, T2, T3, and the Spillover Control group, figures on the bars represent the average of the Pure Control group plus the estimated treatment effect for T1, T2, T3, and the Spillover Control group, respectively. For the Pure Control group, figures on the bars represent the average for this group. Vertical lines represent 95% confidence intervals of the treatment effects relative to the Pure Control group. The figures are based on Table 13

(Value of productive assets). Annual income is the value of the monthly income in Table 14, multiplied by 12. Annual consumption is the value of the monthly consumption in Table 6 multiplied by 15.

Figure 8. Differences in mean food security and subjective well-being across experimental groups



Notes: Indices have mean = 0 and SD = 1 for the Pure Control group. Values are in SD. Indices are normalized to a mean of zero and a SD of 1 in the Pure Control group. For T1, T2, T3, and the Spillover Control group, figures on the bars represent the average of the Pure Control group plus the estimated treatment effect for T1, T2, T3, and the Spillover Control group, respectively. Vertical lines represent 95% confidence intervals of the treatment effects relative to the Pure Control group. The figures are based on Tables 16 and 17.

5.2.2. Productive Assets

A breakdown of the productive asset aggregated into its components (see Table 13) shows that the increase in the total value is primarily driven by increases in livestock holdings (especially by cattle and goats, but also by pigs, chicken, sheep, and others; results not shown) but other productive asset categories also see increases. The effect on livestock holdings is larger in the host sample in absolute terms (see Annex B Tables 22 and 23). However, the effect is higher in the refugee sample in relative terms (in the refugee sample, the average value of livestock holdings is 133% higher in T1 compared to the Pure Control, while it is 72% higher in the host sample).

The higher productive asset holdings coincide with increased labor supply and allow households to generate higher incomes. Annex C Table 35 shows that for all three treatment groups, on average, time spent working on livestock and on business increases, while time spent working on wage work decreases. Increases in labor supply are more pronounced for the host sample than for the refugee sample, where the total hours worked in the past week does not increase relative to the control. Table 14 shows that the source of treatment households' increased incomes includes livestock activities and business and farming, which is in line with the direction of effects on productive asset increases and with those on labor supply. Note, however, that the relative magnitudes of the asset increase and the income increase do not align well, but

measurement error, especially for income, is likely substantial, and investments into farming are not well captured in the stock value of assets.

Annex C Table 32 (combined sample), Table 33 (refugees), and Table 34 (hosts) show a large increase in land ownership and land used for the cultivation of crops. In the settlement, the average size of land that refugees report owning was between 3,070 square meters (T3, adding the treatment effect of 570 to the Pure Control group mean of 2,500) and 3,679 square meters (T1) among participating households compared to the households in the Pure Control group, for which this value averaged 2,500 square meters.[20] This represents an increase of 47% for T1 participants on average. In the host community, the average size of land owned was between 2,164 square meters (T3) and 4,488 square meters (T1) among participating households compared to the households in the Pure Control group, for which this value averaged 3,111 square meters. This represents an increase of 44% for T1 participants on average.

In the settlement, the average size of land used for cultivation was between 1,780 square meters (T3) and 4,774 square meters (T1) among participating households compared to the households in the Pure Control group, for which this value averaged 3,277 square meters. This represents an increase of 46% for T1 participants on average. In the host community, the average size of land used for cultivation was between 1,860 square meters (T3) and 5,585 square meters (T1) among participating households compared to the households in the Pure Control group, for which this value averaged 4,411 square meters. This represents an increase of 27% for T1 participants on average.

In the settlement, the increase in land used for agriculture is higher than the increase in land ownership as refugees increased their land for cultivation by renting. In the host community, the increase in land use for agriculture is similar to the increase in land ownership, implying that the entire increase in land under cultivation among host participants can be explained by the increase in the size of land owned.

5.2.3. Consumption

Table 15 breaks down the consumption effect into the effects on three sub-categories: food, non-food consumables, and durables (where the latter is calculated based on the assumed value of the flow of utility from the stock of household assets; see table notes for details). The large increase in total consumption per capita of 26%, 28%, and 18% for T1, T2, and T3, respectively, relative to the control group mean is mainly driven by increases in food consumption, but we

[20] Note that technically refugees are not allowed to own land in Uganda. The Office of Prime Minister (OPM) in charge of the settlement allocates small plots of land to refugees when they arrive in the settlement. OPM allocates temporary rights to use the plots, including cultivation. There is anecdotal evidence of refugees trading or exchanging plots. As foreigners cannot legally buy land in Uganda, refugees who want to get access to land in the host communities would normally be restricted to long-term leases. However, it is possible that refugees are not always aware of the law. IPA did not expect refugees to acquire additional lands, and endline data does not separate government-owned land and land leased in the host community. Some refugees may have negotiated lands with other refugees or may have leased in the host community. In the host community, land is privately owned. An additional round of data collection is planned to investigate land ownership and land markets further in both communities.

also find smaller, statistically significant increases for the other two consumption sub-categories. As before, the asset treatment groups T1 and T2 see larger effects than the no-asset group T3. Lastly, the impact on consumption is almost identical for both refugee and host samples.

5.2.4. Food Security

We construct an aggregate food security index by averaging z-scores from three sub-components: the Food Consumption Score (FCS), the Household Food Insecurity Access Scale (HFIAS), and the length/height-for-age for children under 5.

The FCS is calculated as a weighted average of the number of days the households consumed different categories of items: staples, pulses, vegetables, fruits, meat/fish/eggs, milk, sugar, oil, and condiments. The HFIAS is calculated from a series of questions about the hunger experienced by the household over the past 4 weeks, from "*In the past 4 weeks, did you worry that your household would not have enough food?*" to "*In the past 4 weeks, did you or any household member go a whole day and night without eating anything because there was not enough food?*". Table 16 shows treatment effect estimates for the three components. We find large effects on the FCS and the HFIAS. In terms of FCS, the percentage of households deemed as "Acceptable" was between 92% (T3) and 94% (T1) among participating households compared to the households assigned to the Pure Control group, for which this value was 87%, as shown in Annex D Table 50. In terms of HFIAS, the percentage of households deemed as "Food Secure" was between 29% (T3) and 38% (T1) among households assigned to treatment groups compared to the households assigned to the Pure Control group, for which this value was 12%, as shown in Annex Table 50. There was no difference between the control and treatment groups in terms of length/height-for-age for children under 5, as shown in Table 16.

Despite these improvements and improvements in other self-reported nutrition indicators (results not shown), we see no signs that children's length to height-for-age for children under 5 improved as a result of the activity by the time of the endline survey.

5.2.5. Subjective Well-Being

Besides the positive impacts of the activity on objective welfare measures reported above and impacts on self-reported physical health (see Annex C Table 38), we also find positive effects on an index of subjective well-being, for which we combine two components into a z-score index: a 6-question Kessler mental health score[21] and a question about life-satisfaction on a scale of 1 to 10. Both sub-components increase substantially in the treatment groups. Consistent with the pattern in other outcomes, treatment effect estimates are larger for T1 and T2 relative to T3, and effects are larger in the host sample than in the refugee sample.

[21] The Kessler 6 is a measure of psychological distress based on six questions. The higher the Kessler 6 score, the worse mental health. For this reason, we use a negative version of this score so that the higher the score, the better mental health.

Table 12. Value of productive assets (PPP $)

Variables	(1)	(2)	(3)	(4)	(5)
	Productive Assets	Livestock Owned	Non-Fixed Durable Productive Assets	Livestock Fixed Assets	Off-Farm Business inventory
T1: Ind. Coaching + asset	520.54***	412.60***	33.50***	25.67***	23.15***
	(77.67)	(74.35)	(2.88)	(3.18)	(6.27)
T2: Group coaching + asset	424.83***	308.20***	33.11***	21.14***	18.51***
	(69.28)	(62.04)	(3.07)	(2.62)	(5.94)
T3: Ind. Coaching, no asset	233.86***	172.49***	21.12***	13.94***	4.14
	(70)	(65.07)	(2.76)	(2.59)	(4.77)
Spillover Control	29.2	13.71	2.19	2.43	-3.51
	(72.19)	(68.61)	(2.26)	(2.52)	(4.49)
Observations	10,514	10,513	10,514	10,503	10,513
R-squared	0.06	0.06	0.07	0.08	0.01
Mean in Pure Control	584.80	473.60	56.82	20.06	21.93
SD in Pure Control	1,532.00	1,461.00	57.73	54.95	121.60
P-value of H0:					
T1 = T2	0.196	0.122	0.912	0.159	0.386
Avg(T1, T2) = T3	<.001	0.001	<.001	<.001	0.001
Avg(T1, T2) ref. = avg(T1, T2) host	0.067	0.143	0.012	0.001	0.025
T3 ref. = T3 host	0.577	0.918	0.053	0.075	0.149

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 13. Income per month (PPP $)

Variables	(1)	(2)	(3)	(4)	(5)
	Total Income	Paid Labor Income	Business Profit	Net Income from Livestock	Value of Crop Production Net of Costs
T1: Ind. Coaching + asset	43.00***	-5.20*	20.75***	6.32*	16.32***
	(7.34)	(2.89)	(3.52)	(3.29)	(2.23)
T2: Group coaching + asset	44.57***	-2.59	19.60***	7.40***	17.38***

Variables	(1)	(2)	(3)	(4)	(5)
	Total Income	Paid Labor Income	Business Profit	Net Income from Livestock	Value of Crop Production Net of Costs
	(7.61)	(3.21)	(4.03)	(2.86)	(2.2)
T3: Ind. Coaching, no asset	30.38***	-0.8	9.97***	7.19**	12.41***
	(6.71)	(3)	(3.31)	(2.82)	(2.13)
Spillover Control	6.17	1.03	-0.31	2.05	3.73*
	(6.29)	(3.09)	(3.01)	(2.59)	(2.03)
Observations	9,856	10,481	10,400	10,482	10,018
R-squared	0.03	0	0.02	0.01	0.1
Mean in Pure Control	98.90	37.74	21.98	6.10	28.08
SD in Pure Control	157.80	71.87	76.81	61.55	45.66
P-value of H0:					
T1 = T2	0.86	0.35	0.77	0.77	0.61
Avg(T1, T2) = T3	0.04	0.26	0.00	0.91	0.03
Avg(T1, T2) ref. = avg(T1, T2) host	0.01	0.78	0.89	0.00	0.00
T3 ref. = T3 host	0.13	0.52	0.90	0.28	0.05

Notes: Data were collected for different recall periods and scaled to monthly in this table. Values are in PPP$. Total income is the sum of 'paid labor income', 'business profit', 'livestock income' and 'crop production'. 'Value of crop production net of costs' is the sum of the value of crops output discounted by a cost factor to account for production that is based on the average difference between the value of crops harvested and expenses incurred for the random subsample for which full cost data was collected.

** Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 14. Consumption per month (PPP $)

Variables	(1)	(2)	(3)	(4)
	Total	Food	Non-Food	Durable Goods
T1: Ind. Coaching + asset	24.02***	16.52***	7.31***	0.32***
	(3.12)	(2.07)	(1.83)	(0.04)
T2: Group coaching + asset	25.77***	17.59***	8.01***	0.33***
	(3.24)	(2.02)	(1.92)	(0.04)
T3: Ind. Coaching, no asset	17.11***	12.03***	4.98***	0.22***

Variables	(1)	(2)	(3)	(4)
	Total	Food	Non-Food	Durable Goods
	(3.12)	(1.89)	(1.85)	(0.04)
Spillover Control	6.14*	3.37	2.74	0.05
	(3.38)	(2.12)	(1.94)	(0.03)
Observations	10,514	10,514	10,514	10,514
R-squared	0.02	0.03	0.01	0.03
Mean in Pure Control	94.28	58.80	35.25	0.39
SD in Pure Control	78.62	46.47	50.54	0.84
P-value of H0:				
T1 = T2	0.54	0.61	0.64	0.88
Avg(T1, T2) = T3	0.00	0.00	0.03	0.00
Avg(T1, T2) ref. = avg(T1, T2) host	0.56	0.16	0.62	0.66
T3 ref. = T3 host	0.52	0.06	0.35	0.91

Notes: Food consumption based on 7-day recall, non-food consumption based on 30-day and 12-month recall. All items are rescaled to monthly consumption. All values are in PPP$. Durables are defined as appliances and furnishings within the household; per-month durable consumption is computed as 1/12 of 10% of the value of durable household asset holdings. Total consumption reflects sums of all items.

** Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 15. Food security

Variables	(1)	(2)	(3)	(4)
	Food security index	FCS	Negative HFIAS	Length/Height-for-Age for Children Under 5
T1: Ind. Coaching + asset	0.63***	8.23***	4.55***	-0.04
	(0.04)	(0.61)	(0.27)	(0.04)
T2: Group coaching + asset	0.63***	8.09***	4.42***	-0.01
	(0.04)	(0.65)	(0.27)	(0.03)
T3: Ind. Coaching, no asset	0.51***	6.13***	3.51***	0.01
	(0.04)	(0.66)	(0.26)	(0.03)
Spillover Control	0.08*	1.15*	0.67**	-0.02
	(0.05)	(0.61)	(0.28)	(0.04)
Observations	10,514	10,514	10,514	10,512

Variables	(1)	(2)	(3)	(4)
	Food security index	FCS	Negative HFIAS	Length/Height-for-Age for Children Under 5
R-squared	0.11	0.1	0.12	0.02
Mean in Pure Control	0.00	49.73	-9.24	-1.75
SD in Pure Control	1.00	14.77	6.23	0.81
P-value of H0:				
T1 = T2	0.81	0.81	0.54	0.24
Avg(T1, T2) = T3	0.00	0.00	0.00	0.11
Avg(T1, T2) ref. = avg(T1, T2) host	0.01	0.07	0.00	0.46
T3 ref. = T3 host	0.01	0.04	0.01	0.83

Notes: FCS is the Food consumption score. HFIAS is the Household Food Insecurity Access Scale. We used the negative HFIAS so that the higher this score is, the more food secure the household. The food security index is the Z-score index of the FCS, negative HFIAS, and Length/height for under 5 children

** Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 16. Subjective well-being

Variables	(1)	(2)	(3)
	Subjective Well-Being Index	Negative Kessler 6 score	Life Satisfaction from 1 to 10
T1: Ind. Coaching + asset	0.62***	1.14***	1.54***
	(0.05)	(0.22)	(0.1)
T2: Group coaching + asset	0.55***	1.02***	1.36***
	(0.04)	(0.21)	(0.1)
T3: Ind. Coaching, no asset	0.44***	0.62***	1.20***
	(0.04)	(0.2)	(0.1)
Spillover Control	0.07	0.13	0.17*
	(0.05)	(0.21)	(0.1)
Observations	10,458	10,351	10,455
R-squared	0.07	0.03	0.08
Mean in Pure Control	0.00	-5.90	3.43
SD in Pure Control	1.00	4.59	2.20

Variables	(1)	(2)	(3)
	Subjective Well-Being Index	Negative Kessler 6 score	Life Satisfaction from 1 to 10
P-value of H0:			
T1 = T2	0.12	0.53	0.07
Avg(T1, T2) = T3	0	0.003	0.004
Avg(T1, T2) ref. = avg(T1, T2) host	0	0.05	0

Notes: The respondent for well-being questions was the target respondent or participant. The higher the negative Kessler 6 score is, the better the mental health is. The mental health index is the Z-score index of negative Kessler 6 score and life satisfaction.

** Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

6. Benefit-Cost Calculations

The activity had large positive effects on the welfare of participant households in all treatment arms. Since the cost of the interventions is substantial, it is especially important to put the benefits in relation to the costs incurred. Benefit-cost comparisons are difficult, however, both because of questions about attribution—and categorization—of costs and because of questions about the value and measurement of benefits. On the cost side, we have received detailed cost data from the implementer. On the benefits side, we use the treatment effect estimates on consumption to calculate the total benefits incurred.

The main rationale for using consumption as the measure of benefits is that most intermediate effects of the activity, such as increased adoption of practices, investment into productive assets, and increased incomes, should eventually be reflected in households' total consumption. This approach will generally understate the benefits of the activity because some activity benefits do not materialize in the form of consumption and are more difficult to express in monetary values (such as increased psychological well-being and the non-monetary value of education) because some benefits will be realized only in the long-run (such as improved consumption of children later in life as a result of improved childhood nutrition). Some benefits are not captured in the consumption aggregate we use because they are difficult to value in the context of this study (such as the value of housing).

We compute the return on investment by comparing the costs incurred by the activity with a net present value of the estimated stream of consumption benefits under different scenarios of future impacts. We consider five scenarios, which are summarized in Figure 9. In each scenario, we assume a discounting rate of 5% per year, following previous assumptions in the literature (see Banerjee et al., 2015), that captures the (social) rate of discounting due to cost of capital, opportunity costs, and uncertainty. The consumption benefit of activity in project Year 3 is estimated based on the endline survey. After discounting to Year 1, a hypothetical benefit of 100 in Year 3 has a present value of about 90 (100*0.95*0.95), which is the value shown in Figure 10 for Year 3 in every scenario. In each scenario, we then make assumptions about the benefits in the time periods for which we do not have estimates of impact. In scenarios I and II, the measured Year-3 benefits of the activity apply at 100% to Years 1 through 5 (Scenario I) and 10 (Scenario II) but drop to 0% after that time. In scenarios IV and V, benefits dissipate at a constant rate of 10% (Scenario IV) and 20% (Scenario V) per year, respectively. In the most optimistic scenario, Scenario III, the Year-3 benefits fully persist until infinity; but note since the future is discounted, the net present value of benefits that apply far out in the future adds little to the total benefit even under 100% assumed persistence of effects. The scenarios used in this section were chosen to cover a range of potential time paths for future benefits, including those that were measured in prior literature and those in line with the 10–20% decline in estimated treatment effects on the HFIAS, which we observe between the midline and endline round of surveying.[22]

[22] The midline survey was a short-term follow-up survey conducted between December 2019 and February 2020.

Figure 9. Persistence of long-term benefits under different scenarios

	Year 3 nominal impact		100			
	annual discounting		5%			
	Scenario:	I	II	III	IV	V
	Year	5 years of 100% effects, 0% after	10 years of 100% effects, 0% after	100% persistence	90% persistence	80% persistence
Intervention	1	100	100	100	123	156
	2	95	95	95	106	119
Endline	3	90	90	90	90	90
	4	86	86	86	77	69
	5	81	81	81	66	52
	6	0	77	77	56	40
	7	0	74	74	48	30
	8	0	70	70	41	23
	9	0	66	66	35	17
	10	0	63	63	30	13
	15	0	0	49	14	3
	20	0	0	38	6	1
	30	0	0	23	1	0
	50	0	0	8	0	0
	100	0	0	1	0	0

To calculate the treatment households' benefits in each generic scenario in Figure 9, we use the monthly consumption per capita treatment effect estimates from the endline survey (see Table 12, column 3). To account for spillovers, we add the treatment effect estimated on the spillover control discounted by one-third (as there are about two untreated eligible households in treatment villages for three treated households in each village, on average) and inflate/deflate it proportionally to the direct treatment effects of each group. We scale the benefits by the average household size at the endline (using adult equivalent, the denominator of the consumption per capita outcome) and scale by 12 months to compute the total yearly household consumption benefit. We then apply the net present value calculations in Figure 10 separately for each treatment arm. The resulting figures are shown in Figure 11, which also includes the estimated Year-3 benefits for reference. The net present values for each arm under each scenario can then be contrasted with the costs of each arm.

Figure 10. Benefits under different scenarios

		T1 Asset, ind. coaching	T2 Asset, group coaching	T3 No asset, ind. coaching
BENEFITS				
	Year 3 direct consumption benefit per year	426	457	303
	Year 3 spillover attribution	78	84	56
	Year 3 direct + spillover	504	541	359
	Net Present Values (NPVs) for different impact time paths (5% yearly discounting)			
I	5 years of 100% impact, 0% after	2,281	2,447	1,625
II	10 years of 100% impact, 0% after	4,045	4,340	2,882
III	100% persistence	10,022	10,752	7,139
IV	90% persistence	4,292	4,605	3,057
V	80% persistence	3,282	3,521	2,338

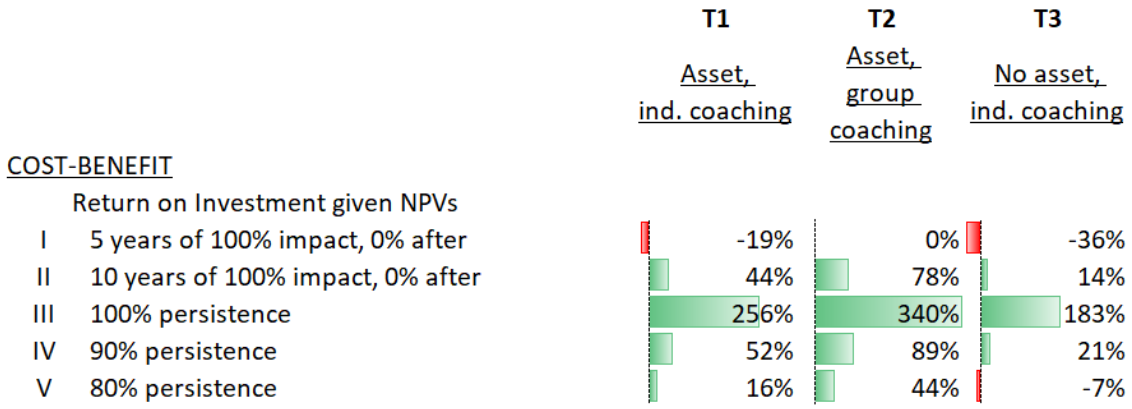
For the activity costs per participating household, we take the final cost figures provided by AVSI about the different components of the activity and isolate the difference in terms of costs between arms. Figure 11 shows that T3 is $302 cheaper than T1 due to the absence of cash asset transfer. T2 is $378 cheaper than T1 due to group coaching sessions. This difference is explained by a difference in terms of direct cost ($198) but also a difference in terms of management costs ($180) as there were fewer coaches to supervise in T2. T2 is 13% cheaper than T1. Prior to the launch of the activity, AVSI dedicated a year to the refinement of the activity. We consider that this refinement year is also going to benefit a second phase of the evaluation, and therefore, in our cost calculation, we only attribute half of its cost to the activity cost per participating household.

Figure 11. Cost per participating household

		T1 Asset, ind. coaching	T2 Asset, group coaching	T3 No asset, ind. coaching
COSTS				
(1)	Direct cash transfers	**609**	**609**	**307**
(2)	Consumption support	307	307	307
(3)	Asset transfer	302	302	0
(4)	Other direct costs during implementation	**589**	**391**	**589**
(5)	Coaching and trainer salaries	395	198	395
(6)	Sum of transfers *(1)* + other direct costs *(5)*	**1,198**	**1,000**	**896**
(7)	Refinement year	312	312	312
(8)	All else: management, M&E etc.	1,309	1,129	1,319
(9)	Total [*(6)+(7)+(8)*]	**2,819**	**2,441**	**2,527**

Figure 12 shows the rates of return, i.e., the difference between benefits and costs as a share of the costs, under different scenarios. The rates of return calculated are positive for T1 and T2 in all scenarios except under Scenario I. The rates of returns are positive for T3 in scenarios II, III, and IV but negative in Scenarios I and V. Under 100% persistence of effects, the rates of returns are very large and typically far more than 100%. But as can be seen from the strong negative relationship between the rates of return and the rate of treatment effect dissipation, the eventual cost-effectiveness of the activity will depend on the time path of those treatment effects. We plan to use a longer-run round of follow-up surveying in 2024 to be able to provide estimates of how treatment effects will evolve over time.

Figure 12. Cost-benefit under different scenarios



Since the costs for group coaching are lower than those of individual coaching and because the point estimate for T2 (group coaching) is larger than for T1 (individual coaching), T2 has higher estimated cost-effectiveness. However, note that the difference in consumption treatment effects between T1 and T2 is not statistically significant (see Table 12). Considering the cost-effectiveness of the asset, the treatment groups with the cash asset transfer (T1 and T2) have higher estimated cost-effectiveness than T3 because the benefits advantage of the with-asset groups is proportionally larger than the cost advantage of T3.

Conclusion

IPA conducted a randomized evaluation of the Graduating to Resilience RFSA with the goal of answering two questions:

1. Can a multifaceted Graduation Approach improve food security, nutrition, and self-reliance among refugees and host communities?
2. Can a lower-cost version of the activity achieve similar impacts with a greater return on investment per dollar spent on the activity?

AVSI, with Trickle Up and AIR, designed the RFSA to address the interrelated needs of the extremely poor refugee and Ugandan households in Kamwenge District, Uganda (including the Rwamwanja refugee settlement), with consumption support ($4–5 per household member per month) for a year, coaching and training, group savings through VSLAs, and FFBSs, plus (for most households) a cash transfer of approximately $300 USD to invest in an IGA. IPA worked with AVSI and BHA to design an RCT to answer these questions by evaluating three versions of the activity: A full activity (T1), a group-coaching version of the activity with asset transfers (T2), and a no asset-transfer version of the activity (T3).

Households in the three treatments were compared to control households in both treatment and pure control villages (where no activity took place). The RFSA ran from February 2019 to June 2021, and IPA conducted a baseline survey among eligible households identified by AVSI before the activity began and an endline survey after the activity concluded.

The answer to the first research question above is a resounding “yes.” Comparisons between treatment and control households show large positive impacts on activity participants and their households on key outcomes that the activity aimed to improve, including food security, nutrition, and self-reliance. A measure of productive asset values increased by between 40% (T3) and 88% (T1) on average relative to the control group mean. Total household income increased by between 32% (T3) and 45% (T1) on average relative to the control group mean. Consumption per capita increased by 18% (T3) and 25% (T1) on average relative to the control group mean. While self-reported measures of household food security increased, these increases were not reflected in an increase in anthropometric indicators, such as stunting or wasting, or, more generally, height and weight measures. Participants’ subjective well-being increased substantially as well, with households reporting better mental health and higher life satisfaction.

Regarding the second research question above, the answer is a “yes, but…”. Three variations of the activity were tested, Graduation Approach with individual coaching and a cash asset transfer (T1), an estimated 13% cheaper Graduation Approach with group coaching and a cash asset transfer (T2), and an estimated 10% cheaper Graduation Approach with individual coaching but without cash asset transfer (T3). This study shows that the lower-cost versions also have large impacts, with T2’s impacts similar to those of T1 and with T3 showing lower but sizable impacts.

Combining the estimated consumption impacts with cost data and assumptions about discounting and dissipation of effects over time, we find large positive returns on investment for

all versions of the activity under most scenarios. The group coaching arm (T2) has similar impacts to the individual coaching arm (T1) but 13% lower costs and therefore performs best in the cost-benefit analysis. T3 (no asset) performs somewhat worse than T1 and T2 and has a negative return on investment under certain assumptions, suggesting that cost savings might need to focus on the non-transfer components of the activity.

Together, these results show that the Graduating to Resilience RFSA was successful at improving nutrition, well-being, and self-reliance for poor refugees and host communities in Kamwenge, Uganda. Based on these findings, the somewhat cheaper group-coaching version of the activity appears to be the "best buy" among the activity variations. We plan to use a longer-run round of follow-up surveying in several years to be able to provide estimates of how treatment effects will evolve over time.

Annex A: Balance of Baseline Characteristics by Community

Table 17. Balance of baseline characteristics, treatment versus control villages, for household interviewed at endline, refugee sample

	(1)			(2)			(1)–(2)
	Treatment villages			Control villages			Tvil vs. Cvil
	N	Mean	SD	N	Mean	SD	P-Value
Number of household members	4,166	5.56	2.45	1,121	5.59	2.36	0.90
Age of household head	4,166	35.82	12.09	1,121	35.89	12.6	0.93
Number of children under 18 in HH	4,166	3.52	2.13	1,121	3.52	2.03	0.94
Female head of household	4,166	0.59	0.49	1,121	0.57	0.49	0.68
Number of rooms in the main house	4,166	2.68	1.23	1,121	2.67	1.20	0.72
Own agricultural land at time of survey	4,166	0.2	0.40	1,121	0.17	0.38	0.32
Had a business activity in the last 12 months	4,166	0.28	0.45	1,121	0.29	0.45	0.81
Employed in the last 12 months	4,165	0.65	0.48	1,121	0.65	0.48	0.75
HDDS Score (0–12)	4,166	3.01	1.35	1,121	2.97	1.32	0.61
Subjective well-being index	4,166	-0.08	1.01	1,121	0.00	1.02	0.62
Joint Test P-Value:							0.96

Table 18. Balance of baseline characteristics, treatment versus control villages, for household interviewed at endline, host sample

	(1)			(2)			(1)–(2)
	Treatment villages			Control villages			Tvil vs. Cvil
	N	Mean	SD	N	Mean	SD	P-Value
Number of household members	4,176	5.88	2.64	1,051	5.93	2.6	0.84
Age of household head	4,176	43.05	14.64	1,051	43.33	14.67	0.59
Number of children under 18 in HH	4,176	3.45	2.05	1,051	3.51	2.06	0.54
Female head of household	4,176	0.51	0.5	1,051	0.52	0.5	0.52
Number of rooms in the main house	4,176	3.08	1.24	1,051	3.04	1.2	0.53
Own agricultural land at time of survey	4,176	0.87	0.33	1,051	0.85	0.36	0.07
Had a business activity in the last 12 months	4,176	0.23	0.42	1,051	0.2	0.4	0.23
Employed in the last 12 months	4,176	0.69	0.46	1051	0.7	0.46	0.71
HDDS Score (0–12)	4,176	3.16	1.4	1051	3.16	1.43	0.86
Subjective well-being index	4,176	0.07	1	1051	0.02	0.98	0.29
Joint Test P-Value:							0.39

Annex B: Treatment Effect Estimates by Community

Table 19. Impact of the activity on key welfare outcomes, refugee sample

Variables	(1)	(2)	(3)	(4)	(5)
	Value of Productive Assets (PPP $)	Monthly Income (PPP $)	Monthly Consumption (PPP $)	Food Security Index (Z-Score)	Subjective Well-Being Index (Z-Score)
T1: Ind. Coaching + asset	358.68***	25.46***	23.30***	0.54***	0.48***
	(67.06)	(9.16)	(4.55)	(0.07)	(0.08)
T2: Group coaching + asset	353.03***	30.90***	23.27***	0.51***	0.37***
	(85.19)	(11.22)	(5.04)	(0.07)	(0.07)
T3: Ind. Coaching, no asset	199.12***	21.02**	15.06***	0.40***	0.25***
	(67.21)	(8.78)	(4.92)	(0.07)	(0.07)
Spillover Control	61.33	2.84	4.02	0.02	0.02
	(70.65)	(8.59)	(4.59)	(0.07)	(0.07)
Observations	5287	5072	5287	5287	5268
R-squared	0.02	0.01	0.02	0.06	0.03
Mean in Pure Control	310.10	92.32	97.21	-0.08	0.02
SD in Pure Control	718.30	140.00	76.78	0.97	1.00
P-value of H0:					
T1 = T2	0.95	0.61	0.99	0.62	0.11
Avg(T1, T2) = T3	0.01	0.46	0.01	0.01	0.00
Avg(T1, T2) ref. = avg(T1, T2) h.	0.07	0.01	0.56	0.01	0.00
T3 ref. = T3 host	0.58	0.13	0.52	0.01	0.00

Notes: The Food Security index is a z-score index of three components (FCS, Negative HFIAS, and Length/height-for-age for children under 5), standardized to a mean of 0 and SD of 1 in the Pure Control. The Subjective well-being index is an analogously constructed z-score index of two components (Negative Kessler 6 score and Life satisfaction from 1 to 10)

** Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 20. Impact of the activity on key welfare outcomes, host sample

Variables	(1) Value of Productive Assets (PPP $)	(2) Monthly Income (PPP $)	(3) Monthly Consumption (PPP $)	(4) Food Security Index (Z-Score)	(5) Subjective Well-Being Index (Z-Score)
T1: Ind. Coaching + asset	684.63***	68.47***	24.87***	0.72***	0.76***
	(134.55)	(14)	(4.23)	(0.05)	(0.06)
T2: Group coaching + asset	501.76***	70.07***	28.41***	0.77***	0.73***
	(113.94)	(17.32)	(4.37)	(0.05)	(0.05)
T3: Ind. Coaching, no asset	272.66**	49.42***	19.28***	0.62***	0.64***
	(122.92)	(13.61)	(4.08)	(0.05)	(0.05)
Spillover Control	1.79	14.69	8.35*	0.14**	0.12**
	(123.38)	(15.67)	(4.94)	(0.06)	(0.06)
Observations	5227	4784	5227	5227	5190
R-squared	0.04	0.02	0.03	0.11	0.11
Mean in Pure Control	877.90	106.40	91.16	0.09	-0.02
SD in Pure Control	2,033.00	198.90	80.45	1.03	1.00
P-value of H0:					
T1 = T2	0.12	0.93	0.29	0.29	0.65
Avg(T1, T2) = T3	0.00	0.14	0.00	0.01	0.03
Avg(T1, T2) ref. = avg(T1, T2) host	0.07	0.05	0.56	0.01	0.00
T3 ref. = T3 host	0.58	0.09	0.52	0.01	0.00

Notes: The Food Security index is a z-score index of three components (FCS, Negative HFIAS, and Length/height-for-age for children under 5), standardized to a mean of 0 and SD of 1 in the Pure Control. The Subjective well-being index is an analogously constructed z-score index of two components (Negative Kessler 6 score and Life satisfaction from 1 to 10)

** Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 21. Value of productive assets (PPP $), refugee sample

Variables	(1)	(2)	(3)	(4)	(5)
	Productive Assets)	Livestock Owned	Non-Fixed Durable Productive Assets	Livestock Fixed Assets	Business Inventory
T1: Ind. Coaching + asset	358.68***	291.95***	29.23***	16.77***	10.03
	(67.06)	(67.59)	(3.88)	(2.92)	(7.06)
T2: Group coaching + asset	353.03***	250.52***	24.57***	12.71***	10.51
	(85.19)	(66.73)	(3.73)	(2.7)	(6.85)
T3: Ind. Coaching, no asset	199.12***	166.98***	16.23***	9.08***	-1.22
	(67.21)	(63.49)	(3.12)	(2.36)	(5.8)
Spillover Control	61.33	70.39	1.88	2.52	-4.69
	(70.65)	(69.35)	(2.8)	(1.92)	(5.72)
Observations	5,287	5,286	5,287	5,280	5,286
R-squared	0.02	0.02	0.06	0.02	0
Mean in Pure Control	310.10	218.50	49.85	7.80	18.03
SD in Pure Control	718.30	646.60	42.22	28.58	92.78
P-value of H0:					
T1 = T2	0.95	0.48	0.19	0.28	0.93
Avg(T1, T2) = T3	0.01	0.04	0.00	0.01	0.03
Avg(T1, T2) ref. = avg(T1, T2) h	0.07	0.14	0.01	0.00	0.03
T3 ref. = T3 host	0.58	0.92	0.05	0.08	0.15

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 22. Value of productive assets (PPP $), host sample

Variables	(1)	(2)	(3)	(4)	(5)
	Productive Assets	Livestock Owned	Non-Fixed Durable Productive Assets	Livestock Fixed Assets	Business Inventory
T1: Ind. Coaching + asset	684.63***	534.03***	36.95***	33.24***	39.64***
	(134.55)	(128.14)	(4.04)	(5.36)	(10.17)
T2: Group coaching + asset	501.76***	369.54***	41.97***	29.22***	27.23***
	(113.94)	(106.93)	(4.55)	(4.51)	(9.15)
T3: Ind. Coaching, no asset	272.66**	180.38	26.64***	18.67***	13.23*
	(122.92)	(114.47)	(4.43)	(4.62)	(7.86)
Spillover Control	1.79	-39.92	2.65	2.51	0.42
	(123.38)	(116.16)	(3.39)	(4.75)	(6.88)
Observations	5,227	5,227	5,227	5,223	5,227
R-squared	0.04	0.04	0.06	0.04	0.01
Mean in Pure Control	877.90	745.50	63.81	33.57	25.28
SD in Pure Control	2,033.00	1,955.00	69.23	74.28	146.40
P-value of H0:	1.00	0.81	1.00	0.36	0.08
T1 = T2	0.12	0.13	0.30	0.41	0.16
Avg(T1, T2) = T3	0.00	0.00	0.00	0.00	0.02
Avg(T1, T2) ref. = avg(T1, T2) host	0.07	0.14	0.01	0.00	0.03
T3 ref. = T3 host	0.58	0.92	0.05	0.08	0.15

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 23. Income per month (PPP $), refugee sample

Variables	(1)	(2)	(3)	(4)	(5)
	Total Income	Paid Labor Income	Business Profit	Net Income from Livestock	Value of Crop Production Net of Costs
T1: Ind. Coaching + asset	25.46***	-7.18*	21.73***	-1.48	9.99***
	(9.16)	(4.06)	(5.65)	(3.52)	(2.2)
T2: Group coaching + asset	30.90***	-2.14	19.44***	-0.07	11.10***
	(11.22)	(5.21)	(6.78)	(2.94)	(2.53)
T3: Ind. Coaching, no asset	21.02**	-2.64	9.49*	4.08	8.21***
	(8.78)	(4.18)	(5.29)	(3.03)	(2.27)
Spillover Control	2.84	0.66	-3.88	3.07	2.88
	(8.59)	(5.01)	(5.02)	(2.42)	(1.94)
Observations	5,072	5,278	5,270	5,271	5,113
R-squared	0.01	0	0.02	0	0.02
Mean in Pure Control	92.32	39.29	30.26	3.60	16.77
SD in Pure Control	140.00	73.01	89.15	36.30	25.54
P-value of H0:					
T1 = T2	0.61	0.28	0.69	0.70	0.57
Avg(T1, T2) = T3	0.46	0.63	0.05	0.08	0.17
Avg(T1, T2) ref. = avg(T1, T2) host	0.01	0.78	0.89	0.00	0.00
T3 ref. = T3 host	0.13	0.52	0.90	0.28	0.05

Notes: Data were collected for different recall periods and scaled to monthly in this table. Values are in PPP$. Total income is the sum of 'paid labor income', 'business profit', 'livestock income' and 'crop production'. 'Value of crop production net of costs' is the sum of the value of crops output discounted by a cost factor to account for production that is based on the average difference between the value of crops harvested and expenses incurred for the random subsample for which full cost data was collected.

** Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 24. Income per month (PPP $), host sample

Variables	(1) Total Income	(2) Paid Labor Income	(3) Business Profit	(4) Net Income from Livestock	(5) Value of Crop Production Net of Costs
T1: Ind. Coaching + asset	68.47***	-3.18	19.91***	24.41***	23.34***
	(14)	(3.98)	(4.64)	(7.82)	(3.98)
T2: Group coaching + asset	70.07***	-3.01	19.62***	22.18***	23.26***
	(17.32)	(3.67)	(4.68)	(7.01)	(3.8)
T3: Ind. Coaching, no asset	49.42***	1.1	10.28**	11.12*	16.70***
	(13.61)	(4.15)	(4.36)	(5.77)	(3.64)
Spillover Control	14.69	1.47	3.33	1.2	4.75
	(15.67)	(3.76)	(3.65)	(6.22)	(3.75)
Observations	4,784	5,203	5,130	5,211	4,905
R-squared	0.02	0.01	0.02	0.01	0.04
Mean in Pure Control	106.40	36.09	13.15	10.56	40.75
SD in Pure Control	198.90	70.63	63.80	100.80	60.20
P-value of H0:					
T1 = T2	0.93	0.96	0.95	0.83	0.98
Avg(T1, T2) = T3	0.14	0.26	0.01	0.05	0.05
Avg(T1, T2) ref. = avg(T1, T2) host	0.05	0.78	0.89	0.00	0.00
T3 ref. = T3 host	0.09	0.52	0.90	0.54	0.05

Notes: Data were collected for different recall periods and scaled to monthly in this table. Values are in PPP$. Total income is the sum of 'paid labor income', 'business profit', 'livestock income' and 'crop production'. 'Value of crop production net of costs' is the sum of the value of crops output discounted by a cost factor to account for production that is based on the average difference between the value of crops harvested and expenses incurred for the random subsample for which full cost data was collected.

** Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 25. Consumption (PPP $), refugee sample

Variables	(1)	(2)	(3)	(4)
	Total	Food	Non-Food	Durable Goods
T1: Ind. Coaching + asset	23.30***	14.61***	8.50***	0.32***
	(4.55)	(3.51)	(2.22)	(0.07)
T2: Group coaching + asset	23.27***	14.62***	8.52***	0.31***
	(5.04)	(3.48)	(2.58)	(0.07)
T3: Ind. Coaching, no asset	15.06***	8.23**	6.73***	0.21***
	(4.92)	(3.37)	(2.54)	(0.07)
Spillover Control	4.02	0.57	3.44	0
	(4.59)	(3.07)	(2.57)	(0.05)
Observations	5,287	5,287	5,287	5,287
R-squared	0.02	0.01	0.02	0.02
Mean in Pure Control	97.21	60.58	36.46	0.31
SD in Pure Control	76.78	54.67	35.29	0.97
P-value of H0:				
T1 = T2	0.99	1.00	1.00	0.86
Avg(T1, T2) = T3	0.01	0.01	0.37	0.12
Avg(T1, T2) ref. = avg(T1, T2) host	0.56	0.16	0.62	0.66
T3 ref. = T3 host	0.52	0.06	0.35	0.91

Notes: Food consumption based on 7-day recall, non-food consumption based on 30-day and 12-month recall. All items are rescaled to monthly consumption. All values are in PPP$. Durables are defined as appliances and furnishings within the household; per-month durable consumption is computed as 1/12 of 10% of the value of durable household asset holdings. Total consumption reflects sums of all items.

** Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 26. Consumption (PPP $), host sample

Variables	(1)	(2)	(3)	(4)
	Total	Food	Non-Food	Durable Goods
T1: Ind. Coaching + asset	24.87***	18.61***	6.06**	0.33***
	(4.23)	(2.24)	(2.84)	(0.04)
T2: Group coaching + asset	28.41***	20.75***	7.46***	0.36***
	(4.37)	(2.46)	(2.83)	(0.04)
T3: Ind. Coaching, no asset	19.28***	16.00***	3.18	0.22***
	(4.08)	(2.11)	(2.74)	(0.05)
Spillover Control	8.35*	6.32**	1.98	0.10**
	(4.94)	(2.88)	(2.94)	(0.04)
Observations	5,227	5,227	5,227	5,227
R-squared	0.03	0.04	0.01	0.03
Mean in Pure Control	91.16	56.91	33.97	0.47
SD in Pure Control	80.45	35.64	62.85	0.68
P-value of H0:				
T1 = T2	0.29	0.31	0.46	0.61
Avg(T1, T2) = T3	0.00	0.04	0.01	0.01
Avg(T1, T2) ref. = avg(T1, T2) host	0.56	0.16	0.62	0.66
T3 ref. = T3 host	0.52	0.06	0.35	0.91

Notes: Food consumption based on 7-day recall, non-food consumption based on 30-day and 12-month recall. All items are rescaled to monthly consumption. All values are in PPP$. Durables are defined as appliances and furnishings within the household; per-month durable consumption is computed as 1/12 of 10% of the value of durable household asset holdings. Total consumption reflects sums of all items.

** Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 27. Food security, refugee

Variables	(1)	(2)	(3)	(4)
	Food Security Index	FCS	Negative HFIAS	Length/Height-for-Age for Children Under 5
T1: Ind. Coaching + asset	0.54***	7.04***	3.93***	-0.05
	(0.07)	(0.91)	(0.48)	(0.08)
T2: Group coaching + asset	0.51***	7.27***	3.55***	-0.06
	(0.07)	(1.04)	(0.48)	(0.07)
T3: Ind. Coaching, no asset	0.40***	4.69***	2.81***	0.01
	(0.07)	(1.09)	(0.45)	(0.06)
Spillover Control	0.02	1.3	0.48	-0.12*
	(0.07)	(0.92)	(0.47)	(0.07)
Observations	5,287	5,287	5,287	5,287
R-squared	0.06	0.04	0.07	0
Mean in Pure Control	-0.08	47.62	-9.01	-0.06
SD in Pure Control	0.97	13.93	6.22	1.01
P-value of H0:				
T1 = T2	0.62	0.81	0.30	0.88
Avg(T1, T2) = T3	0.01	0.00	0.00	0.12
Avg(T1, T2) ref. = avg(T1, T2) host	0.01	0.07	0.00	0.46
T3 ref. = T3 host	0.01	0.04	0.01	0.83

Notes: Food consumption based on 7-day recall, non-food consumption based on 30-day and 12-month recall. All items are rescaled to monthly consumption. All values are in PPP$. Durables are defined as appliances and furnishings within the household; per-month durable consumption is computed as 1/12 of 10% of the value of durable household asset holdings. Total consumption reflects sums of all items.

** Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 28. Food security, host sample

Variables	(1)	(2)	(3)	(4)
	Food Security Index	FCS	Negative HFIAS	Length/Height-for-Age for Children Under 5
T1: Ind. Coaching + asset	0.72***	9.47***	5.20***	-0.05
	(0.05)	(0.77)	(0.28)	(0.05)
T2: Group coaching + asset	0.77***	8.97***	5.33***	0.05
	(0.05)	(0.82)	(0.29)	(0.05)
T3: Ind. Coaching, no asset	0.62***	7.62***	4.24***	0.03
	(0.05)	(0.83)	(0.3)	(0.05)
Spillover Control	0.14**	1.06	0.91***	0.06
	(0.06)	(0.8)	(0.33)	(0.05)
Observations	5,227	5,227	5,227	5,225
R-squared	0.11	0.11	0.16	0.01
Mean in Pure Control	0.09	51.97	-9.49	0.06
SD in Pure Control	1.03	15.32	6.24	0.99
P-value of H0:				
T1 = T2	0.29	0.50	0.57	0.02
Avg(T1, T2) = T3	0.01	0.04	0.00	0.51
Avg(T1, T2) ref. = avg(T1, T2) host	0.01	0.07	0.00	0.46
T3 ref. = T3 host	0.01	0.04	0.01	0.83

Notes: Food consumption based on 7-day recall, non-food consumption based on 30-day and 12-month recall. All items are rescaled to monthly consumption. All values are in PPP$. Durables are defined as appliances and furnishings within the household; per-month durable consumption is computed as 1/12 of 10% of the value of durable household asset holdings. Total consumption reflects sums of all items.

** Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 29. Food security, host sample

Variables	(1)	(2)	(3)
	Subjective well-being index	Negative Kessler 6 score	Life satisfaction from 1 to 10
T1: Ind. Coaching + asset	0.48***	0.85**	1.22***
	(0.08)	(0.38)	(0.16)
T2: Group coaching + asset	0.37***	0.57	0.98***
	(0.07)	(0.36)	(0.15)
T3: Ind. Coaching, no asset	0.25***	0.16	0.78***
	(0.07)	(0.34)	(0.14)
Spillover Control	0.02	-0.02	0.09
	(0.07)	(0.35)	(0.15)
Observations	5,268	5,204	5,268
R-squared	0.03	0.01	0.06
Mean in Pure Control	0.02	-6.13	3.59
SD in Pure Control	1.00	4.72	2.09
P-value of H0:			
T1 = T2	0.11	0.41	0.07
Avg(T1, T2) = T3	0.00	0.02	0.02
Avg(T1, T2) ref. = avg(T1, T2) host	0.00	0.05	0.00
T3 ref. = T3 host	0.00	0.02	0.00

Notes: The respondent for well-being questions was the target respondent or participant. The higher the negative Kessler 6 score is, the better the mental health is. The mental health index is the Z-score index of negative Kessler 6 score and life satisfaction.

** Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 30. Well-being, refugee sample

Variables	(1)	(2)	(3)
	Subjective well-being index	Negative Kessler 6 score	Life satisfaction from 1 to 10
T1: Ind. Coaching + asset	0.48***	0.85**	1.22***
	(0.08)	(0.38)	(0.16)
T2: Group coaching + asset	0.37***	0.57	0.98***
	(0.07)	(0.36)	(0.15)
T3: Ind. Coaching, no asset	0.25***	0.16	0.78***
	(0.07)	(0.34)	(0.14)
Spillover Control	0.02	-0.02	0.09
	(0.07)	(0.35)	(0.15)
Observations	5,268	5,204	5,268
R-squared	0.03	0.01	0.06
Mean in Pure Control	0.02	-6.13	3.59
SD in Pure Control	1.00	4.72	2.09
P-value of H0:			
T1 = T2	0.11	0.41	0.07
Avg(T1, T2) = T3	0.00	0.02	0.02
Avg(T1, T2) ref. = avg(T1, T2) host	0.00	0.05	0.00
T3 ref. = T3 host	0.00	0.02	0.00

Notes: The respondent for well-being questions was the target respondent or participant. The higher the negative Kessler 6 score is, the better the mental health is. The mental health index is the Z-score index of negative Kessler 6 score and life satisfaction.

** Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 31. Well-being, host sample

Variables	(1)	(2)	(3)
	Subjective well-being index	Negative Kessler 6 score	Life satisfaction from 1 to 10
T1: Ind. Coaching + asset	0.76***	1.44***	1.89***
	(0.06)	(0.23)	(0.13)
T2: Group coaching + asset	0.73***	1.49***	1.77***
	(0.05)	(0.23)	(0.12)
T3: Ind. Coaching, no asset	0.64***	1.10***	1.64***
	(0.05)	(0.22)	(0.13)
Spillover Control	0.12**	0.31	0.28**
	(0.06)	(0.23)	(0.13)
Observations	5,190	5,147	5,187
R-squared	0.11	0.03	0.11
Mean in Pure Control	-0.02	-5.66	3.25
SD in Pure Control	1.00	4.43	2.29
P-value of H0:			
T1 = T2	0.65	0.83	0.43
Avg(T1, T2) = T3	0.03	0.05	0.12
Avg(T1, T2) ref. = avg(T1, T2) host	0.00	0.05	0.00
T3 ref. = T3 host	0.00	0.02	0.00

Notes: The respondent for well-being questions was the target respondent or participant. The higher the negative Kessler 6 score is, the better the mental health is. The mental health index is the Z-score index of negative Kessler 6 score and life satisfaction.

** Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Annex C: Treatment Effect Estimates for Additional Outcomes

Table 32. Land ownership and use, combined sample

Variables	(1)	(2)
	Owned Land (Square Meters)	Cultivated Land (Square Meters)
T1: Ind. coaching + asset	1,197.10***	1,335.46***
	(164.69)	(242.81)
T2: Group coaching + asset	1,198.95***	1,456.87***
	(167.39)	(242.81)
T3: Ind. coaching, no asset	799.65***	930.78***
	(154.59)	(202.34)
Spillover Control	101.34	-80.94
	(154.58)	(202.34)
Observations	10,514	10,509
R-squared	0.06	0.04
Mean in Pure Control	2,757	3,844.52
SD in Pure Control	3,142	1,842.94
P-value of H0:		
T1 = T2	0.986	0.534
Avg(T1, T2) = T3	0.005	0.010
Avg(T1, T2) ref. = avg(T1, T2) host	0.056	0.829
T3 ref. = T3 host	0.134	0.871

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 33. Land ownership and use, refugee sample

Variables	(1)	(2)
	Owned Land (Square Meters)	Cultivated Land (Square Meters)
T1: Ind. coaching + asset	1,178.92***	1497.34***
	(253.69)	(283.28)
T2: Group coaching + asset	796.94***	1375.93***
	(235.67)	(283.28)
T3: Ind. coaching, no asset	569.99***	890.31***
	(198.35)	(242.81)
Spillover Control	35.81	80.94
	(195.11)	(202.34)
Observations	5,287	5284
R-squared	0.04	0.04
Mean in Pure Control	2,500	3,277.96
SD in Pure Control	2,759	3,237.49
P-value of H0:		
T1 = T2	0.110	0.600
Avg(T1, T2) = T3	0.016	0.006
Avg(T1, T2) ref. = avg(T1, T2) host	0.150	0.829
T3 ref. = T3 host	0.215	0.871

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 34. Land ownership and use, host sample

Variables	(1)	(2)
	Owned Land (Square Meters)	Cultivated Land (Square Meters)
T1: Ind. coaching + asset	1,377.25***	1173.59***
	(265.15)	(323.75)
T2: Group coaching + asset	1,679.99***	1,537.81***
	(267.95)	(364.22)
T3: Ind. coaching, no asset	1,081.56***	930.78***
	(263.33)	(364.22)
Spillover Control	158.26	-283.28
	(257.36)	(323.75)
Observations	5,227	5,225
R-squared	0.04	0.03
Mean in Pure Control	3,111	4,411.08
SD in Pure Control	4,007	7,284.35
P-value of H0:		
T1 = T2	0.172	0.178
Avg(T1, T2) = T3	0.059	0.168
Avg(T1, T2) ref. = avg(T1, T2) host	0.056	0.829
T3 ref. = T3 host	0.134	0.871

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 35. Hours spent working by household in past 7 days, combined sample

Variable	(1)	(2)	(3)	(4)
	Livestock	Business	Employment	Total Time Spent Working
T1: Ind. coaching + asset	2.67***	4.07***	-3.60***	3.07**
	(0.63)	(0.85)	(0.97)	(1.34)
T2: Group coaching + asset	3.42***	2.45***	-3.75***	2.07
	(0.62)	(0.84)	(1.03)	(1.44)
T3: Ind. coaching, no asset	2.29***	1.38*	-1.11	2.52*
	(0.62)	(0.79)	(1.04)	(1.35)
Spillover Control	-0.05	1	-0.8	0.13
	(0.6)	(0.76)	(1.05)	(1.32)
Observations	10,513	10,505	10,514	10,504
R-squared	0.14	0.01	0.02	0.07
Mean in Pure Control	8.97	5.18	18.73	32.87
SD in Pure Control	15.94	17.63	25.78	34.48
P-value of H0:				
T1 = T2	0.31	0.07	0.88	0.48
Avg(T1, T2) = T3	0.22	0.01	0.00	0.95
Avg(T1, T2) ref. = avg(T1, T2) host	0.05	0.23	0.91	0.10
T3 ref. = T3 host	0.01	0.87	0.19	0.03

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 36. Hours spent working by household in past 7 days, refugee sample

Variables	(1)	(2)	(3)	(4)
	Livestock	Business	Employment	Total Time Spent Working
T1: Ind. coaching + asset	1.21*	2.80**	-4.42***	-0.45
	(0.62)	(1.33)	(1.17)	(1.69)
T2: Group coaching + asset	2.96***	1.94	-3.08**	1.78
	(0.69)	(1.29)	(1.34)	(1.97)
T3: Ind. coaching, no asset	0.88	1.27	-2.39*	-0.26
	(0.6)	(1.19)	(1.27)	(1.72)
Spillover Control	1	0.44	-1.85	-0.42
	(0.67)	(1.23)	(1.33)	(1.68)
Observations	5,287	5,284	5,287	5,284
R-squared	0.01	0	0.01	0
Mean in Pure Control	2.55	5.63	17.09	25.27
SD in Pure Control	8.33	18.32	24.20	31.46
P-value of H0:				
T1 = T2	0.03	0.49	0.25	0.21
Avg(T1, T2) = T3	0.05	0.27	0.21	0.56
Avg(T1, T2) ref. = avg(T1, T2) host	0.05	0.23	0.91	0.10
T3 ref. = T3 host	0.01	0.87	0.19	0.03

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 37. Hours spent working by household in past 7 days, host sample

Variables	(1)	(2)	(3)	(4)
	Livestock	Business	Employment	Total Time Spent Working
T1: Ind. coaching + asset	4.15***	5.38***	-2.76*	6.68***
	(1.08)	(1.12)	(1.5)	(1.98)
T2: Group coaching + asset	3.92***	2.99***	-4.41***	2.44
	(1.01)	(1.08)	(1.54)	(2.01)
T3: Ind. coaching, no asset	3.75***	1.53	0.2	5.42***
	(1.02)	(1)	(1.58)	(2)
Spillover Control	-1.04	1.61*	0.29	0.82
	(0.95)	(0.89)	(1.56)	(1.96)
Observations	5,226	5,221	5,227	5,220
R-squared	0.02	0.02	0.01	0.01
Mean in Pure Control	15.81	4.70	20.47	40.98
SD in Pure Control	18.99	16.87	27.26	35.70
P-value of H0:				
T1 = T2	0.85	0.04	0.26	0.03
Avg(T1, T2) = T3	0.78	0.01	0.00	0.66
Avg(T1, T2) ref. = avg(T1, T2) host	0.05	0.23	0.91	0.10
T3 ref. = T3 host	0.01	0.87	0.19	0.03

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 38. Self-assessment of health, combined sample

Variables	(1)	(2)	(3)	(4)
	Health on a Scale From 1 to 10	No Difficulty Lifting a 10kg Bag	No Difficulty Walking 4 hrs. Without Rest	No Difficulty Working in a Field all Day if Needed
T1: Ind. coaching + asset	0.47***	0.05***	0.09***	0.06***
	(0.09)	(0.02)	(0.02)	(0.02)
T2: Group coaching + asset	0.45***	0.06***	0.11***	0.10***
	(0.09)	(0.02)	(0.02)	(0.02)
T3: Ind. coaching, no asset	0.34***	0.02	0.09***	0.07***
	(0.1)	(0.02)	(0.02)	(0.02)
Spillover Control	0.08	-0.01	0.02	0.03
	(0.1)	(0.02)	(0.02)	(0.02)
Observations	10,448	10,452	10,444	10,453
R-squared	0.01	0.01	0.02	0.03
Mean in Pure Control	4.97	0.73	0.50	0.38
SD in Pure Control	2.34	0.45	0.50	0.49
P-value of H0:				
T1 = T2	0.78	0.89	0.28	0.08
Avg(T1, T2) = T3	0.12	0.04	0.45	0.40
Avg(T1, T2) ref. = avg(T1, T2) host	0.03	0.48	0.69	0.23
T3 ref. = T3 host	0.13	0.99	0.59	0.39

Notes: "No difficulty lifting 10kg bag," "No difficulty walking 4 hours without rest" and "No difficulty working in a field all day if needed" are self-reported

** Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 39. Self-assessment of health, refugee sample

Variables	(1)	(2)	(3)	(4)
	Health on a Scale From 1 to 10	No Difficulty Lifting a 10kg Bag	No Difficulty Walking 4 hrs. Without Rest	No Difficulty Working in a Field all Day if Needed
T1: Ind. coaching + asset	0.38***	0.04	0.08**	0.05
	(0.14)	(0.03)	(0.03)	(0.03)
T2: Group coaching + asset	0.21	0.05	0.11***	0.07*
	(0.13)	(0.03)	(0.03)	(0.04)
T3: Ind. coaching, no asset	0.19	0.02	0.08***	0.05
	(0.14)	(0.03)	(0.03)	(0.03)
Spillover Control	0.04	-0.02	0.01	0
	(0.14)	(0.03)	(0.03)	(0.04)
Observations	5,263	5,266	5,259	5,265
R-squared	0.01	0.01	0.01	0.01
Mean in Pure Control	4.98	0.74	0.51	0.47
SD in Pure Control	2.20	0.44	0.50	0.50
P-value of H0:				
T1 = T2	0.22	0.74	0.42	0.49
Avg(T1, T2) = T3	0.37	0.41	0.57	0.72
Avg(T1, T2) ref. = avg(T1, T2) host	0.03	0.48	0.69	0.23
T3 ref. = T3 host	0.13	0.99	0.59	0.39

Notes: "No difficulty lifting 10kg bag," "No difficulty walking 4 hours without rest" and "No difficulty working in a field all day if needed" are self-reported

** Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 40. Self-assessment of health, host sample

Variables	(1)	(2)	(3)	(4)
	Health on a Scale From 1 to 10	No Difficulty Lifting a 10kg Bag	No Difficulty Walking 4 hrs. Without Rest	No Difficulty Working in a Field all Day if Needed
T1: Ind. coaching + asset	0.58***	0.07***	0.10***	0.08***
	(0.12)	(0.02)	(0.03)	(0.03)
T2: Group coaching + asset	0.70***	0.07***	0.12***	0.13***
	(0.13)	(0.02)	(0.03)	(0.03)
T3: Ind. coaching, no asset	0.49***	0.02	0.10***	0.09***
	(0.14)	(0.02)	(0.03)	(0.03)
Spillover Control	0.14	0.01	0.03	0.06**
	(0.15)	(0.03)	(0.03)	(0.03)
Observations	5,185	5,186	5,185	5,188
R-squared	0.02	0.01	0.02	0.02
Mean in Pure Control	4.96	0.71	0.48	0.29
SD in Pure Control	2.48	0.46	0.50	0.45
P-value of H0:				
T1 = T2	0.29	0.91	0.52	0.06
Avg(T1, T2) = T3	0.16	0.02	0.68	0.35
Avg(T1, T2) ref. = avg(T1, T2) host	0.03	0.48	0.69	0.23
T3 ref. = T3 host	0.13	0.99	0.59	0.39

Notes: "No difficulty lifting 10kg bag," "No difficulty walking 4 hours without rest" and "No difficulty working in a field all day if needed" are self-reported

** Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Annex D: Treatment Effect Estimates for Bureau for Humanitarian Indicators

Table 41. Poverty level, combined sample

Variables	(1) Daily Consumption Per Capita ($PPP)	(2) Daily Consumption P.C. < $1.90	(3) Among Those Below Poverty Line: Shortfall Relative to Poverty-Line
T1: Ind. coaching + asset	0.80***	-0.19***	-0.09***
	(0.1)	(0.02)	(0.02)
T2: Group coaching + asset	0.86***	-0.21***	-0.07***
	(0.11)	(0.02)	(0.02)
T3: Ind. coaching, no asset	0.57***	-0.18***	-0.07***
	(0.1)	(0.02)	(0.02)
Spillover control	0.20*	-0.02	-0.02
	(0.11)	(0.02)	(0.02)
	0	0	0
Observations	10,514	10,514	2,767
R-squared	0.02	0.05	0.04
Mean in pure control	3.14	0.38	0.31
SD in pure control	2.62	0.48	0.25
P-value of H0:	0	0	0
T1 = T2	0.544	0.192	0.362
Avg(T1, T2) = T3	0	0.134	0.585
Avg(T1, T2) ref. = avg(T1, T2) host	0.564	0.212	0.401

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 42. Poverty level, refugee sample

Variables	(1)	(2)	(3)
	Consumption Per Adult Equivalent (Scaled to Daily $ PPP)	Household Living on Less than $2.17 PPP/Day per Adult Equivalent	Among Those Below Poverty Line: Shortfall Relative to Poverty-Line
T1: Ind. coaching + asset	0.78***	-0.16***	-0.07***
	(0.15)	(0.03)	(0.02)
T2: Group coaching + asset	0.78***	-0.18***	-0.06**
	(0.17)	(0.03)	(0.03)
T3: Ind. coaching + no asset	0.50***	-0.14***	-0.06***
	(0.16)	(0.03)	(0.02)
Spillover control	0.13	-0.02	-0.02
	(0.15)	(0.03)	(0.02)
Observations	5,287	5,287	1,400
R-squared	0.02	0.03	0.02
Mean in Pure Control	3.24	0.36	0.31
SD in Pure Control	2.56	0.48	0.23
P-value of H0:			
T1 = T2	0.992	0.362	0.587
Avg(T1, T2) = T3	0.013	0.187	0.986
Avg(T1, T2) ref. = avg(T1, T2) host	0.564	0.212	0.401
T3 ref. = T3 host	0.516	0.1	0.843

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 43. Poverty level, host sample

Variables	(1)	(2)	(3)
	Consumption Per Adult Equivalent (Scaled to Daily $ PPP)	Household Living on Less than $2.17 PPP/Day per Adult Equivalent	Among Those Below Poverty Line: Shortfall Relative to Poverty-Line
T1: Ind. coaching + asset	0.83***	-0.21***	-0.10***
	(0.14)	(0.02)	(0.02)
T2: Group coaching + asset	0.95***	-0.23***	-0.08***
	(0.15)	(0.02)	(0.02)
T3: Ind. coaching + no asset	0.64***	-0.21***	-0.07***
	(0.14)	(0.02)	(0.02)
Spillover control	0.28*	-0.03	-0.03
	(0.16)	(0.03)	(0.02)
Observations	5,227	5,227	1,367
R-squared	0.03	0.07	0.05
Mean in Pure Control	3.04	0.39	0.32
SD in Pure Control	2.68	0.49	0.26
P-value of H0:			
T1 = T2	0.285	0.363	0.406
Avg(T1, T2) = T3	0.001	0.522	0.374
Avg(T1, T2) ref. = avg(T1, T2) host	0.564	0.212	0.401
T3 ref. = T3 host	0.516	0.1	0.843

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 44. Anthropometry, combined sample

Variables	(1)	(2)	(3)	(4)
	Proportion of Children Under 5 in Household Who are Wasted (WHZ <-2)	Proportion of Children Under 5 in Household Who are Stunted (HAZ < -2)	Proportion of Children Under 5 in Household Who are of Healthy Weight	Proportion of Women of Reproductive Age Who are Underweight (BMI < 18.5)
T1: Ind. coaching + asset	0.01	0	0.01	-0.02
	(0.01)	(0.03)	(0.02)	(0.01)
T2: Group coaching + asset	0	-0.01	0.02	0.01
	(0.01)	(0.03)	(0.01)	(0.01)
T3: Ind. coaching, no asset	0	0	0.02	0
	(0.01)	(0.03)	(0.02)	(0.01)
Spillover control	0	0.01	0	0
	(0.01)	(0.03)	(0.02)	(0.01)
Observations	4,040	4,024	4,040	3,205
R-squared	0	0.02	0.01	0.01
Avg(T1, T2) = T3	0.01	0.44	0.92	0.05
Avg(T1, T2) ref. = avg(T1, T2) host	0.1	0.43	0.23	0.19
P-value of H0:	0	0	0	0
T1 = T2	0.132	0.608	0.831	0.093
Avg(T1, T2) = T3	0.888	0.699	0.545	0.717
Avg(T1, T2) ref. = avg(T1, T2) host	0.409	0.801	0.796	0.392
T3 ref. = T3 host	0.728	0.843	0.767	0.745

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 45. Anthropometry, refugee sample

Variables	(8) Proportion of Children Under 5 in Household Who are Wasted (WHZ <-2)	(5) Proportion of Children Under 5 in Household Who are Stunted (HAZ < -2)	(11) Proportion of Children Under 5 in Household Who are of Healthy Weight	(14) Proportion of Children Under 5 in Household Who Are Underweigh t (WAZ < -2)
T1: Ind. coaching + asset	0.01	0	0.01	0.03
	(0.01)	(0.04)	(0.02)	(0.03)
T2: Group coaching + asset	0	0	0.02	0.01
	(0.01)	(0.04)	(0.02)	(0.03)
T3: Ind. coaching + no asset	0	0	0.03	-0.01
	(0.01)	(0.04)	(0.02)	(0.03)
Spillover control	0	0.03	0.02	0.01
	(0.01)	(0.04)	(0.02)	(0.02)
Observations	2,217	2,204	2,217	2,221
R-squared	0	0.01	0	0
Mean in Pure Control	0.01	0.44	0.92	0.14
SD in Pure Control	0.08	0.42	0.22	0.3
P-value of H0:				
T1 = T2	0.523	0.99	0.73	0.45
Avg(T1, T2) = T3	0.301	0.918	0.563	0.21
Avg(T1, T2) ref. = avg(T1, T2) host	0.409	0.801	0.796	0.674
T3 ref. = T3 host	0.728	0.843	0.767	0.491

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 46. Anthropometry, host sample

Variables	(1) Proportion of Children Under 5 in Household Who are Wasted (WHZ <-2)	(2) Proportion of Children Under 5 in Household Who are Stunted (HAZ < -2)	(3) Proportion of Children Under 5 in Household Who are of Healthy Weight	(4) Proportion of Children Under 5 in Household Who Are Underweight (WAZ < -2)
T1: Ind. coaching + asset	0.01	0	0.01	0.02
	(0.01)	(0.04)	(0.02)	(0.03)
T2: Group coaching + asset	-0.01	-0.03	0.01	-0.01
	(0.01)	(0.04)	(0.02)	(0.02)
T3: Ind. coaching + no asset	0	0.01	0.02	0.01
	(0.01)	(0.04)	(0.02)	(0.03)
Spillover control	0.01	-0.01	-0.02	0.01
	(0.01)	(0.04)	(0.02)	(0.03)
Observations	1,823	1,820	1,823	1,837
R-squared	0.01	0.02	0.01	0.01
Mean in Pure Control	0.02	0.43	0.91	0.11
SD in Pure Control	0.12	0.44	0.25	0.28
P-value of H0:				
T1 = T2	0.141	0.384	0.902	0.253
Avg(T1, T2) = T3	0.509	0.525	0.721	0.805
Avg(T1, T2) ref. = avg(T1, T2) host	0.409	0.801	0.796	0.674
T3 ref. = T3 host	0.728	0.843	0.767	0.491

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 47. Sanitation, combined sample

Variables	(1)	(2)	(3)
	Household Using Basic Drinking Water Services	Household has a Handwashing Station with Soap and Water on Premises	Access to a Basic Sanitation Service
T1: Ind. coaching + asset	0.05**	0.13***	0.03
	(0.02)	(0.01)	(0.02)
T2: Group coaching + asset	0.03	0.14***	0.02
	(0.02)	(0.02)	(0.02)
T3: Ind. coaching, no asset	0.03	0.11***	0.01
	(0.02)	(0.01)	(0.02)
Spillover control	-0.01	0.03**	-0.01
	(0.02)	(0.01)	(0.02)
Observations	10,514	10,514	10,514
R-squared	0.18	0.08	0.07
Avg(T1, T2) = T3	0.73	0.09	0.45
Avg(T1, T2) ref. = avg(T1, T2) host	0.45	0.28	0.5
P-value of H0:	0	0	0
T1 = T2	0.269	0.835	0.741
Avg(T1, T2) = T3	0.504	0.07	0.214
Avg(T1, T2) ref. = avg(T1, T2) host	0.06	0	0.417
T3 ref. = T3 host	0.028	0	0.38

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 48. Sanitation, refugee sample

Variables	(1)	(2)	(3)
	Household Using Basic Drinking Water Services (=1)	Household has a Handwashing Station with soap and Water on Premises (=1)	Access to a Basic Sanitation Service (=1)
T1: Ind. coaching + asset	0.02	0.04**	0.05
	(0.02)	(0.02)	(0.04)
T2: Group coaching + asset	-0.01	0.06***	0.04
	(0.03)	(0.02)	(0.03)
T3: Ind. coaching + no asset	-0.01	0.04**	0.02
	(0.02)	(0.02)	(0.03)
Spillover control	-0.03	0.01	-0.01
	(0.03)	(0.02)	(0.03)
Observations	5,287	5,287	5,287
R-squared	0.01	0.02	0
Mean in Pure Control	0.91	0.07	0.56
SD in Pure Control	0.29	0.26	0.5
P-value of H0:			
T1 = T2	0.136	0.235	0.67
Avg(T1, T2) = T3	0.199	0.566	0.474
Avg(T1, T2) ref. = avg(T1, T2) host	0.06	0	0.417
T3 ref. = T3 host	0.028	0	0.38

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 49. Sanitation, host sample

Variables	(1)	(2)	(3)
	Household Using Basic Drinking Water Services (=1)	Household has a Handwashing Station with soap and Water on Premises (=1)	Access to a Basic Sanitation Service (=1)
T1: Ind. coaching + asset	0.08**	0.24***	0.01
	(0.03)	(0.02)	(0.02)
T2: Group coaching + asset	0.07**	0.22***	0.01
	(0.03)	(0.02)	(0.02)
T3: Ind. coaching + no asset	0.07**	0.19***	-0.01
	(0.03)	(0.02)	(0.02)
Spillover control	0.01	0.05**	-0.02
	(0.03)	(0.02)	(0.02)
Observations	5,227	5,227	5,227
R-squared	0.09	0.08	0.01
Mean in Pure Control	0.54	0.1	0.34
SD in Pure Control	0.5	0.3	0.47
P-value of H0:			
T1 = T2	0.739	0.588	0.99
Avg(T1, T2) = T3	0.916	0.066	0.255
Avg(T1, T2) ref. = avg(T1, T2) host	0.06	0	0.417
T3 ref. = T3 host	0.028	0	0.38

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 50. Food security, combined sample

Variables	(1)	(2)	(3)
	Food Consumption Score (FCS)	FCS of 21.5–35 (Borderline)	FCS of > 35 (Acceptable)
T1: Ind. coaching + asset	8.23***	-0.06***	0.07***
	(0.61)	(0.01)	(0.01)
T2: Group coaching + asset	8.09***	-0.06***	0.06***
	(0.65)	(0.01)	(0.01)
T3: Ind. coaching, no asset	6.13***	-0.05***	0.05***
	(0.66)	(0.01)	(0.01)
Spillover control	1.15*	0	0
	(0.61)	(0.01)	(0.01)
Observations	10,514	10,514	10,514
R-squared	0.1	0.03	0.03
Mean in Pure Control	49.73	0.12	0.87
SD in Pure Control	14.77	0.32	0.33
P-value of H0:	0	0	0
T1 = T2	0.808	0.462	0.485
Avg(T1, T2) = T3	0.001	0.13	0.091
Avg(T1, T2) ref. = avg(T1, T2) host	0.07	0.139	0.257
T3 ref. = T3 host	0.041	0.925	0.763

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 51. Food security, combined sample (continued)

Variables	(4) Household Food Insecurity Access Scale Score (0–27)	(5) Negative HFIAS Score (Higher = More Food Secure)	(6) HFIA Category: Food Secure	(7) HFIA Category: Mildly Food Insecure	(8) HFIA Category: Moderately Food Insecure	(9) HFIA Category: Severely Food Insecure
T1: Ind. coaching + asset	-4.55***	4.55***	0.26***	0.04***	-0.10***	-0.20***
	(0.27)	(0.27)	(0.02)	(0.01)	(0.02)	(0.02)
T2: Group coaching + asset	-4.42***	4.42***	0.24***	0.05***	-0.08***	-0.21***
	(0.27)	(0.27)	(0.02)	(0.01)	(0.02)	(0.02)
T3: Ind. coaching, no asset	-3.51***	3.51***	0.17***	0.04***	-0.03*	-0.18***
	(0.26)	(0.26)	(0.02)	(0.01)	(0.02)	(0.02)
Spillover control	-0.67**	0.67**	0.04***	0	-0.02	-0.02
	(0.28)	(0.28)	(0.01)	(0.01)	(0.02)	(0.02)
Observations	10,514	10,514	10,514	10,514	10,514	10,514
R-squared	0.12	0.12	0.07	0.01	0.01	0.06
Mean in Pure Control	9.24	-9.24	0.12	0.1	0.43	0.36
SD in Pure Control	6.23	6.23	0.33	0.29	0.49	0.48
P-value of H0:	0	0	0	0	0	0
T1 = T2	0.539	0.539	0.246	0.431	0.205	0.52
Avg(T1, T2) = T3	0	0	0	0.581	0	0.072
Avg(T1, T2) ref. = avg(T1, T2) h.	0.002	0.002	0.004	0.152	0.082	0.052
T3 ref. = T3 host	0.007	0.007	0.009	0.103	0.036	0.227

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 52. Food security, refugee sample

Variables	(1)	(2)	(3)
	Food Consumption Score (FCS)	FCS of 21.5–35 (Borderline)	FCS of > 35 (Acceptable)
T1: Ind. coaching + asset	7.04***	-0.07***	0.08***
	(0.91)	(0.02)	(0.02)
T2: Group coaching + asset	7.27***	-0.07***	0.08***
	(1.04)	(0.02)	(0.02)
T3: Ind. coaching, no asset	4.69***	-0.05**	0.05**
	(1.09)	(0.02)	(0.02)
Spillover control	1.3	-0.01	0.02
	(0.92)	(0.02)	(0.02)
Observations	5,287	5,287	5,287
R-squared	0.04	0.01	0.01
Mean in Pure Control	47.62	0.15	0.84
SD in Pure Control	13.93	0.36	0.37
P-value of H0:			
T1 = T2	0.807	0.928	0.763
Avg(T1, T2) = T3	0	0.08	0.037
Avg(T1, T2) ref. = avg(T1, T2) host	0.07	0.139	0.257
T3 ref. = T3 host	0.041	0.925	0.763

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 53. Food security, refugee sample (continued)

Variables	(4)	(5)	(6)	(7)	(8)	(9)
	Household Food Insecurity Access Scale Score (0–27)	Negative HFIAS Score (Higher = More Food Secure)	HFIA Category: Food Secure	HFIA Category: Mildly Food Insecure	HFIA Category: Moderately Food Insecure	HFIA Category: Severely Food Insecure
T1: Ind. coaching + asset	-3.93***	3.93***	0.21***	0.03**	-0.08***	-0.17***
	(0.48)	(0.48)	(0.03)	(0.02)	(0.03)	(0.03)
T2: Group coaching + asset	-3.55***	3.55***	0.19***	0.03*	-0.05*	-0.17***
	(0.48)	(0.48)	(0.03)	(0.02)	(0.03)	(0.03)
T3: Ind. coaching, no asset	-2.81***	2.81***	0.13***	0.02	0.01	-0.16***
	(0.45)	(0.45)	(0.03)	(0.02)	(0.03)	(0.03)
Spillover control	-0.48	0.48	0.04	-0.01	-0.03	0.01
	(0.47)	(0.47)	(0.02)	(0.01)	(0.03)	(0.04)
Observations	5,287	5,287	5,287	5,287	5,287	5,287
R-squared	0.07	0.07	0.05	0	0.01	0.03
Mean in Pure Control	9.01	-9.01	0.14	0.08	0.4	0.37
SD in Pure Control	6.22	6.22	0.35	0.27	0.49	0.48
P-value of H0:						
T1 = T2	0.303	0.303	0.495	0.95	0.264	0.876
Avg(T1, T2) = T3	0	0	0.004	0.486	0.005	0.594
Avg(T1, T2) ref. = avg(T1, T2) host	0.002	0.002	0.004	0.152	0.082	0.052
T3 ref. = T3 host	0.007	0.007	0.009	0.103	0.036	0.227

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 54. Food security, host sample

Variables	(1)	(2)	(3)
	Food Consumption Score (FCS)	FCS of 21.5–35 (Borderline)	FCS of > 35 (Acceptable)
T1: Ind. coaching + asset	9.47***	-0.05***	0.06***
	(0.77)	(0.01)	(0.01)
T2: Group coaching + asset	8.97***	-0.04***	0.05***
	(0.82)	(0.01)	(0.01)
T3: Ind. coaching, no asset	7.62***	-0.05***	0.06***
	(0.83)	(0.01)	(0.01)
Spillover control	1.06	0.01	-0.01
	(0.8)	(0.01)	(0.01)
Observations	5,227	5,227	5,227
R-squared	0.11	0.04	0.04
Mean in Pure Control	51.97	0.08	0.91
SD in Pure Control	15.32	0.27	0.29
P-value of H0:			
T1 = T2	0.502	0.145	0.081
Avg(T1, T2) = T3	0.035	0.961	0.898
Avg(T1, T2) ref. = avg(T1, T2) host	0.07	0.139	0.257
T3 ref. = T3 host	0.041	0.925	0.763

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 55. Food security, host sample (continued)

Variables	(4) Household Food Insecurity Access Scale Score (0–27)	(5) Negative HFIAS Score (Higher = More Food Secure)	(6) HFIA Category: Food Secure	(7) HFIA Category: Mildly Food Insecure	(8) HFIA Category: Moderately Food Insecure	(9) HFIA Category: Severely Food Insecure
T1: Ind. coaching + asset	-5.20***	5.20***	0.31***	0.05***	-0.13***	-0.23***
	(0.28)	(0.28)	(0.02)	(0.02)	(0.03)	(0.02)
T2: Group coaching + asset	-5.33***	5.33***	0.29***	0.07***	-0.12***	-0.24***
	(0.29)	(0.29)	(0.02)	(0.02)	(0.02)	(0.02)
T3: Ind. coaching, no asset	-4.24***	4.24***	0.22***	0.06***	-0.07***	-0.20***
	(0.3)	(0.3)	(0.02)	(0.02)	(0.02)	(0.02)
Spillover control	-0.91***	0.91***	0.05***	0.01	-0.01	-0.04*
	(0.33)	(0.33)	(0.02)	(0.02)	(0.03)	(0.02)
Observations	5,227	5,227	5,227	5,227	5,227	5,227
R-squared	0.16	0.16	0.1	0.01	0.02	0.08
Mean in Pure Control	9.49	-9.49	0.1	0.11	0.45	0.34
SD in Pure Control	6.24	6.24	0.29	0.32	0.5	0.47
P-value of H0:						
T1 = T2	0.569	0.569	0.384	0.244	0.569	0.338
Avg(T1, T2) = T3	0	0	0	0.922	0.012	0.012
Avg(T1, T2) ref. = avg(T1, T2) host	0.002	0.002	0.004	0.152	0.082	0.052
T3 ref. = T3 host	0.007	0.007	0.009	0.103	0.036	0.227

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 56. Gender, combined sample

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	Woman in Union Earned Cash in the Past 12 Months	Man in Union Earned Cash in the Past 12 Months	Woman in Union Participated in Decisions on use of Self-Earned Cash	Woman in Union Who Earned Cash Particip. in Decisions use of Partner-Earned Cash	Men in Union Whose Partner Participated in Decisions on use of Self-Earned Cash	Women in Union Who Make decisions About Modern Family Planning Methods
T1: Ind. coaching + asset	-0.15***	-0.07	-0.01	-0.02	0	0.04*
	(0.04)	(0.05)	(0.03)	(0.06)	(0.07)	(0.03)
T2: Group coaching + asset	-0.12***	-0.03	-0.01	0.05	0	0.03
	(0.04)	(0.06)	(0.04)	(0.05)	(0.06)	(0.03)
T3: Ind. coaching, no asset	-0.08**	-0.08*	0	-0.03	0	0.03
	(0.04)	(0.05)	(0.03)	(0.05)	(0.07)	(0.03)
Spillover control	-0.03	-0.04	-0.02	0.01	0.07	-0.01
	(0.04)	(0.05)	(0.03)	(0.05)	(0.06)	(0.03)
Observations	3,473	1,504	1,615	1,298	853	3,141
R-squared	0.04	0.03	0.03	0.03	0.04	0.01
Mean in Pure Control	0.54	0.61	0.87	0.52	0.67	0.81
SD in Pure Control	0.5	0.49	0.34	0.5	0.47	0.4
P-value of H0:	0	0	0	0	0	0
T1 = T2	0.393	0.478	0.95	0.253	0.951	0.575
Avg(T1, T2) = T3	0.094	0.363	0.794	0.338	0.929	0.666
Avg(T1, T2) ref. = avg(T1, T2) h.	0.161	0.928	0.255	0.164	0.986	0.281
T3 ref. = T3 host	0.873	0.745	0.433	0.946	0.602	0.329

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 57. Gender, refugee sample

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	Woman in Union Earned Cash in the Past 12 Months (=1)	Man in Union Earned Cash in the Past 12 Months (=1)	Woman in Union Participated in Decisions on use of Self-Earned Cash	Woman in Union Who Earned Cash Particip. in Decisions use of Partner-Earned Cash	Men in Union Whose Partner Participated in Decisions on use of Self-Earned Cash	Women in Union Who Make decisions About Modern Family Planning Methods
T1: Ind. coaching + asset	-0.10*	-0.07	-0.04	-0.07	0.03	0.04
	(0.05)	(0.08)	(0.06)	(0.09)	(0.11)	(0.04)
T2: Group coaching + asset	-0.08	-0.01	-0.04	-0.03	-0.02	0.07*
	(0.05)	(0.08)	(0.06)	(0.07)	(0.1)	(0.04)
T3: Ind. coaching, no asset	-0.08	-0.07	-0.03	-0.04	0.03	0.05
	(0.05)	(0.08)	(0.06)	(0.08)	(0.1)	(0.04)
Spillover control	-0.04	-0.08	-0.05	-0.06	0.02	0.02
	(0.06)	(0.09)	(0.05)	(0.08)	(0.1)	(0.04)
Observations	1,870	660	796	674	374	1,772
R-squared	0.02	0.01	0.01	0	0.01	0.01
Mean in Pure Control	0.48	0.6	0.85	0.63	0.73	0.76
SD in Pure Control	0.5	0.49	0.36	0.49	0.45	0.43
P-value of H0:						
T1 = T2	0.753	0.46	0.92	0.663	0.639	0.388
Avg(T1, T2) = T3	0.875	0.728	0.795	0.817	0.709	0.848
Avg(T1, T2) ref. = avg(T1, T2) h.	0.161	0.928	0.255	0.164	0.986	0.281
T3 ref. = T3 host	0.873	0.745	0.433	0.946	0.602	0.329

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 58. Gender, host sample

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	Woman in Union Earned Cash in the Past 12 Months (=1)	Man in Union Earned Cash in the Past 12 Months (=1)	Woman in Union Participated in Decisions on use of Self-Earned Cash	Woman in Union Who Earned Cash Particip. in Decisions use of Partner-Earned Cash	Men in Union Whose Partner Participated in Decisions on use of Self-Earned Cash	Women in Union Who Make decisions About Modern Family Planning Methods
T1: Ind. Coaching + asset	-0.20***	-0.06	0.02	0.03	-0.01	0.04
	(0.04)	(0.06)	(0.04)	(0.08)	(0.08)	(0.03)
T2: Group coaching + asset	-0.16***	-0.04	0.03	0.14*	0.02	-0.03
	(0.05)	(0.08)	(0.04)	(0.08)	(0.09)	(0.03)
T3: Ind. Coaching, no asset	-0.07	-0.1	0.03	-0.03	-0.04	-0.01
	(0.05)	(0.06)	(0.04)	(0.08)	(0.09)	(0.04)
Spillover control	-0.03	-0.01	0.01	0.08	0.11	-0.04
	(0.05)	(0.07)	(0.04)	(0.07)	(0.08)	(0.04)
Observations	1,603	844	819	624	479	1,369
R-squared	0.04	0.05	0.03	0.03	0.05	0.02
Mean in Pure Control	0.6	0.62	0.88	0.41	0.63	0.86
SD in Pure Control	0.49	0.49	0.32	0.49	0.49	0.34
P-value of H0:						
T1 = T2	0.446	0.784	0.912	0.213	0.723	0.034
Avg(T1, T2) = T3	0.015	0.366	0.962	0.072	0.603	0.668
Avg(T1, T2) ref. = avg(T1, T2) host	0.161	0.928	0.255	0.164	0.986	0.281
T3 ref. = T3 host	0.873	0.745	0.433	0.946	0.602	0.329

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 59. Adaptive capacity, combined sample

Variables	(1)	(2)	(3)	(4)
	Adaptive Capacity Index	Index of Aspirations / Confidence to Adapt (0–16)	Index for Bridging Social capital (0–6)	Education and Training Index (0–7)
T1: Ind. coaching + asset	8.73***	0.34***	0.09	0.43***
	(0.85)	(0.12)	(0.11)	(0.06)
T2: Group coaching + asset	9.52***	0.42***	0.22**	0.42***
	(0.82)	(0.12)	(0.11)	(0.06)
T3: Ind. coaching, no asset	7.91***	0.38***	0.19*	0.36***
	(0.87)	(0.12)	(0.11)	(0.06)
Spillover control	0.84	0.14	0.02	0.05
	(0.77)	(0.12)	(0.1)	(0.06)
Observations	5,225	5,260	5,260	10,514
R-squared	0.09	0.07	0.03	0.02
Mean in Pure Control	36.44	9.56	3.07	0.79
SD in Pure Control	14.19	2.05	1.85	1.2
P-value of H0:	0	0	0	0
T1 = T2	0.338	0.477	0.206	0.846
Avg(T1, T2) = T3	0.147	0.975	0.703	0.285
Avg(T1, T2) ref. = avg(T1, T2) host	0.001	0.187	0.749	0.004
T3 ref. = T3 host	0.077	0.31	0.6	0.256

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 60. Adaptive capacity, combined sample (continued)

Variables	(5)	(6)	(7)	(8)
	Livelihood Diversification (Number of Livelihood Activities)	Index for Information Exposure (0-19)	Index of Asset Ownership	Index for Access to Financial Institutions (0–2)
T1: Ind. coaching + asset	0.09*	1.81***	2.28***	0.04
	(0.05)	(0.25)	(0.15)	(0.05)
T2: Group coaching + asset	0.07	2.04***	2.33***	0.04
	(0.05)	(0.25)	(0.17)	(0.05)
T3: Ind. coaching, no asset	0.07	1.85***	1.51***	0.02
	(0.06)	(0.24)	(0.17)	(0.04)
Spillover control	-0.07*	0.17	0.41***	0.03
	(0.04)	(0.23)	(0.16)	(0.04)
Observations	5,260	5,260	10,514	10,450
R-squared	0.09	0.05	0.15	0.32
Mean in Pure Control	1.91	4.13	10.06	1.04
SD in Pure Control	1.02	4.18	3.93	0.32
P-value of H0:	0	0	0	0
T1 = T2	0.728	0.371	0.745	0.493
Avg(T1, T2) = T3	0.915	0.744	0	0.012
Avg(T1, T2) ref. = avg(T1, T2) host	0.895	0	0.179	0.821
T3 ref. = T3 host	0.844	0.013	0.42	0.606

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 61. Adaptive capacity, refugee sample

Variables	(1)	(2)	(3)	(4)
	Adaptive Index	Index of Aspirations/ Confidence to Adapt (0–16)	Index for Bridging Social Capital (0–6)	Education and Training Index (0–7)
T1: ind. Coaching + asset	5.98***	0.22	0.01	0.25**
	(1.4)	(0.2)	(0.17)	(0.1)
T2: Group coaching + asset	7.05***	0.26	0.23	0.30***
	(1.27)	(0.19)	(0.17)	(0.11)
T3: Ind. coaching, no asset	6.36***	0.26	0.24	0.29***
	(1.38)	(0.19)	(0.18)	(0.11)
Spillover control	-0.08	0.01	-0.01	0.03
	(1.18)	(0.19)	(0.17)	(0.1)
Observations	2,607	2,630	2,630	5,287
R-squared	0.05	0.02	0.02	0.01
Mean in Pure Control	36.03	9.26	2.9	0.93
SD in Pure Control	14.84	2.09	1.86	1.36
P-value of H0:				
T1 = T2	0.413	0.83	0.133	0.576
Avg(T1, T2) = T3	0.906	0.89	0.352	0.858
Avg(T1, T2) ref. = avg(T1, T2) host	0.001	0.187	0.749	0.004
T3 ref. = T3 host	0.077	0.31	0.6	0.256

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 62. Adaptive capacity, refugee sample (continued)

Variables	(5) Livelihood Diversification (Number of Livelihood Activities)	(6) Index for Information Exposure (0–19)	(7) Index of Asset Ownership	(8) Index for Access to Financial Institutions (0–2)
T1: Ind. Coaching + asset	0.1	0.99***	2.09***	0.03
	(0.1)	(0.35)	(0.22)	(0.08)
T2: Group coaching + asset	0.08	1.27***	2.16***	0.03
	(0.1)	(0.34)	(0.26)	(0.08)
T3: Ind. coaching, no asset	0.06	1.25***	1.38***	0
	(0.1)	(0.37)	(0.25)	(0.08)
Spillover control	-0.13	-0.07	0.32	0.01
	(0.08)	(0.32)	(0.23)	(0.08)
Observations	2,630	2,630	5,287	5,242
R-squared	0.01	0.02	0.05	0.21
Mean in Pure Control	2.21	4.14	8.91	1.07
SD in Pure Control	1.17	4.03	3.41	0.25
P-value of H0:				
T1 = T2	0.833	0.417	0.776	0.586
Avg(T1, T2) = T3	0.828	0.72	0.001	0.028
Avg(T1, T2) ref. = avg(T1, T2) host	0.895	0	0.179	0.821
T3 ref. = T3 host	0.844	0.013	0.42	0.606

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 63. Adaptive capacity, host sample

Variables	(1)	(2)	(3)	(4)
	Adaptive Index	Index of Aspirations/ Confidence to Adapt (0–16)	Index for Bridging Social Capital (0–6)	Education and Training Index (0–7)
T1: Ind. coaching + asset	11.36***	0.46***	0.17	0.61***
	(1.03)	(0.14)	(0.15)	(0.06)
T2: Group coaching + asset	12.07***	0.59***	0.2	0.54***
	(1.08)	(0.15)	(0.13)	(0.07)
T3: Ind. coaching, no asset	9.43***	0.50***	0.13	0.44***
	(1.08)	(0.14)	(0.13)	(0.06)
Spillover control	1.72*	0.28*	0.04	0.07
	(0.94)	(0.14)	(0.12)	(0.05)
Observations	2,618	2,630	2,630	5,227
R-squared	0.12	0.05	0.02	0.04
Mean in Pure Control	36.84	9.86	3.24	0.65
SD in Pure Control	13.53	1.96	1.82	0.97
P-value of H0:				
T1 = T2	0.543	0.334	0.817	0.379
Avg(T1, T2) = T3	0.027	0.843	0.617	0.031
Avg(T1, T2) ref. = avg(T1, T2) host	0.001	0.187	0.749	0.004
T3 ref. = T3 host	0.077	0.31	0.6	0.256

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 64. Adaptive capacity, host sample (continued)

Variables	(5)	(6)	(7)	(8)
	Livelihood Diversification (Number of Livelihood Activities)	Index for Information Exposure (0–19)	Index of Asset Ownership	Index for Access to Financial Institutions (0–2)
T1: Ind. coaching + asset	0.1	0.99***	2.09***	0.03
	(0.1)	(0.35)	(0.22)	(0.08)
T2: Group coaching + asset	0.08	1.27***	2.16***	0.03
	(0.1)	(0.34)	(0.26)	(0.08)
T3: Ind. coaching, no asset	0.06	1.25***	1.38***	0
	(0.1)	(0.37)	(0.25)	(0.08)
Spillover control	-0.13	-0.07	0.32	0.01
	(0.08)	(0.32)	(0.23)	(0.08)
Observations	2,630	2,630	5,287	5,242
R-squared	0.01	0.02	0.05	0.21
Mean in Pure Control	2.21	4.14	8.91	1.07
SD in Pure Control	1.17	4.03	3.41	0.25
P-value of H0:				
T1 = T2	0.833	0.417	0.776	0.586
Avg(T1, T2) = T3	0.828	0.72	0.001	0.028
Avg(T1, T2) ref. = avg(T1, T2) host	0.895	0	0.179	0.821
T3 ref. = T3 host	0.844	0.013	0.42	0.606

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 65. Absorptive capacity, combined sample

Variables	(1)	(2)	(3)	(4)
	Absorptive Capacity Index	Number of Informal Safety Nets Available in Community (0–6)	Bonding Social Capital Index (0–6)	Household Regularly Saves Cash (0–1)
T1: Ind. coaching + asset	8.49***	0.09	0.06	0.20***
	(0.84)	(0.07)	(0.11)	(0.02)
T2: Group coaching + asset	8.93***	0.15**	0.13	0.20***
	(0.9)	(0.07)	(0.11)	(0.02)
T3: Ind. coaching, no asset	7.09***	0.05	0.09	0.18***
	(0.94)	(0.07)	(0.11)	(0.02)
Spillover control	2.89***	0.02	-0.06	0.03*
	(0.93)	(0.08)	(0.1)	(0.02)
Observations	5,260	6,443	5,260	10,514
R-squared	0.15	0.13	0.03	0.05
Mean in Pure Control	44.05	2.2	3.28	0.66
SD in Pure Control	14.22	1.38	1.82	0.47
P-value of H0:	0	0	0	0
T1 = T2	0.51	0.376	0.519	0.805
Avg(T1, T2) = T3	0.013	0.191	0.929	0.041
Avg(T1, T2) ref. = avg(T1, T2) host	0	0.807	0.97	0.208
T3 ref. = T3 host	0.04	0.722	0.5	0.392

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 66. Absorptive capacity, combined sample (continue)

Variables	(5)	(6)	(7)
	Index of Asset Ownership	Index of Shock Preparedness and Mitigation (0–4)	Availability of Humanitarian Assistance from Gov't and/or NGO (0–1)
T1: Ind. coaching + asset	2.28***	0.09	0.25***
	(0.15)	(0.07)	(0.06)
T2: Group coaching + asset	2.33***	0.08	0.26***
	(0.17)	(0.07)	(0.06)
T3: Ind. coaching, no asset	1.51***	0.09	0.27***
	(0.17)	(0.07)	(0.06)
Spillover Control	0.41***	0.01	0.27***
	(0.16)	(0.07)	(0.06)
Observations	10,514	5,260	10,218
R-squared	0.15	0.11	0.13
Mean in Pure Control	10.06	0.62	0.65
SD in Pure Control	3.93	0.6	0.48
P-value of H0:	0	0	0
T1 = T2	0.745	0.936	0.377
Avg(T1, T2) = T3	0	0.97	0.203
Avg(T1, T2) ref. = avg(T1, T2) host	0.179	0.4	0
T3 ref. = T3 host	0.42	0.925	0

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 67. Absorptive capacity, refugee sample

Variables	(1)	(2)	(3)	(4)
	Absorptive Capacity Index	Number of Informal Safety Nets Available in Community (0–6)	Bonding Social Capital Index (0–6)	Household Regularly Saves Cash (0–1)
T1: Ind. coaching + asset	5.27***	0.12	0.04	0.18***
	(1.44)	(0.13)	(0.18)	(0.03)
T2: Group coaching + asset	6.26***	0.15	0.16	0.19***
	(1.59)	(0.13)	(0.18)	(0.03)
T3: Ind. coaching, no asset	5.05***	0.08	0.16	0.16***
	(1.7)	(0.14)	(0.18)	(0.03)
Spillover control	0.92	0.02	-0.03	0.05*
	(1.66)	(0.14)	(0.17)	(0.03)
Observations	2,630	3,277	2,630	5,287
R-squared	0.04	0.02	0.03	0.03
Mean in Pure Control	41.71	1.71	3.08	0.65
SD in Pure Control	13.83	1.31	1.87	0.48
P-value of H0:				
T1 = T2	0.342	0.742	0.432	0.624
Avg(T1, T2) = T3	0.478	0.5	0.625	0.321
Avg(T1, T2) ref. = avg(T1, T2) host	0	0.807	0.97	0.208
T3 ref. = T3 host	0.04	0.722	0.5	0.392

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 68. Absorptive capacity, refugee sample (continued)

Variables	(5)	(6)	(7)
	Index of Asset Ownership	Index of Shock Preparedness and Mitigation (0–4)	Availability of Humanitarian Assistance from Gov't and/or NGO (0–1)
T1: Ind. coaching + asset	2.09***	0.03	-0.06
	(0.22)	(0.13)	(0.1)
T2: Group coaching + asset	2.16***	0.03	-0.04
	(0.26)	(0.13)	(0.1)
T3: Ind. coaching, no asset	1.38***	0.08	-0.04
	(0.25)	(0.14)	(0.1)
Spillover control	0.32	-0.02	-0.04
	(0.23)	(0.13)	(0.1)
Observations	5,287	2,630	5,169
R-squared	0.05	0.09	0.02
Mean in Pure Control	8.91	0.73	0.89
SD in Pure Control	3.41	0.61	0.31
P-value of H0:			
T1 = T2	0.776	0.953	0.238
Avg(T1, T2) = T3	0.001	0.249	0.544
Avg(T1, T2) ref. = avg(T1, T2) host	0.179	0.4	0
T3 ref. = T3 host	0.42	0.925	0

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 69. Absorptive capacity, host sample

Variables	(1)	(2)	(3)	(4)
	Absorptive Capacity Index	Number of Informal Safety Nets Available in Community (0–6)	Bonding Social Capital Index (0–6)	Household Regularly Saves Cash (0–1)
T1: Ind. coaching + asset	11.63***	0.06	0.08	0.22***
	(0.95)	(0.08)	(0.14)	(0.02)
T2: Group coaching + asset	11.69***	0.15*	0.1	0.22***
	(0.96)	(0.08)	(0.13)	(0.02)
T3: Ind. coaching, no asset	9.14***	0.02	0.02	0.19***
	(0.93)	(0.08)	(0.13)	(0.02)
Spillover Control	4.88***	0.02	-0.08	0.02
	(0.95)	(0.08)	(0.12)	(0.02)
Observations	2,630	3,166	2,630	5,227
R-squared	0.12	0.02	0.02	0.06
Mean in Pure Control	46.40	2.68	3.47	0.66
SD in Pure Control	14.22	1.28	1.76	0.47
P-value of H0:				
T1 = T2	0.94	0.33	0.92	0.90
Avg(T1, T2) = T3	0.00	0.26	0.47	0.04
Avg(T1, T2) ref. = avg(T1, T2) host	0.00	0.81	0.97	0.21
T3 ref. = T3 host	0.04	0.72	0.50	0.39

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 70. Absorptive capacity, host sample (continued)

Variables	(5)	(6)	(7)
	Index of Asset Ownership	Index of Shock Preparedness and Mitigation (0–4)	Availability of Humanitarian Assistance from Gov't and/or NGO (0–1)
T1: Ind. coaching + asset	2.48***	0.14***	0.63***
	(0.21)	(0.05)	(0.04)
T2: group coaching + asset	2.52***	0.14***	0.63***
	(0.23)	(0.05)	(0.04)
T3: Ind. coaching, no asset	1.66***	0.09*	0.64***
	(0.24)	(0.05)	(0.04)
Spillover Control	0.50**	0.04	0.64***
	(0.22)	(0.05)	(0.04)
Observations	5,227	2,630	5,049
R-squared	0.08	0.13	0.55
Mean in Pure Control	11.29	0.51	0.34
SD in Pure Control	4.07	0.56	0.48
P-value of H0:			
T1 = T2	0.83	0.93	0.79
Avg(T1, T2) = T3	0	0.16	0.02
Avg(T1, T2) ref. = avg(T1, T2) host	0.18	0.40	0
T3 ref. = T3 host	0.42	0.93	0

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 71. Transformative capacity, combined sample

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	Transformative Capacity Index	Availability of Formal Safety Nets Index	Availability of Markets Within 5km of a Village Index (0–3)	Access to Communal natural Resources Index (0–4)	Index for Access to Basic Services (0–4)	Access to Agricultural extension Services (0–3)
T1: Ind. coaching + asset	2.75	0.03	-0.09	-0.01	-0.08	0.1
	(2.13)	(0.17)	(0.13)	(0.02)	(0.14)	(0.14)
T2: Group coaching + asset	2.76	0.17	-0.04	0	-0.06	0.11
	(2.13)	(0.16)	(0.13)	(0.02)	(0.14)	(0.14)
T3: Ind. coaching, no asset	2.25	0.18	-0.06	-0.02	-0.08	0.09
	(2.17)	(0.16)	(0.13)	(0.02)	(0.13)	(0.14)
Spillover Control	3.32	0.11	-0.06	-0.02	-0.03	0.1
	(2.06)	(0.16)	(0.13)	(0.02)	(0.13)	(0.14)
Observations	4,895	10,450	10,450	6,443	10,450	10,450
R-squared	0.74	0.38	0.39	0	0.22	0.45
Mean in Pure Control	54.7	1.9	2.04	0.08	0.77	0.86
SD in Pure Control	24.16	1.41	1.01	0.38	0.78	0.93
P-value of H0:	0	0	0	0	0	0
T1 = T2	0.982	0	0.211	0.609	0.381	0.747
Avg(T1, T2) = T3	0.333	0.024	0.774	0.318	0.594	0.732
Avg(T1, T2) ref. = avg(T1, T2) host	0.033	0.004	0.803	0.515	0.092	0.68
T3 ref. = T3 host	0.004	0.005	0.739	0.217	0.084	0.425

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 72. Transformative capacity, combined sample (continued)

Variables	(7) Access to Livestock Services (0–2)	(8) Index for Bridging Social Capital (0–6)	(9) Community-Level Gender Equitable Decision-Making Index (0–1)	(10) Index for Local Government Responsiveness (0–2)	(11) Participation in Local Decision-Making (0–1)
T1: Ind. coaching + asset	-0.02	0.09	-0.03	0.06	0.11***
	(0.16)	(0.11)	(0.05)	(0.05)	(0.02)
T2: Group coaching + asset	-0.02	0.22**	-0.03	0.07	0.13***
	(0.16)	(0.11)	(0.05)	(0.05)	(0.02)
T3: Ind. coaching, no asset	-0.03	0.19*	-0.04	0.07	0.08***
	(0.16)	(0.11)	(0.05)	(0.05)	(0.02)
Spillover Control	-0.01	0.02	-0.04	0.09*	-0.01
	(0.16)	(0.1)	(0.05)	(0.05)	(0.02)
Observations	10,450	5,260	9,784	6,380	6,393
R-squared	0.22	0.03	0.14	0.3	0.04
Mean in Pure Control	0.89	3.07	0.7	0.31	0.79
SD in Pure Control	0.89	1.85	0.29	0.49	0.4
P-value of H0:	0	0	0	0	0
T1 = T2	0.849	0.206	0.457	0.396	0.085
Avg(T1, T2) = T3	0.542	0.703	0.119	0.598	0.008
Avg(T1, T2) ref. = avg(T1, T2) host	0.334	0.749	0.079	0.405	0.023
T3 ref. = T3 host	0.183	0.6	0.057	0.368	0.025

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 73. Transformative capacity, refugee sample

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	Transformative Capacity Index	Availability of Formal Safety Nets Index	Availability of Markets Within 5km of a Village Index (0–3)	Access to Communal Natural Resources Index (0–4)	Index for Access to Basic Services (0–4)	Access to Agricultural Extension Services (0–3)
T1: Ind. coaching + asset	-1.24	-0.62*	-0.07	-0.02	-0.32	0.03
	(3.54)	(0.35)	(0.21)	(0.03)	(0.27)	(0.26)
T2: Group coaching + asset	-0.99	-0.36	0	0	-0.28	0.05
	(3.46)	(0.32)	(0.21)	(0.03)	(0.27)	(0.25)
T3: Ind. coaching, no asset	-2.85	-0.35	-0.02	-0.04	-0.32	-0.02
	(3.56)	(0.33)	(0.21)	(0.03)	(0.26)	(0.26)
Spillover Control	-1.23	-0.51	-0.09	-0.01	-0.24	0.03
	(3.37)	(0.32)	(0.2)	(0.03)	(0.26)	(0.26)
Observations	2,568	5,242	5,242	3,277	5,242	5,242
R-squared	0.16	0.14	0.34	0	0.13	0.21
Mean in Pure Control	73.25	2.97	2.35	0.07	1.09	1.37
SD in Pure Control	10.8	0.93	0.56	0.4	0.84	0.88
P-value of H0:						
T1 = T2	0.808	0.001	0.284	0.406	0.478	0.763
Avg(T1, T2) = T3	0.064	0.053	0.552	0.171	0.663	0.124
Avg(T1, T2) ref. = avg(T1, T2) host	0.033	0.004	0.803	0.515	0.092	0.68
T3 ref. = T3 host	0.004	0.005	0.739	0.217	0.084	0.425

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 74. Transformative capacity, refugee sample (continued)

Variables	(7) Access to Livestock Services (0–2)	(8) Index for Bridging Social Capital (0–6)	(9) Community-Level Gender Equitable Decision-Making Index (0–1)	(10) Index for Local Government Responsiveness (0–2)	(11) Participation in Local Decision-Making (0–1)
T1: Ind. coaching + asset	-0.17	0.01	-0.08	0.08	0.14***
	(0.31)	(0.17)	(0.07)	(0.06)	(0.03)
T2: Group coaching + asset	-0.18	0.23	-0.1	0.12*	0.18***
	(0.3)	(0.17)	(0.07)	(0.06)	(0.03)
T3: Ind. coaching, no asset	-0.24	0.24	-0.11	0.11	0.13***
	(0.3)	(0.18)	(0.07)	(0.07)	(0.03)
Spillover Control	-0.21	-0.01	-0.09	0.12*	0.04
	(0.3)	(0.17)	(0.07)	(0.07)	(0.04)
Observations	5,242	2,630	5,180	3,232	3,248
R-squared	0.03	0.02	0.1	0.07	0.04
Mean in Pure Control	1.22	2.9	0.77	0.09	0.74
SD in Pure Control	0.94	1.86	0.23	0.29	0.44
P-value of H0:					
T1 = T2	0.811	0.133	0.181	0.111	0.099
Avg(T1, T2) = T3	0.2	0.352	0.083	0.608	0.125
Avg(T1, T2) ref. = avg(T1, T2) host	0.334	0.749	0.079	0.405	0.023
T3 ref. = T3 host	0.183	0.6	0.057	0.368	0.025

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 75. Transformative capacity, host sample

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	Transformative Capacity Index	Availability of Formal Safety Nets Index	Availability of Markets Within 5km of a Village Index (0–3)	Access to Communal Natural Resources Index (0–4)	Index for Access to Basic Services (0–4)	Access to Agricultural Extension Services (0–3)
T1: Ind. coaching + asset	8.06***	0.70***	-0.11	0.01	0.16**	0.16
	(1.69)	(0.09)	(0.17)	(0.03)	(0.08)	(0.11)
T2: Group coaching + asset	7.86***	0.73***	-0.09	0.01	0.17**	0.16
	(1.79)	(0.09)	(0.17)	(0.03)	(0.08)	(0.11)
T3: Ind. coaching, no asset	8.83***	0.73***	-0.1	0	0.16**	0.21*
	(1.68)	(0.09)	(0.16)	(0.02)	(0.08)	(0.11)
Spillover Control	9.23***	0.75***	-0.03	-0.03	0.19**	0.18*
	(1.68)	(0.09)	(0.17)	(0.02)	(0.09)	(0.1)
Observations	2,327	5,208	5,208	3,166	5,208	5,208
R-squared	0.44	0.48	0.35	0.01	0.33	0.32
Mean in Pure Control	30.07	0.78	1.72	0.08	0.43	0.32
SD in Pure Control	11.83	0.86	1.24	0.36	0.52	0.62
P-value of H0:						
T1 = T2	0.805	0.174	0.579	0.942	0.599	0.994
Avg(T1, T2) = T3	0.065	0.405	0.948	0.862	0.845	0.054
Avg(T1, T2) ref. = avg(T1, T2) host	0.033	0.004	0.803	0.515	0.092	0.68
T3 ref. = T3 host	0.004	0.005	0.739	0.217	0.084	0.425

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 76. Transformative capacity, host sample (continued)

Variables	(7) Access to Livestock Services (0–2)	(8) Index for Bridging Social Capital (0–6)	(9) Community-Level Gender Equitable Decision-Making Index (0–1)	(10) Index for Local Government Responsiveness (0–2)	(11) Participation in Local Decision-Making (0–1)
T1: Ind. coaching + asset	0.14	0.17	0.05	0.03	0.07***
	(0.11)	(0.15)	(0.05)	(0.07)	(0.02)
T2: Group coaching + asset	0.15	0.2	0.06	0.02	0.08***
	(0.11)	(0.13)	(0.05)	(0.07)	(0.02)
T3: Ind. coaching, no asset	0.18*	0.13	0.05	0.03	0.04*
	(0.11)	(0.13)	(0.05)	(0.07)	(0.02)
Spillover Control	0.19*	0.04	0.03	0.07	-0.06**
	(0.11)	(0.12)	(0.05)	(0.07)	(0.03)
Observations	5,208	2,630	4,604	3,148	3,145
R-squared	0.4	0.02	0.16	0.25	0.03
Mean in Pure Control	0.55	3.24	0.6	0.52	0.85
SD in Pure Control	0.69	1.82	0.34	0.55	0.36
P-value of H0:					
T1 = T2	0.862	0.817	0.659	0.781	0.585
Avg(T1, T2) = T3	0.126	0.617	0.705	0.809	0.02
Avg(T1, T2) ref. = avg(T1, T2) host	0.334	0.749	0.079	0.405	0.023
T3 ref. = T3 host	0.183	0.6	0.057	0.368	0.025

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 77. Other resilience indicators, combined sample

Variables	(1)	(2)	(3)
	Index of Social Capital at the Household Level	Ability to Recover Index (2–6)	Household Participates in Group-Based Savings Micro-Finance or Lending Programs
T1: Ind. coaching + asset	0.08	0.26***	0.15***
	(0.11)	(0.07)	(0.03)
T2: Group coaching + asset	0.17*	0.29***	0.16***
	(0.1)	(0.08)	(0.03)
T3: Ind. coaching, no asset	0.14	0.21**	0.16***
	(0.1)	(0.08)	(0.03)
Spillover Control	-0.02	-0.02	0.01
	(0.1)	(0.08)	(0.03)
Observations	5,260	3,596	5,260
R-squared	0.03	0.03	0.04
Mean in Pure Control	3.17	4.2	0.58
SD in Pure Control	1.76	1.17	0.49
P-value of H0:	0	0	0
T1 = T2	0.318	0.729	0.624
Avg(T1, T2) = T3	0.884	0.33	0.677
Avg(T1, T2) ref. = avg(T1, T2) host	0.888	0.944	0.418
T3 ref. = T3 host	0.542	0.79	0.876

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 78. Other resilience indicators, refugee sample

Variables	(1)	(2)	(3)
	Index of Social Capital at the Household Level	Ability to Recover Index (2–6)	Household Participates in Group-Based Savings Micro-Finance or Lending Programs
T1: Ind. coaching + asset	0.02	0.27**	0.16***
	(0.17)	(0.11)	(0.04)
T2: Group coaching + asset	0.19	0.29**	0.18***
	(0.17)	(0.12)	(0.04)
T3: Ind. coaching, no asset	0.2	0.19	0.16***
	(0.17)	(0.12)	(0.04)
Spillover Control	-0.02	-0.05	0.01
	(0.17)	(0.12)	(0.05)
Observations	2,630	1,908	2,630
R-squared	0.03	0.02	0.03
Mean in Pure Control	2.99	4.3	0.59
SD in Pure Control	1.8	1.18	0.49
P-value of H0:			
T1 = T2	0.23	0.86	0.556
Avg(T1, T2) = T3	0.456	0.382	0.841
Avg(T1, T2) ref. = avg(T1, T2) host	0.888	0.944	0.418
T3 ref. = T3 host	0.542	0.79	0.876

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Table 79. Other resilience indicators, host sample

Variables	(1)	(2)	(3)
	Index of Social Capital at the Household Level	Ability to Recover Index (2–6)	Household Participates in Group-Based Savings Micro-Finance or Lending Programs
T1: Ind. coaching + asset	0.13	0.26***	0.13***
	(0.14)	(0.1)	(0.03)
T2: Group coaching + asset	0.15	0.28***	0.13***
	(0.13)	(0.09)	(0.04)
T3: Ind. coaching, no asset	0.07	0.23**	0.16***
	(0.12)	(0.1)	(0.04)
Spillover Control	-0.02	0.03	0.01
	(0.12)	(0.1)	(0.04)
Observations	2,630	1,688	2,630
R-squared	0.02	0.03	0.04
Mean in Pure Control	3.36	4.09	0.56
SD in Pure Control	1.71	1.14	0.5
P-value of H0:			
T1 = T2	0.868	0.749	0.958
Avg(T1, T2) = T3	0.538	0.667	0.439
Avg(T1, T2) ref. = avg(T1, T2) host	0.888	0.944	0.418
T3 ref. = T3 host	0.542	0.79	0.876

*Notes: * Denotes statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level. The standard errors are based on a bootstrap procedure with 1,000 iterations that mimics the two-stage random assignment process which involves both village cluster level randomization (treatment vs. control villages) and household level randomization (within treatment villages).*

Annex E: Research Protocol

Evaluative Research on Graduation Pilot Development Food Security Activity in Kamwenge, Uganda

RESEARCH PROTOCOL

Submission Date: January 31, 2019

Associate Cooperative Agreement No. 72DFFP18LA00001

Leader with Associates Award (LWA) No. AID-OAA-A-10-00006

Activity Start and End Dates: January 26, 2018 to December 31, 2021

Submitted To: Graceanna Enzinger

Submitted by: Tom Spangler

Save the Children Federation, Inc.
899 North Capitol Street, NE
Washington, DC 20002
Tel: 202-640-6600
Email: TSpangler@savechildren.org

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1. PROGRAM OVERVIEW/SUMMARY

Activity Name:	Evaluative Research on Graduation Pilot Development Food Security Activity in Kamwenge, Uganda
Activity Start and End Dates:	January 26, 2018, to December 31, 2021
Name of Prime Implementing Partner:	Save the Children 899 North Capitol St NE Washington, DC 20002 Telephone: 202-640-6600 tspangler@savechildren.org
Agreement Number:	No. AID-OAA-A-10-00006
Name of Sub-awardees:	Innovations for Poverty Action

Background

The Rwamwanja refugee settlement, located within Kamwenge District, is home to approximately 57,000 Congolese refugees, most of whom arrived in or after 2012. The surrounding non-refugee population also faces significant development challenges. While benefitting from social services provided to the refugees, the non-refugee population remains food insecure—up to two-thirds of the population in the Mid-Western sub-region experience some level of food insecurity.

Reducing this burden requires enabling the poorest families to shift from insecure sources of income to more sustainable income-generating activities. One avenue is to promote self-employment activities and a holistic set of services, including the grant of a productive asset, to the poorest households in a village. These different activities (plus regular interactions with the households over the course of a year) are designed to complement each other in helping households to start a productive self-employment activity. The idea is to provide a "big push" over a limited period of time, with the hope of unlocking a poverty trap. This intervention is called the graduation approach.

In March 2017, USAID's Office of Food for Peace (FFP) issued a Request for Applications (RFA) for Development Food Security Activities (DFSA) in Uganda, in which they solicited bids for the implementation of a graduation pilot in Kamwenge District. The goal of the pilot is to improve food and nutrition security and self-reliance among extremely poor households in refugee settlements and host communities. The pilot will be conducted in two phases over a seven-year period, using the first phase to identify the most successful model to deliver in the second phase.

In October of 2017, USAID awarded the pilot to AVSI Foundation, an Italian NGO operating in Uganda since the early 1980s, together with a consortium including Trickle Up and IMPAQ International. Innovations for Poverty Action (IPA) will implement a randomized control trial to measure the cost-effectiveness of different variations of graduation programming for refugees and host communities.

Overview of the Graduation Approach

The Graduation Approach is a holistic set of services for targeted "ultra-poor" households, designed to help recipients build new livelihoods while building skills and confidence, along with an asset base to diversify income, protect themselves from shocks, and sustain well-being.

A full graduation program typically consists of six components:

1. *Consumption Support:* to stabilize incomes and enable households to focus on new livelihoods, as well as prevent consumption of productive assets.
2. *Productive asset transfer:* input, in-kind or cash, that can be for any small-scale income-generating activity
3. *Training:* on the selected livelihood activities
4. *Coaching:* regular visits (weekly, biweekly, or monthly) over a two-year period to monitor household's progress, reinforce lessons, and help solve problems as they arise.
5. *Access to Savings:* to create a secure place to save revenues
6. *Health Education or basic health services:* includes basic information on sanitation and nutrition, access to national health insurance, or visits by community health workers

IPA has conducted RCTs of the Graduation Approach in six countries—Ethiopia, Yemen, India, Pakistan, Ghana, Peru, and Honduras. These RCTs showed positive impacts on all ten key outcomes after two years, including income and consumption, assets and savings, food security, physical health, mental health, and women's empowerment. At three years (a full year after the program concluded), most of the impacts were sustained, with the exception of physical health and women's empowerment. Related research showed strong gains after four years in Bangladesh and after seven years in India. [23,24]

Purpose and Significance

With this activity, USAID is interested in learning whether the graduation model can be adapted in order to reduce the cost of implementation without substantially reducing the activity's effectiveness. IPA's RCT will seek to identify the most cost-effective model for the graduation approach through a rigorous comparison of the costs and the results of the approach across three variations: (1) the full graduation program with consumption support, an asset transfer and individual, household-level coaching; (2) the full graduation program with consumption support, an asset transfer and group coaching and (3) the

[23] Bandiera, Oriana, Robin Burgess, Narayan Das, Selim Gulesci, Imran Rasul and Munshi Sulaimany. (2016). *Labor Markets and Poverty in Village Economies*. http://sticerd.lse.ac.uk/dps/eopp/eopp58.pdf

[24] Banerjee. A. V., E. Duflo, N. Goldberg, D. Karlan, R. Osei, W. Pariente, J. Shapiro, B. Thuysbaert, and C. Udry. (2015). *A Multi-Faceted Program Causes Lasting Progress for the Very Poor: Evidence from Six Countries*. Science 348, No. 6236. http://science.sciencemag.org/content/348/6236/1260799

graduation program with consumption support and individual, household-level coaching, but without an asset transfer component.

While the graduation approach has been evaluated in a variety of low-resource settings, across consumption variations (e.g., Ethiopia), and in conflict/post-conflict settings (e.g., Yemen), it has yet to be tested with refugees across demographically disparate communities. More importantly, USAID's interest in enabling broad and rigorous learning to flow back into the Food for Peace implementer community is an opportunity to inform significant policy adaptation at a large scale.

In summary, the objectives of the RCT are to:

- Evaluate the program's effectiveness to improve food and nutrition security and self-reliance among poor households in refugee settlements and host communities
- Evaluate the cost-effectiveness of the same potentially important intervention across demographically disparate communities

  The following table shows the distribution of the sampling frame into experimental groups.

2. RESEARCH DESIGN

Sample Frame

The first stage of randomization is at the village level, to assign villages into treatment (T) and control (C). The second stage of randomization is at the individual household level, to select households for household interviews and to assign the type of treatment (T1, T2, or T3) or control (C1) in the treatment villages. Households selected for interviews in the control villages are our "spillover controls (C2). Households not selected for interviews serve as hold-out controls for potential later recruitment into the study.

IPA interviewed 6,631 households in treatment groups as well as 4,514 households across the two types of control groups (C1 and C2), everything evenly split between Rwamwanja Refugee Settlement and host communities. IPA interviewed 11,145 households in total across the two communities

In the host community, we targeted 72 villages (or village clusters; to the extent that individual villages are not sufficiently large, they need to be clustered with neighboring villages. We worked with AVSI to identify villages with natural or administrative boundaries where this made the most sense) --- 36 treatment villages and 36 control villages. In the refugee community, we targeted 42 villages (21 treatment villages and 21 control villages).

Table 80: Sample Design

	Host Community	Refugee
# of villages	72 (36 T, 36 C)	42 (21 T, 21 C)
# households	Host Community	Refugee
Treatment villages		
T1	1,096	1,100
T2	1,102	1,127
T3	1,104	1,102
C1	1,100	1,102
Hold-out 1 (not interviewed at baseline)	1,914[1]	696[1]
Control villages		
C2	1,115	1197
Hold-out 2 (not interviewed at baseline)	5,662[2]	4,074[2]

[1] An additional 419 and 487, for hosts and refugees, respectively, were originally allocated as hold-out controls but were sampled to replace households in the main sample who could not be included in the baseline (see text for additional details on replacement household sampling).

[2]An additional 110 and 50, for hosts and refugees, respectively, were originally allocated as hold-out controls but were sampled to replace households in the main sample who could not be included in the baseline (see text for additional details on replacement households).

In the refugee community, we interviewed an average of 211 eligible households in treatment villages and an average of 57 eligible households in control villages. The total sample size is 5,268.

In the host communities, we interviewed an average of 122 eligible households in treatment villages and an average of 30 eligible households in control villages. The total sample size is 5,517.

Participants within each village and experimental arm were randomized into groups of between 23-27 participants (as requested by AVSI). Each treatment village cluster has between four and 15 groups depending on the total number of households in each village cluster. For example, in a village cluster with 125 households, there are five groups, and in a village cluster with 200 households, there are eight groups.

AVSI conducted a public lottery in each village cluster to assign each participant group to one of the three treatment arms and the control arm. IPA grouped together participants and identified the number of groups to be assigned in each village cluster. AVSI mobilized households and assigned treatment by using two boxes, one containing cards with the group participant lists and one containing cards with the treatment arms, to randomly assign treatment status.

IPA replaced households that could not be surveyed, including those that moved away or that did not meet the eligibility criteria for the program. The objective of utilizing the replacement households is to ensure that the target number of surveys is met during the

baseline data collection. Replacement households were taken in randomized order from the list of households in the hold-out control. In total, 529 and 537 households were replaced in the host and refugee communities, respectively. In the refugee community, the replacement was done after the majority of fieldwork was complete and delayed finalization of the refugee baseline data collection by 2 weeks. In the host community, replacement surveying was integrated into the regular data collection.

Moving forward, contamination in the assignment to treatment groups will be tightly controlled by both the research team and the implementing partner through repeated careful identification of participants. The participants of one study arm will not be able to able to receive the intervention of another study arm.

Sample sizes were calculated to detect effects separately for the settlement and the host community population. Within those two sampling frames, for any pairwise comparison of experimental groups we are aiming to detect standardized treatment effect sizes of at least 0.1195 standard deviations with 80% power at standard 5% rejection rates on a two-sided test. We achieve this by sampling all target beneficiaries in the three intervention groups—approximately 1,100 per each treatment arm in each of the two target populations—as well as sampling comparison groups from a pool of eligible households of the same size.

Baseline Instrument

IPA administered the baseline instrument beginning in August 2018 and completed data collection on November 26, 2018. Enumerators obtained consent for participation in the study from participants at the time of the interview and obtained additional consent at each future survey round. All instruments were translated into Kiswahili and Kinyabwisha, both languages which are predominately spoken by the refugee population, and Runyankole, which is predominately spoken by the host community in Kamwenge District. Certain modules, including consumption, child and women nutrition, and WASH, were only asked to a subset of the sample in order to keep the total typical survey length to 2-2.5 hours.

Endline Instrument

The endline instrument will be administered 30 months after baseline and intervention launch and is thus planned for June 2021. As with the baseline instrument, all instruments will be translated into Kiswahili, Kinyabwisha, and Runyankole. The length of the endline survey will depend on the number and contents of the final modules, which will be determined by the research team, USAID, and the implementing partner.

Measures and Sources of Data

Program eligibility data (approximately 15 questions) and information for contacting households (names and locations) were obtained from AVSI from all households in the sampling frame for baseline survey targeting and randomization into experimental arms.

For baseline, IPA collected primary data from 11,145 households covering the following topics:

1. Household Roster
2. Housing
3. Assets
4. Agriculture
5. Livestock and Other Household Production
6. Income Support
7. Employment
8. Businesses
9. Remittances
10. Consumption
11. Household finances
12. Health
13. Food Security
14. Trust and Community/Social Cohesion
15. Water, Sanitation and Hygiene (WASH)
16. Child Nutrition
17. Women Nutrition
18. Mental Health
19. Anthropometry

IPA also conducted a price survey and a village survey in both the refugee and host communities. For the price survey, IPA visited five large local markets in the refugee community (Katalyeba, St. Michael, Kyempango, Nkoma, and Ntenungi) and two large local markets in the host community (Bwizi and Kabuga). In each market, IPA collected price and weight information for 95 available goods.

In addition, IPA collected data on the availability, distance, and cost of transport to access services in each host and refugee village. IPA collected data on the availability of health services, savings and credit services, market services, and school services.

During endline, IPA will re-visit households to collect follow-up data on the above topics.

IPA will also conduct a short-run follow-up survey during the implementation period to measure intermediate effects of the program. The survey will consist of short interviews with all study households (11,000) and is intended to capture in particular information on the status of new income-generating activities, such as recent investments, to what extent respondents are still actively engaged in the activities they may have started since the beginning of the study as well as shock-coping behavior, including the prevalence of “emergency” sales of productive assets.

In addition to baseline evaluations of alternative graduation models, IPA will carry out a process evaluation to understand the extent to which program activities are implemented

as planned. Findings from this activity will be critical for interpreting the results of the impact evaluation. IPA will monitor the program implementation throughout the program delivery period.

Focus areas for the process evaluation will include the following:

- Technical capacity of staff;
- Quality and timeliness of service delivery;
- Selection of income-generating activities;
- Adaptive management of programming in response to shocks (price shocks, weather events such as floods or drought, disease or pestilence affecting people, livestock or crops, political events such as election violence, coups, government support or interference in the program)
- Influence of local contextual factors (such as access to markets or health care, other programs serving beneficiaries in the study areas) and collaboration with key stakeholders on program implementation.

IPA will develop a protocol and data collection tools for the process evaluation and share both with USAID for review and input. IPA anticipates the draft protocol and data collection tools will be completed by the end of February 2019. Data collection for the process evaluation is anticipated to take place throughout the entire implementation period (Feb 2019 – May 2021). IPA will provide quarterly updates of observations from the process evaluation, submitted with the regular quarterly reports, as well as a final process evaluation report at the end of the impact evaluation. The final report will be shared, and discussions facilitated with USAID and AVSI to inform any necessary adjustments to subsequent program design and implementation.

Subject Population

The list of study subjects was drawn from a list of program-eligible households provided by AVSI to IPA.

AVSI conducted an eligibility verification exercise to identify the ultra-poor households in each village. AVSI's listing exercise employed two methods: (1) a Participatory Rural Appraisal (PRA) technique and (2) a household survey verification strategy. AVSI's PRA method involved community members defining various poverty levels as a group and appropriately bucketing community members according to their respective perceived poverty levels. AVSI followed up this exercise with a household survey-based verification strategy designed to quantitively assess the actual poverty levels of each bucketed household.

Recruitment will be done by approaching households at the time of the baseline survey.

Study participants will be members of the study households sampled from the pool of program-eligible households. All study participants are 18 years of age or older and do

not include persons with special needs. We will be conducting anthropometric height and weight measures of children under five years old and non-pregnant women between 15 and 49.

Mechanics of Randomization

IPA used a computer to 1) randomly sort villages into treatment and control villages, 2) randomly sample households for baseline interview participation from the pool of eligible households, 3) randomly assign participating households to "intervention groups" of approx. 25 households in the treatment villages. AVSI conducted a public lottery to assign the intervention groups to one of three treatment arms or a control arm.

Utilizing Stata for Stratified Randomization

IPA often includes one or more important characteristics to stratify the sample and to avoid any imbalances in the randomization. IPA used data from the eligibility assessment to stratify village-level assignments on geography (distance to the headquarters in the settlement, parishes in the host community), eligibility scores, household size, number of households per village, and gender of the head of household. Household level randomizations were only stratified at the village (cluster) level because lotteries were publicly conducted in the field to assigned groups of approximately 25 to the different experimental conditions. IPA used observable characteristics collected during the baseline to ensure balance across the groups of 25 using re-randomization. The characteristics used were education and education of the household head, agricultural activity in 2018 and 2017, livestock ownership, and consumption.