December 2015

# FINAL EVALUATION REPORT

## CONCERN'S GRADUATION MODEL PROGRAMME IN BURUNDI

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# Contents

# Tables

# Figures

# Acknowledgements

The authors of this report acknowledge the work done on this research by the following Concern Worldwide staff in Burundi and in Dublin.

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***Note***

*Exchange rate: Throughout this report, 1 Euro = BiF 2,000 (Burundi Francs)*

# Executive summary

The Graduation model programme, also known as *Terintambwe* ('Step ahead'), was launched in two provinces of Burundi, Cibitoke and Kirundo, in April 2013. In each province, 500 poor households were selected to receive 'high treatment' (T1) support from Concern Worldwide, another 500 households were selected to receive 'low treatment' (T2) support – the main difference being in the number of home visits – and 300 similarly poor households were allocated to a control group, which allowed for a quasi-experimental 'difference-in-differences' research design.

The mixed methods impact evaluation of the *Terintambwe* programme included a quantitative baseline survey, midline survey and endline survey that covered all 2,600 households (with an attrition rate of 10% over the three rounds), as well as regular monitoring and two rounds of qualitative fieldwork around the same time as the baseline and endline surveys. This report presents the findings of the endline quantitative and qualitative surveys, and analyses trends across the three rounds of data collection and the monitoring surveys. Findings are disaggregated by 'high treatment' versus 'low treatment' and by province.

*Terintambwe* households received support in the form of monthly cash transfers (in the first year), access to savings and borrowing facilities, skills training and coaching, working capital for income-generating activities, a mobile phone, and advice on establishing kitchen gardens. Because of the amount and value of resources transferred, some findings recorded in this report are programme effects rather than programme impacts. Giving poor people cash every month automatically makes them less poor – this is a programme effect – but the true test of impact is what happens when the cash transfers and provision of working capital come to an end. The sustainability of any positive changes achieved by the programme will become evident if and when follow-up surveys are conducted; a year or longer after support stops.

Some of the impacts of *Terintambwe* were achieved through training modules and personal coaching or 'behaviour change communication' (BCC), which disseminated messages about good practices around hygiene, nutrition, gender equity, and so on. Because high treatment participants received more home visits than low treatment participants, differences were expected in outcomes on these indicators between T1 and T2 households.

The changes that *Terintambwe* caused in people's lives and livelihoods can be divided into material, behavioural and social impacts.

## *Material impacts*

Living conditions generally improved as a result of participation in *Terintambwe.* Significant numbers of *Terintambwe* households acquired or built their own houses thanks to the programme, and many more upgraded the quality of their housing, from mud to brick walls and from grass to metal roofs. The proportion of participating households with access to hygienic sanitation facilities doubled from baseline to midline and then levelled off, while control households also upgraded their sanitation facilities, probably because they learned from and copied participants.

Only modest improvements in household incomes from occupation are recorded, but this impact is probably under-estimated. Firstly, income data was collected only for primary and

secondary occupations, but we know that *Terintambwe* led to increased livelihood diversification, so total income might have risen because additional income-generating activities (IGAs) were adopted that are not captured in our income data. *Terintambwe* was associated with a shift away from daily agricultural labour as the primary occupation of many participants, towards programme-supported IGAS and farming their own land, which most respondents indicated to be a positive move towards self-reliance. Secondly, external shocks during the project period, such as failed banana harvests and falling income from mining, undermined earnings from some important livelihood activities.

*Terintambwe* participants increased their ownership of small domestic assets (e.g. kitchen utensils, furniture, bedding) and large domestic assets (e.g. bicycles, mobile phones, radios). These increases are statistically significant relative to the control group but not between treatment groups (not surprising, since they received the same amount of material support), and were stronger during the first phase (baseline to midline) when cash transfers were disbursed that were used to finance asset accumulation, than during the second phase (midline to endline) when cash transfers were not disbursed. Ownership of small farm assets (hoes, buckets, machetes) also increased, but not of large farming assets (ploughs). *Terintambwe* participants increased their ownership of small livestock (goats, poultry, rabbits) but not significantly of large livestock (bulls, cows, calves) relative to the control group. A composite asset index (combining the values of domestic assets, farming assets and livestock) confirms that participants increased their asset ownership substantially relative to the control group, but there are no significant differences between high and low treatment households.

The introduction of Savings and Internal Lending Communities (SILCs) during the second phase of *Terintambwe* had a major impact on households' financial behaviour. Many more households saved than before, they borrowed on better terms from their SILC 'credit pot' (lower interest rates, flexible repayments) than from informal lenders, and several received zero-interest loans or cash gifts from the SILC 'solidarity pot' during personal crises. Households in Cibitoke borrowed and saved more than households in Kirundo, but there was no significant difference between T1 and T2 participants.

### *Behavioural impacts*

The *Terintambwe* programme led to an improvement in several indicators of children's education, notably significant increases in the proportion of children who have ever been to school or are currently attending school, and a decline in the proportion of children working outside the home.

There were substantial increases in the proportion of *Terintambwe* households attending formal health providers when a family member was ill, mainly because all participants received health insurance cards which made formal health care more affordable. Participants also reported that prescribed medication was more affordable than before, probably because of their higher incomes.

*Terintambwe* households rented in more land for farming than before the programme started. Households in Cibitoke gained more additional land than households in Kirundo. Partly because of this, but also because of cash transfers, messaging around good nutrition, and other programme components, food insecurity was positively impacted by *Terintambwe*. The

number of meals consumed per day by adult participants almost doubled between baseline and endline. Most of this reduction in hunger was achieved during the first phase of the programme, when households received substantial injections of cash. Similar trends were observed in meals per day for children. Months of hunger fell dramatically, from over 7 in the year before the baseline survey to less than 2 in the 12 months before the endline survey. Dietary diversity, measured by the number of distinct food groups eaten in a day, doubled between baseline and endline for both high and low treatment households. The statistical significance of these impacts is maximised because control group households recorded minimal increases in their food consumption during the programme period.

These positive impacts on food security in *Terintambwe* households are reinforced by evidence of reduced reliance on 'coping strategies' to survive periods of hunger (such as rationing consumption or begging) at endline compared to baseline. The compilation of a 'coping strategies index' (CSI) reveals a dramatic fall in this index over the period of programme implementation. Although the differences between T1 and T2 households are negligible, there are clear differences between the two provinces: households surveyed in Kirundo had significantly higher CSI scores at baseline and at endline than households in Cibitoke, even though T1 and T2 households in both provinces registered sharp downward trends in this indicator.

A large proportion of participants adopted good hygienic practices – hand-washing before preparing or eating food and after toileting – as a result of training and coaching from Concern staff. There is some evidence of spillover to control households, but there was no significant difference between T1 and T2 households.

Households using contraception almost doubled between baseline and midline, again likely due to messaging from *Terintambwe* staff, but control households also increased their contraceptive use during this period. Disappointingly, use of contraception fell back almost to baseline levels by the time of the endline survey. On the other hand, knowledge about the causes of HIV and AIDS improved dramatically between the baseline and midline surveys, and continued to improve until the endline survey. This was matched by increased use of preventative measures, also by the control group who probably learned from and mimicked participating households. There is evidence of a small improvement in terms of attitudes towards people affected by HIV and AIDS, but these impacts are statistically insignificant because control households track participants very closely on this indicator.

### *Social impacts*

There is some evidence of women's empowerment through their participation in the programme. For instance, a significant shift was recorded from unilateral to joint decision-making (on issues such as control over income, use of credit, and whether to take sick children to clinic) between male and female partners or spouses within *Terintambwe* households. Most of this change occurred in the first phase of the programme. Not all of these effects should be interpreted positively: women did not only increase their power over decisions formerly made unilaterally by men; many also lost their autonomy in areas where they had previously had decision-making control.

*Terintambwe* registered positive impacts on social capital, as proxied by participants' engagement in community institutions (school management, community health, disaster risk

reduction and women committees, also cooperatives) and social activities (weddings, other ceremonies). There were rising trends across the board in membership of community institutions and attendance at meetings. Many participants attributed this to increased self-confidence, wearing better clothes and being able to make financial contributions. Social cohesion also appears to have strengthened: poor people who were previously neglected or mocked by their neighbours now feel respected and included. They are less dependent on their neighbours – there is less begging and less stealing than before – and some have even moved from receiving informal support to offering support to others. On the other hand, the exclusion of many poor people from the programme did cause some resentment and jealousy towards *Terintambwe* participants, especially in the initial stages of the programme.

On all of these behaviour change indicators there are no statistically significant differences between T1 and T2 households.

### *Synergies*

Based on qualitative analysis it is important to note that each programme component had impacts on several outcome indicators, and that the impacts were maximised by synergies and interactions between components. For example, cash transfers were used to finance basic needs (food and groceries) as well as consumer items (kitchen utensils, clothes), assets (livestock), wellbeing (health, housing repairs) and investment in livelihoods (farming, income-generating activities). Mobile phones, which were introduced as part of the cash transfer payment mechanism, were used for personal purposes (to call relatives and friends), for business purposes (to make deals or check market prices), and for their secondary functions (as a calculator and a torch).

Food security provides a nice example of synergies between components. Cash transfers were used to finance food purchases and to invest in farming to grow food for consumption. Asset transfers generated income to buy extra food. SILCs provided loans and savings that could be drawn on to buy food when needed. Kitchen gardens provided vegetables that supported diversified and healthy diets. Training and coaching sessions included advising participants on how to prepare balanced and nutritious meals.

These findings highlight the benefits that graduation programmes like *Terintambwe* can achieve, by delivering an integrated and sequenced package of support, rather than a single intervention such as cash transfers or kitchen gardens on their own.

### *Design and implementation issues*

For many indicators, the statistical significance of improvements in participating households was reduced because control households registered similar improvements. ‘High treatment’ (T1), ‘low treatment’ (T2) and control group households were all selected within the same communities, so there were substantial ‘spillovers’ – since neighbours talk and share information, control households learned from participants and many applied this knowledge to improve their own circumstances. Although this is positive in terms of coverage of programme impacts – and also in promoting social cohesion, since the benefits were spread among a wider group – it is problematic for this impact evaluation, because attributable impacts must be discounted to the extent that unintended beneficiaries also improved on key outcome indicators of interest. In this sense, actual *Terintambwe* impacts are underestimated in this report. Similarly, we find few statistically significant differences in impacts between T1 and T2

participants, partly because the package of support (even in terms of training and 'behaviour change communication') delivered to each group was not sufficiently differentiated, and partly because T2 households learned from T1 households – another spillover.

One factor that clearly contributed to the successful outcomes reported here is the dedication and professionalism of programme staff, especially the case managers and supervisors whose personal attention to individual participants may well have been the 'X-factor' that led to enhanced impacts. Participants and Concern staff offered some suggestions about how programme design and implementation could be strengthened. These include: (1) targeting should prioritise people with income-earning potential; (2) expand the range of income-generating options; and (3) change the sequence of programme components, by introducing livelihood-related activities (asset transfers, SILCs and training) earlier in the cycle. All these recommendations could enhance the sustainability of *Terintambwe* impacts, which will be tested in a follow-up survey scheduled to be conducted in late 2016, some 18 months after programme support to participants ended.

Table 1 summarises changes in key outcome indicators between the baseline and endline surveys. Note that these are crude percentages that indicate the magnitude of changes, for *Terintambwe* participants by province and overall, and for the control group. Difference-in-difference estimates and analysis of the statistical significance of these changes are provided in the relevant chapters of this report.

**Table 1. Changes in key outcome indicators between baseline and endline surveys**

| Indicator | Participants | | | Control group |
|---|---|---|---|---|
| | Cibitoke | Kirundo | Total | |
| **Housing conditions** | | | | |
| **Households with a seriously leaking roof** | | | | |
| Baseline | 54.4% | 80.3% | 67.4% | 66.2% |
| Endline | 8.5% | 17.6% | 13.0% | 54.7% |
| **Living conditions** | | | | |
| **Households with a hygienic sanitation facility (WHO standards)** | | | | |
| Baseline | 27.8% | 29.9% | 28.9% | 28.6% |
| Endline | 76.4% | 32.2% | 54.6% | 55.0% |
| **Households with a safe source of drinking water (WHO standards)** | | | | |
| Baseline | 49.9% | 58.8% | 54.4% | 54.1% |
| Endline | 65.5% | 72.0% | 68.7% | 63.0% |
| **Income** | | | | |
| **Average (median) annual household income from two main occupations (FBu)** | | | | |
| Baseline | 348,600 | 248,550 | 288,000 | 313,200 |
| Endline | 335,094 | 271,698 | 297,170 | 271,698 |
| **Assets** | | | | |
| **Average (median) total monetary value of all household assets (FBu)** | | | | |
| Baseline | 54,075 | 36,875 | 46,813 | 48,788 |
| Endline | 333,788 | 338,063 | 335,625 | 140,500 |
| **Land** | | | | |
| **Number of plots used but not owned** | | | | |
| Baseline | 0.56 | 0.44 | 0.50 | 0.51 |
| Endline | 1.68 | 1.58 | 1.63 | 0.95 |
| **Number of plots used or rented out** | | | | |
| Baseline | 0.28 | 0.20 | 0.24 | 0.23 |
| Endline | 1.57 | 1.08 | 1.33 | 0.53 |

| Indicator | Participants | | | Control group |
|---|---|---|---|---|
| | Cibitoke | Kirundo | Total | |
| **Farming** | | | | |
| **Average (mean) share of total food crop production that is sold rather than consumed** | | | | |
| Baseline | 33.5% | 12.8% | 21.8% | 22.9% |
| Endline | 19.6% | 15.3% | 17.5% | 14.2% |
| **Savings** | | | | |
| **Households with savings** | | | | |
| Baseline | 2.8% | 1.4% | 2.1% | 2.0% |
| Endline | 95.9% | 87.2% | 91.6% | 10.4% |
| **Average (median) amount saved per household that saves (FBu)** | | | | |
| Baseline | 5,000 | 6,000 | 5,000 | 3,000 |
| Endline | 38,000 | 25,000 | 30,750 | 14,750 |
| **Borrowing** | | | | |
| **Households that borrow from friends, family or money-lenders** | | | | |
| Baseline | 97.8% | 97.9% | 97.8% | 96.0% |
| Endline | 0.9% | 0.4% | 0.9% | 63.9% |
| **Education** | | | | |
| **School-age boys (5-18) who have ever attended school** | | | | |
| Baseline | 55.8% | 62.7% | 59.3% | 58.8% |
| Endline | 74.0% | 67.3% | 70.8% | 57.2% |
| **School-age girls (5-18) who have ever attended school** | | | | |
| Baseline | 51.7% | 54.8% | 53.4% | 54.0% |
| Endline | 69.3% | 68.1% | 68.7% | 51.2% |
| **School-age children who attend school but missed at least one day in the last two weeks** | | | | |
| Baseline | 42.3% | 32.8% | 37.1% | 33.7% |
| Endline | 15.4% | 24.1% | 19.3% | 37.4% |
| **Health** | | | | |
| **Households attending formal health services when a member is sick** | | | | |
| Baseline | 65.4% | 47.7% | 56.5% | 58.3% |
| Endline | 97.2% | 90.9% | 94.1% | 68.6% |
| **Hygiene** | | | | |
| **Households whose members usually wash their hands after toileting** | | | | |
| Baseline | 52.2% | 48.5% | 50.3% | 48.3% |
| Endline | 97.8% | 88.7% | 93.3% | 59.2% |
| **Households whose members usually wash their hands with soap after toileting** | | | | |
| Baseline | 17.2% | 15.5% | 16.3% | 17.3% |
| Endline | 95.4% | 80.6% | 88.1% | 35.9% |

| Indicator | Participants | | | Control group |
|---|---|---|---|---|
| | Cibitoke | Kirundo | Total | |
| **HIV and AIDS** | | | | |
| **Households whose members have a positive attitude about HIV/AIDS** | | | | |
| Baseline | 6.3% | 7.2% | 6.7% | 7.2% |
| Endline | 7.4% | 19.2% | 13.2% | 13.1% |
| **Households whose members have knowledge of HIV/AIDS** | | | | |
| Baseline | 10.9% | 24.0% | 17.8% | 19.9% |
| Endline | 68.2% | 69.4% | 68.8% | 30.5% |
| **Households whose members use preventive measures** | | | | |
| Baseline | 19.2% | 34.5% | 27.2% | 28.0% |
| Endline | 57.6% | 48.7% | 53.2% | 40.2% |
| **Households whose members currently use contraception** | | | | |
| Baseline | 12.3% | 25.1% | 18.8% | 17.0% |
| Endline | 20.1% | 29.8% | 24.9% | 21.0% |
| **Food security** | | | | |
| **Household Dietary Diversity Index (maximum=12)** | | | | |
| Baseline | 2.7 | 1.9 | 2.3 | 2.3 |
| Endline | 5.5 | 4.5 | 5.1 | 3.1 |
| **Child Dietary Diversity Index (maximum=8)** | | | | |
| Baseline | 1.9 | 1.6 | 1.7 | 1.7 |
| Endline | 3.6 | 3.1 | 3.4 | 2.5 |
| **Number of months of hunger in the year (median)** | | | | |
| Baseline | 7.8 | 6.8 | 7.3 | 7.3 |
| Endline | 1.2 | 2.1 | 1.6 | 6.1 |
| **Gender** | | | | |
| **Women who report an increased control over women's income** | | | | |
| Baseline | 28.4% | 15.7% | 23.0% | 24.1% |
| Endline | 25.8% | 12.7% | 19.7% | 25.1% |
| **Women who report an increased control over men's income** | | | | |
| Baseline | 19.9% | 6.8% | 14.4% | 19.6% |
| Endline | 2.3% | 2.3% | 2.3% | 4.6% |

| Indicator | Participants | | | Control group |
|---|---|---|---|---|
| | Cibitoke | Kirundo | Total | |
| **Social capital** | | | | |
| **Households whose members are involved in school management committees (SMC)** | | | | |
| Baseline | 47.3% | 55.6% | 51.3% | 48.6% |
| Endline | 80.5% | 77.4% | 79.0% | 59.5 |
| **Households whose members are involved in community health committees (COSA)** | | | | |
| Baseline | 32.0% | 42.8% | 37.4% | 36.7% |
| Endline | 84.3% | 78.4% | 81.4% | 55.8% |
| **Households whose members are involved in disaster risk reduction colline meetings (DRR)** | | | | |
| Baseline | 61.6% | 58.8% | 60.2% | 57.7% |
| Endline | 82.2% | 87.3% | 84.7% | 35.3% |
| **Households whose members are involved in community-based groups** | | | | |
| Baseline | 72.4% | 72.9% | 72.7% | 71.5% |
| Endline | 95.7% | 95.0% | 95.4% | 74.9% |
| **Households whose members are in an association or cooperative** | | | | |
| Baseline | 7.1% | 20.0% | 13.6% | 13.3% |
| Endline | 79.0% | 83.4% | 81.2% | 16.2% |

*Notes:* *1. The Indicators in this table derive from the project's 'Results Framework'.*

*2. The percentages in this table refer to all households in the respective provinces and total sample, including Treatment 1, Treatment 2 and Control group households.*

*3. The definition of 'hygienic sanitation facility' is based on WHO guidelines for improved sanitation facilities and includes flush/pour flush, pit latrine with slab and composting toilet.*

*4. The definition of 'safe water sources' is based on WHO guidelines for improved water sources and includes public tap/standpipe, tube well/borehole, protected dug well, water from protected spring and rainwater collection.*

*5.'Respondent has knowledge about HIV/AIDS' is defined by respondent having correct knowledge about three possible ways of infection, 'Respondent has positive attitude about HIV/AIDS' is defined by having a positive answer to all attitude questions.*

*6. 'Community-based groups' includes SMC, COSA or DRR community meetings.*

# 1. INTRODUCTION

Concern Worldwide launched its 'Graduation Model Programme', known locally as *Terintambwe* ('Step ahead') in two of Burundi's poorest provinces, Cibitoke and Kirundo, in April 2013. The *Terintambwe* programme draws on positive experiences with Graduation Model Programmes in Bangladesh, Haiti and elsewhere, which provide a sequenced package of support to extremely poor households, usually over a period of two years, in an effort to 'graduate' them out of extreme poverty. As with BRAC's 'Targeting the Ultra-Poor Programme' in Bangladesh, Concern Worldwide's Graduation Model Programme in Burundi has five components:

1. **Targeting** the poorest households
2. **Consumption support** in the form of regular cash transfers
3. Access to **savings** facilities
4. **Skills training and coaching** on livelihoods and life skills
5. **Asset transfers** to generate sustainable streams of income.

**Targeting:** A total of 2,600 extremely poor households were selected in Cibitoke and Kirundo provinces, using community-based targeting.[1] Because the skills training and coaching component is often seen as the 'X-factor' that makes all the difference between success and failure on graduation programmes, the *Terintambwe* programme diversified between 'high' and 'low' treatment, with some participants receiving more intensive support from Concern case managers than others, who receive fewer visits. Each household was randomly assigned to a high treatment group (T1=1,000), a low treatment group (T2=1,000) or a control group (C=600 households). This allows for a 'quasi-experimental' evaluation design and effectively amounts to two distinct programme designs. For this reason most survey results are reported here separately for T1 and T2 households, rather than combined into a single 'average' result.

**Consumption support:** All programme participants received 14 monthly cash transfers of 24,500 BiF, or 343,000 BiF in total, during the first year of programme implementation. The cash was distributed through the post office using mobile phones. Each participant was given a mobile phone and received a message every month indicating that their transfer had been paid into their account. They would then collect their transfer from the post office.

**Savings:** All participants received training in financial literacy and were encouraged to join a Savings and Lending Community (SILC). Almost all participants were members of a SILC by the end of the programme.

**Skills training and coaching:** Participants received training on a wide range of issues, including use of mobile phones, income generating activities, HIV/AIDS, hygiene, nutrition, adult literacy, DRR, and gender equity. General training sessions were attended by all participants at the same time. Tailored coaching and support was provided through home

[1] A detailed technical note on sample size calculations can be found in Annex 1 of the Baseline Report.

visits by case managers. This support was diversified between 'high' and 'low' treatment groups: high treatment (T1) participants received three visits a month while low treatment (T2) participants received one visit a month.

**Asset transfers:** The *Terintambwe* programme provided working capital for income-generating activities, rather than a direct asset transfer. Participants were asked to select an IGA from six options suggested by Concern (based on a market and value-chain analysis) and to write a business plan outlining the amount of working capital required and how it would be used. The capital was transferred in three instalments.

This study is based on a mixed methods approach, using an integrated mix of quantitative survey, qualitative interview and participatory methods. By tracking changes in key outcome indicators among treatment households over time, while controlling for changes in these indicators among control group households, impacts can be quantified that are attributable to the programme. Case studies, in-depth discussions and participatory exercises with members of treatment and control group households explored non-quantifiable outcomes, and provided depth and detail that help to explain why certain impacts can or cannot be observed. Interviews with programmes staff gave insight into process and implementation issues and factors that enable or prevent impact.

The baseline survey was implemented in November-December 2012. The midline survey was implemented in June 2014, at the end of the first phase of the programme, when the cash transfers component ended and the asset transfer component was about to begin.[2] The midline survey was considered to be necessary because it added a data point between the baseline and endline surveys, allowing the impacts of the cash transfers to be disentangled from the impacts of the asset transfers.

This endline report presents findings from the third household survey (after the baseline and midline surveys, against which findings are compared), the second round of qualitative research and regular rounds of a monitoring survey. The endline survey was implemented at the end of the project cycle, in April 2015 when all households had received their third and final instalment of the asset transfer. A follow-up quantitative survey and round of qualitative fieldwork are planned for 18 months after the programme ends, in late 2016.

The baseline report for this M&E component provides a detailed introduction to the Graduation Model Programme, reviews the context of poverty and vulnerability in rural Burundi, explains the evaluation objectives, data management and analysis plans, and addresses ethical concerns.[3] This contextual material will not be repeated here.

Findings are disaggregated by high treatment (T1) and low treatment (T2) and by province (Cibitoke and Kirundo). Differences between high and low treatment households are expected as an outcome of programme design – the theory of change underpinning graduation model programmes is that participants who receive more mentoring and coaching (T1 households) will achieve greater wellbeing improvements than those who receive less mentoring and

[2] See S. Devereux, K. Roelen, R. Sabates, I. Ssenkubuge and D. Stoelinga (December 2014). Concern Burundi Graduation Model Programme: Midline Report. Brighton: Institute of Development Studies.

[3] See: S. Devereux, K. Roelen, R. Sabates and S. Kamarudeen (May 2013). Concern Burundi Graduation Model Programme: Baseline Report. Brighton: Institute of Development Studies.

coaching (T2 households), who in turn will achieve greater wellbeing improvements than those who receive no mentoring or coaching (control households). Differences across provinces might reflect differences in programme implementation or differences in exogenous conditions that affected programme outcomes.

Following this introductory chapter and chapter 2 on the research methodology, the bulk of this report presents the empirical findings of the endline survey and analyses these in relation to the baseline and midline survey findings. Chapters are organised around the main modules of the household questionnaire: living conditions, income, assets, land, financial management, education, health and hygiene, family planning and AIDS, food security, coping strategies, women's decision-making and social capital. The quantitative data are complemented by qualitative data where appropriate. Two additional chapters discuss each programme component in turn (cash transfer, asset transfer, SILC, mobile phone, etc.) and the synergies between them, and selected aspects of programme design and implementation (including complaints and suggestions for improvement from participants). The final chapter concludes the narrative report. Annexes to this report provide information on sampling, and on calculation of household and child dietary diversity indexes (HDDI and CDDI). Tables with detailed descriptive statistics disaggregating outcome indicators by treatment group and province – to complement the difference-in-differences tables that are presented and discussed in the main text – are available in a separate Excel file.

# 2. EVALUATION DESIGN, DATA AND METHODS

This evaluation employs a mixed methods approach, combining quantitative survey-based data collection with qualitative and participatory data collection techniques. This section describes the overall evaluation design, the survey instruments and sample sizes.

## 2.1. Evaluation design

The evaluation is based on a 'quasi-experimental' design. A group of 2,600 potential participant households in the provinces Cibitoke and Kirundo were pre-selected using a process of community targeting[4]. The choice of provinces and overall sample size was informed by programmatic considerations. A total of 2,600 extremely poor households were selected in Cibitoke and Kirundo provinces, using community-based targeting. The 2,600 potential participant households were randomly assigned to a high treatment group (T1=1,000), a low treatment group (T2=1,000) or a control group (C=600 households). The sample sizes of these three different groups ensure that the control group is as large as possible within the programme design parameters. Allocation of households to these three different groups was done at colline level; in each of the participating collines, households were randomly allocated to T1, T2 and C relative to overall sample size. Random allocation of households to the three different study groups (as opposed to random allocation of collines or communes) maximises the degree of heterogeneity within each of the three groups and thereby reduces the potential design effect. However, the participation of households from a single colline or commune in all three study groups increases the risk of spillover effects. As will be seen, this created serious challenges in terms of isolating programme impacts between the three groups.

## 2.2. Survey instruments

This evaluation uses a mixed methods approach and includes a number of different instruments:

(1) Quantitative household survey;
(2) Monitoring survey;
(3) Qualitative research.

### 2.2.1. Quantitative household survey

Three rounds of quantitative household surveys were conducted as part of this study. The first round took place in **November – December 2012** and constituted the baseline survey before the start of the programme. The second round – the midline survey – was implemented in **June 2014**, at the end of the first phase of the programme, when the cash transfers component ended and the asset transfer component was about to begin. The midline survey was considered to be necessary because it adds a data point between the baseline and endline surveys, allowing the impacts of the cash transfers to be disentangled from the impacts of the asset transfers. The endline survey and third round of data collection took place in **April 2015** after all asset transfers had been made and most training had been completed. Although programme support in terms of coaching and support had not yet completely come to an end,

[4] A detailed technical note on sample size calculations can be found in Annex 1 of the Baseline Report.

data collection was planned to avoid the election period that took place in May – August 2015. A fourth round of survey data collection is planned in the second half of 2016 and will constitute a follow-survey to assess sustainability of changes post-programme implementation.

The quantitative household surveys collected information on a wide set of issues related to programme impact and, to a lesser degree, about programme processes. The survey consists of 15 modules; modules 1 and 2 on demographics and education were collected at the level of individual household members while questions in the other module refer to the household as a whole or a selected household member. Surveys focused specifically on collecting information about key outcome indicators for all programme participants in the low- and high-treatment groups and all those in the control groups. This allows tracking changes in those indicators among treatment households over time, while controlling for changes in these indicators among control group households, and thereby quantifying impacts and they extent to which they are attributable to the programme. For practical reasons the midline survey questionnaire was shorter than the baseline questionnaire. Two modules – farming, and coping strategies – were removed, and several questions were dropped from the remaining modules. However, these modules and questions were reinstated for the full impact evaluation endline survey. The survey was administered to all households in the treatment and control groups. Data collection was undertaken by the Concern case managers using Digital Data Gathering (DDG) devices.

The survey team was composed of a total of 30 case managers and 6 supervisors. This group received training from Concern, IDS and Laterite before every survey round. This group experienced little turnover and remained largely the same over the course of the project period, ensuring consistency in quantitative data collection. Trainings discussed how to use DDGs and how to administer the surveys. A large component of the trainings focused on the survey questionnaire to ensure that the enumerators understood the questions and potential response options. Feedback from the survey team on the relevance of the questions including potential response options available for each question was used for finalisation of the questionnaires while taking into account consistency with previous rounds. The overall objective of the training was to ensure that all enumerators would be able to administer the survey in a professional and ethical manner and that the data collected is robust, accurate and free of enumerator bias.

### 2.2.2. Monitoring survey

The monitoring survey was designed to collect process-related indicators and, to a lesser extent, monitor changes over time with respect to outcome indicators. An additional objective was to use the monitoring survey to assist in decision-making. The monitoring survey was only administered to households in the treatment group and can therefore not be used to estimate programme impacts. The monitoring survey was undertaken every month in the first year of programme implementation and every three months in the second year of programme implementation. It consisted of five modules, including questions on the payment process and income sources. As for the quantitative household surveys, the monitoring surveys were administered by the Concern case managers.

### 2.2.3. Qualitative research

The qualitative research component complemented the quantitative research by providing in-depth understandings of particular issues and addressing issues that cannot be captured by quantitative tools. These include eliciting opinions and perceptions of programme participants, non-participants, community members and programme staff on participant selection and targeting, transfers and payments, coaching and support services, among others. Two rounds of qualitative data collection were undertaken. The first round took place in May 2013 in Cibitoke and June 2013 in Kirundo, and the second round took place in February 2015 in Cibitoke and April 2015 in Kirundo. The fieldwork in both rounds was undertaken by a local research partner, Biraturaba.[5]

A combination of different methods was used in the collection of qualitative data, including key informant interviews (KIIs), focus group discussions (FGDs), Participatory Rural Appraisal (PRA) exercises and household case studies. KIIs were conducted with programme staff, including Concern supervisors and case managers. These interviews focused on staff's understandings of programme design and implementation processes and the impact on households in treatment and control groups and the wider community. Focus group discussions were held with male and female members of households in the high and low treatment groups and control groups. These discussions aimed to get an understanding of people's livelihoods and their experiences with and perceptions of the programme. A combination of participatory rural appraisal and discussion was held with groups of community members and aimed to get an insight into inclusion and exclusion errors and wider community impacts. Household case studies entailed in-depth interviews and exercises with household members to gain a detailed picture of their current and past living conditions.

## 2.3. Sample sizes

All 1,300 households in the treatment and control groups were interviewed in each of Cibitoke and Kirundo for the baseline survey, making a total sample size of 2,600. For the midline survey, 1,255 and 1,253 households were re-interviewed in Cibitoke and Kirundo respectively, a total of 2,508 households. This means that 92 of the 2,600 baseline households were not re-interviewed; a relatively low attrition rate of 3.5%. For the endline survey, 1,188 households in Cibitoke and 1,145 households in Kirundo were re-interviewed for a third time. This amounts to an overall attrition rate of 8.6% in Cibitoke and 11.9% in Kirundo (Table 2). These attrition rates are equally spread across treatment and control groups, not pointing to significant bias towards or against any of these groups. Further analysis suggests that attrition also occurred fairly equally across all outcome variables apart from house ownership: attrition is significantly higher among households not owning their house than among households that do own their house. As house ownership is commonly associated with higher wealth, and because people who don't own their own house are more likely to migrate, impact estimates may therefore be biased upwards.

[5] A separate report on the baseline qualitative fieldwork was written: S. Devereux and K. Roelen (December 2013), Concern Burundi Graduation Model Programme: Qualitative Baseline Report, Brighton: Centre for Social Protection, Institute of Development Studies.

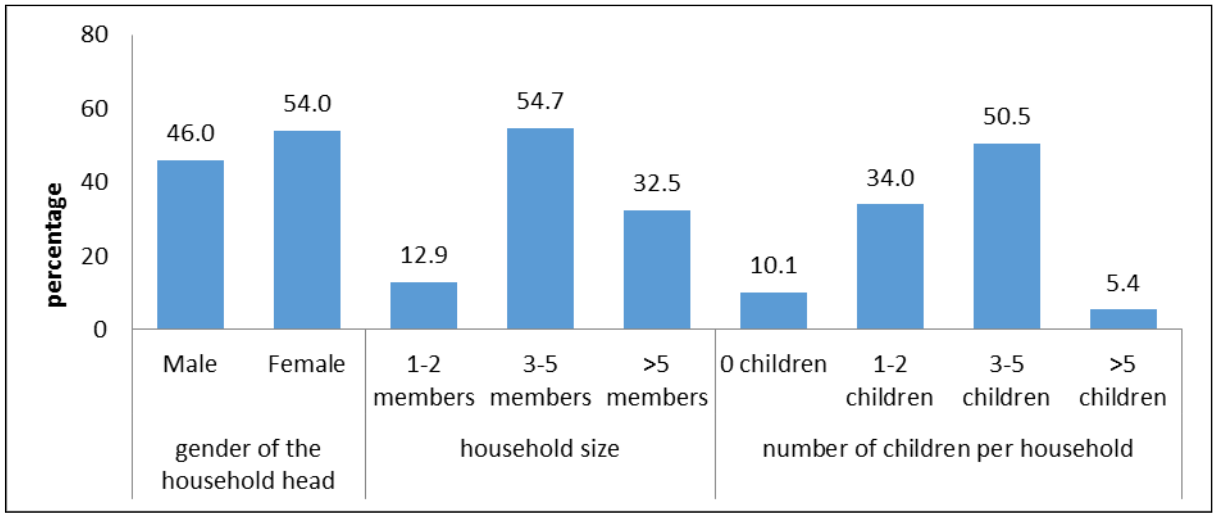
**Table 2. Sample size and attrition, by programme status and province (quantitative survey)**

| Households | Cibitoke | | | | Kirundo | | | | Total | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | T1 | T2 | C | Total | T1 | T2 | C | Total | T1 | T2 | C | Total |
| **Baseline** | 501 | 496 | 303 | 1300 | 499 | 504 | 297 | 1300 | 1000 | 1000 | 600 | 2600 |
| **Midline** | 485 | 479 | 291 | 1255 | 485 | 490 | 278 | 1253 | 970 | 969 | 569 | 2508 |
| **Endline** | 461 | 453 | 274 | 1188 | 441 | 447 | 257 | 1145 | 902 | 900 | 531 | 2333 |
| **Attrition (%)** | 8.0 | 8.7 | 9.6 | 8.6 | 11.6 | 11.3 | 13.5 | 11.9 | 9.8 | 10 | 11.5 | 10.3 |

T1 = High treatment households, T2 = low treatment households, C = control group households

Characteristics of the panel sample (i.e. households that were included in all three rounds of data collection) are presented in Figure 1. Slightly more than half of all households are female-headed and include three to five household members. Nine in 10 households includes at least one child.

**Figure 1. Characteristics of panel sample**




The monitoring surveys were only administered to participants in the treatment groups. Response rates ranged between 85% and 95%.

The qualitative research included programme staff, programme participants from the high-treatment group (T1) and low-treatment group (T2) and non-participants from the control group. A detailed overview of sampling and methods used in both rounds of data collection is presented in Table 3. All respondent categories were included in both rounds apart from the community members, who were only interviewed in the first round. In terms of sampling, the Focus Group Discussions (FGDs) did not necessarily include the same respondents, while the Key Informant Interviews (KIIs) and Case Studies (CSs) were undertaken with the same individuals and households in both rounds (with a few exceptions following staff turnover or changes in programme participation).

**Table 3. Overview of sampling and methods (qualitative fieldwork)**

| | Kirundo | | | Cibitoke | | | Method | Total |
|---|---|---|---|---|---|---|---|---|
| *Respondent category* | **Nyabikenke Bugabira** | **Kagege, Busoni** | **Sigu, Busoni** | **Rushiha, Mabayi** | **Ruziba, Mugina** | **Nyangwe, Bukinanyana** | | |
| | *Colline with commune centre* | *Accessible colline* | *Remote colline* | *Colline with commune centre* | *Accessible colline* | *Remote colline* | | |
| *Concern supervisor* | 1 | 1 | 1 | 1 | 1 | 1 | KII | **6** |
| *Concern case manager* | 1 | 1 | 1 | 1 | 1 | 1 | KII/FGD | **6** |
| *Community members* | 1 | 1 | 1 | 1 | 1 | 1 | FGD/ PRA | **6** |
| *T1 beneficiary households* | 2 (1 male, 1 female) | 2 (1 male, 1 female) | 2 (1 male, 1 female) | 2 (1 male, 1 female) | 2 (1 male, 1 female) | 2 (1 male, 1 female) | FGD | **12** |
| *T2 beneficiary households* | 2 (1 male, 1 female) | 2 (1 male, 1 female) | 2 (1 male, 1 female) | 2 (1 male, 1 female) | 2 (1 male, 1 female) | 2 (1 male, 1 female) | FGD | **12** |
| *Control group households* | 1 (mixed) | 1 (mixed) | 1 (mixed) | 1 (mixed) | 1 (mixed) | 1 (mixed) | FGD | **6** |
| *T1 beneficiary household* | 2 (1 male, 1 female) | 2 (1 male, 1 female) | 2 (1 male, 1 female) | 2 (1 male, 1 female) | 2 (1 male, 1 female) | 2 (1 male, 1 female) | CS | **12** |
| *T2 beneficiary household* | 2 (1 male, 1 female) | 2 (1 male, 1 female) | 2 (1 male, 1 female) | 2 (1 male, 1 female) | 2 (1 male, 1 female) | 2 (1 male, 1 female) | CS | **12** |
| *Control group household* | 1 | 1 | 1 | 1 | 1 | 1 | CS | **6** |
| ***Total*** | ***13*** | ***13*** | ***13*** | ***13*** | ***13*** | ***13*** | | **78** |

*Note: KII stands for Key Informant Interview, FGD stands for Focus Group Discussion, PRA stands for Participatory Rural Appraisal and CS stands for Case Study.*

## 2.4. Presentation of findings

The presentation of findings in this report capitalises on the rich combination of data that was collected throughout the programme period, especially the quantitative data collected at baseline, midline and endline and the qualitative data collected at the end of the programme period. Chapters 3 to 15 focus on assessing whether or not the *Terintambwe* programme had an effect on a range of material, behavioural and social outcomes, and on the direction and magnitude of observed impacts. As such these chapters primarily include quantitative data analysis, complemented with analysis of qualitative data if and when appropriate. Chapters 16 and 17 aim to provide explanations for the impacts observed in reference to programme components and implementation, relying mostly on contextual and in-depth information as available in the qualitative data.

Unless otherwise indicated, all tables in chapters 3-15 present difference-in-differences (d-i-d) results rather than descriptive statistics, which are represented in accompanying graphs and are available in a separate Excel annex. To understand how to interpret d-i-d tables,

consider the case of having a seriously leaking roof. Table 4 shows the 'yes, a lot' answers to the question: 'When it rains, do you get water leaking from the roof?'

**Table 4. Proportion of households who have a seriously leaking roof**

| | Descriptive statistics | | |
|---|---|---|---|
| **Cibitoke** | **Baseline** | **Midline** | **Endline** |
| T1 | 52.3% | 15.7% | 9.1% |
| T2 | 56.5% | 16.7% | 7.9% |
| C | 52.1% | 61.2% | 54.3% |
| **Kirundo** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** |
| T1 | 82.0% | 29.1% | 15.1% |
| T2 | 78.6% | 31.6% | 20.0% |
| C | 80.5% | 68.7% | 55.0% |
| **Total** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** |
| T1 | 67.1% | 22.4% | 12.0% |
| T2 | 67.6% | 24.3% | 14.0% |
| C | 66.2% | 64.9% | 54.6% |

In the main text (section 3.2), the following d-i-d table is presented.

**Table 5. Proportion of households who have a seriously leaking roof**

| | Treatment Effects | | | |
|---|---|---|---|---|
| Cibitoke | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | -0.456*** | -0.454*** | 0.003 | Sustained decrease |
| T2 vs C | -0.488*** | -0.506*** | -0.019 | Sustained decrease |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| Kirundo | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | -0.411*** | -0.414*** | -0.003 | Sustained decrease |
| T2 vs C | -0.352*** | -0.331*** | 0.021 | Sustained decrease |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| Total | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | -0.435*** | -0.436*** | -0.001 | Sustained decrease |
| T2 vs C | -0.422*** | -0.423*** | -0.001 | Sustained decrease |
| Sig. Test T1 vs T2 | ns | ns | ns | |

What does "–0.456***" for Cibitoke T1 households mean? It is the difference between the baseline and midline proportion of T1 households in Cibitoke who have a seriously leaking roof, after controlling for the difference between the baseline and midline proportion of control group households in Cibitoke who save. The calculation is performed as follows:

Difference #1 (treatment group): 15.7% – 52.3% = -36.6% (T1 midline – baseline)
Difference #2 (control group): 61.2% – 52.1% = 9.0% (C midline – baseline)
Difference-in-differences: -36.6 – 9.0 = 45.6 (change in T1 – change in C).

Unless otherwise indicated, the numbers in a d-i-d table represent a proportion (0.456) rather than a percentage (45.6%) because this number represents a change in percentage points, it is not a percentage change.

Two asterisks (**) indicates that this change is highly statistically significant (*, ** and *** indicate significance at 10%, 5% and 1% respectively), as might be intuitively expected when the proportion of treatment households (T1) that save jumps from 2.7% to 94.8%, while there is only a relatively small increase in the proportion of control households (C) that save, from 2.7% to 6.5% over the same time period. On the other hand, there is no significant difference between T1 and T2 on this indicator, as indicated by 'ns', meaning 'not significant'.

To facilitate interpretation of the overall impact from baseline to midline to endline, an additional column provides a trend description. We use the following terms to denote impacts:

| | |
|---|---|
| Upward increase | Significant increase from baseline to midline and from midline to endline |
| Downward decrease | Significant decrease from baseline to midline and from midline to endline |
| Sustained increase | Significant increase from baseline to midline but no further significant change from midline to endline |
| Sustained decrease | Significant decrease from baseline to midline but no further significant change from midline to endline |
| Late increase | No significant change from baseline to midline but significant increase from midline to endline |
| Late decrease | No significant change from baseline to midline but significant decrease from midline to endline |
| Non-isolated impact | Significant increase or decrease from baseline to midline and significant opposite effect from midline to endline, cancelling out overall impact effect. |

Qualitative findings are presented using quotes *("…"),* often embedded in the text, or as separate case studies in text boxes.

# 3. LIVING CONDITIONS

During the baseline, midline and endline surveys individuals were asked about house ownership, housing materials and quality of roofing, as well as sanitation facilities and lighting. The midline survey did not ask about sources of drinking water and cooking fuel or the total area of the house, so these are analysed only between baseline and endline.

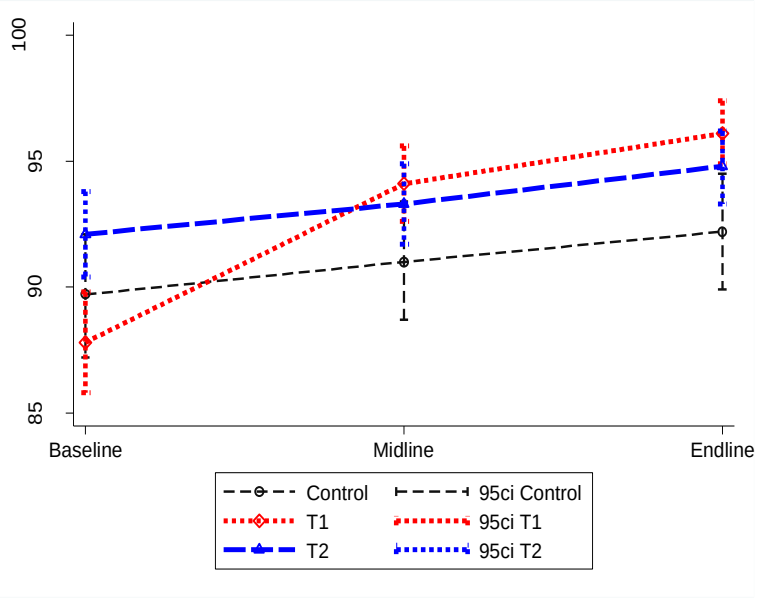
## 3.1. House ownership

Table 6 reveals that programme participants in T1 in Cibitoke have significantly increased their house ownership, by 8.6 percentage points between baseline and midline and by 10.7 percentage points between baseline and endline. There was no increase in house ownership between midline and endline, which indicates that the increase in house ownership has been sustained up to the endline. There has been no significant increase for participants in T1 in Kirundo or for participants in T2. The difference between T1 and T2 households is significant at 1% confidence in Cibitoke for midline and endline. These results are shown also in Figure 2.

**Table 6. Proportion of households who own their house**

| | Treatment Effects | | | |
|---|---|---|---|---|
| Cibitoke | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | 0.086*** | 0.107*** | 0.020 | Sustained increase |
| T2 vs C | 0.021 | 0.022 | 0.001 | No change |
| Sig. Test T1 vs T2 | *** | *** | ns | |
| Kirundo | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | 0.012 | 0.008 | -0.004 | No change |
| T2 vs C | -0.024 | -0.020 | 0.005 | No change |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| Total | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | 0.049** | 0.058*** | 0.009 | Sustained increase |
| T2 vs C | -0.002 | 0.002 | 0.003 | No change |
| Sig. Test T1 vs T2 | *** | *** | ns | |

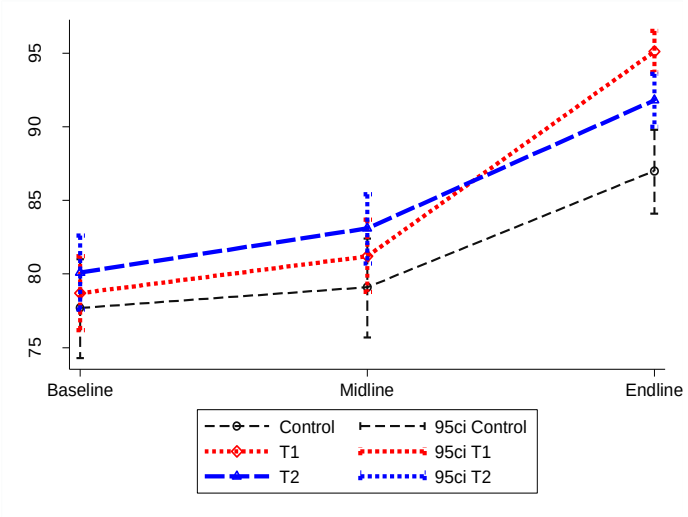
**Figure 2. Proportion of households who own their house over time**




For many programme participants, being able to move into a home of their own was the most important contribution that *Terintambwe* made to their lives. *("We were renting a house and the owner's son used to come at night to threaten us to leave the house but Terintambwe enabled us to buy a land and build our own home"* [C-Bu-T1F].)

Regarding the ownership of the land on which the house is located, we observe a significant but small (6 percentage point) increase in the share of T1 households who own the land on which their house is located, from midline to endline (see Table 7). However, no significant increase is detected for T2 households compared to the control group. Figure 3 represents average ownership rates for all three time periods and all three groups, with 95% confidence.

**Figure 3. Percentage of households that own the land on which their house is located**




The fact that there is only a significant programme effect found in T1 households and that this effect is small may be explained by the overall high average ownership rate at baseline (above 70% for all groups). This means that overall, the households that could potentially have improved on this indicator were few. In terms of trends over time, the significant increase in ownership rates for T1 recipients occurs solely between the midline and the endline survey, in both Cibitoke and Kirundo. Table 7 represents the difference-in-difference results for the ownership of plots on which the house is located.

**Table 7. Treatment effect on the ownership of land on which the house is constructed**

| Cibitoke | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
|---|---|---|---|---|
| T1 vs C | 0.016 | 0.082** | 0.066* | Late increase |
| T2 vs C | 0.022 | 0.010 | -0.012 | No change |
| Sig. Test T1 vs T2 | ns | ** | ** | |
| **Kirundo** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | 0.003 | 0.062* | 0.059* | Late increase |
| T2 vs C | 0.007 | 0.042 | 0.035 | No change |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| **Total** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | 0.010 | 0.071*** | 0.060** | Late increase |
| T2 vs C | 0.014 | 0.023 | 0.008 | No change |
| Sig. Test T1 vs T2 | ns | ** | ** | |

## 3.2. Housing materials

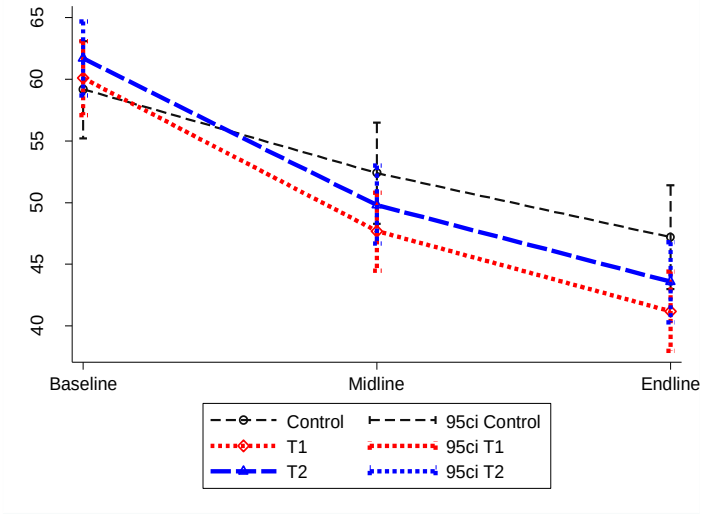
We observe a substantial drop in the proportions of participants using trees and mud as main materials for their walls and a corresponding increase in the proportion using unfired bricks. Improvements in wall materials also took place among the control group in both Cibitoke and Kirundo. As a result the *Terintambwe* programme does not have a significant attributable impact in Cibitoke. The programme has a small but significant impact for T1 households in Kirundo but no significant impact for T2 households in Kirundo.

Nonetheless, *Terintambwe* enabled many people to upgrade the quality of their housing – in some cases, from a grass hut to a brick house. *("For the first time in my entire life, I live in a house built with bricks"* [C-Bu-T1M]; *"I used to live in a hut but I have built a better and bigger house thanks to Terintambwe"* [K-Si-T2M].)

**Table 8. Proportion of households whose house walls are made of tree and mud**

| | Treatment Effects | | | |
|---|---|---|---|---|
| **Cibitoke** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | -0.048 | -0.066 | -0.018 | No change |
| T2 vs C | -0.069 | -0.090* | -0.021 | No change |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| **Kirundo** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | -0.074* | -0.079* | -0.005 | Sustained decrease |
| T2 vs C | -0.042 | -0.045 | -0.003 | No change |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| **Total** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | -0.060* | -0.072** | -0.012 | Sustained decrease |
| T2 vs C | -0.054* | -0.066** | -0.012 | Sustained decrease |
| Sig. Test T1 vs T2 | ns | ns | ns | |

**Figure 4. Proportion of households whose house walls are made of tree and mud**

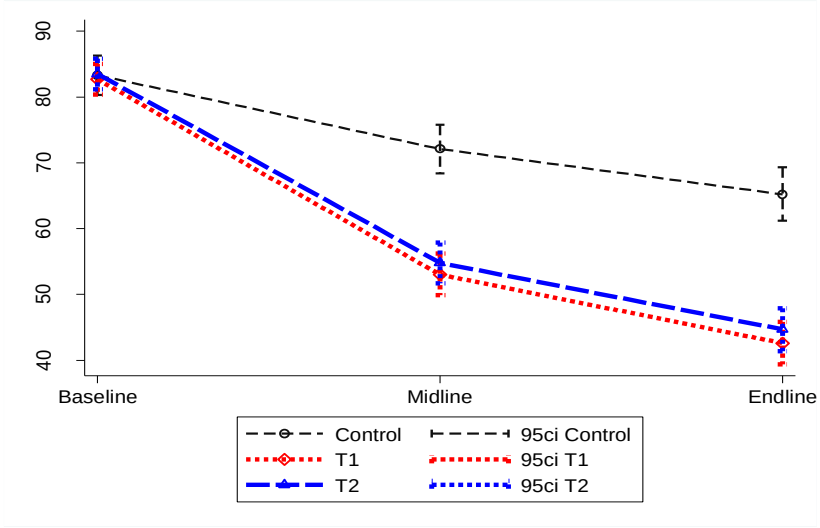



Sustained improvements over time can be observed with respect to roofing material, with the proportion of programme participants with grass or tree roofs having fallen in both Cibitoke and Kirundo. *("I have a house covered with metal sheets"* [C-Bu-T2M].) We observe a sharp decrease in the proportions of households having roofs made of trees or grass from baseline to midline, but with no further significant decline between midline and endline (Table 9). Figure 5 clearly shows these results. We do not find significant differences between T1 and T2 beneficiaries with respect to improvements in roofing materials relative to the control group.

**Table 9. Proportion of households whose house roof materials are trees and grass**

| | Treatment Effects | | | |
|---|---|---|---|---|
| Cibitoke | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | -0.196*** | -0.238*** | -0.043 | Sustained decrease |
| T2 vs C | -0.212*** | -0.267*** | -0.055 | Sustained decrease |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| Kirundo | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | -0.171*** | -0.200*** | -0.028 | Sustained decrease |
| T2 vs C | -0.137*** | -0.146*** | -0.010 | Sustained decrease |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| Total | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | -0.184*** | -0.220*** | -0.036 | Sustained decrease |
| T2 vs C | -0.174*** | -0.207*** | -0.033 | Sustained decrease |
| Sig. Test T1 vs T2 | ns | ns | ns | |

**Figure 5. Proportion of households whose house roof is made of trees and grass over time**

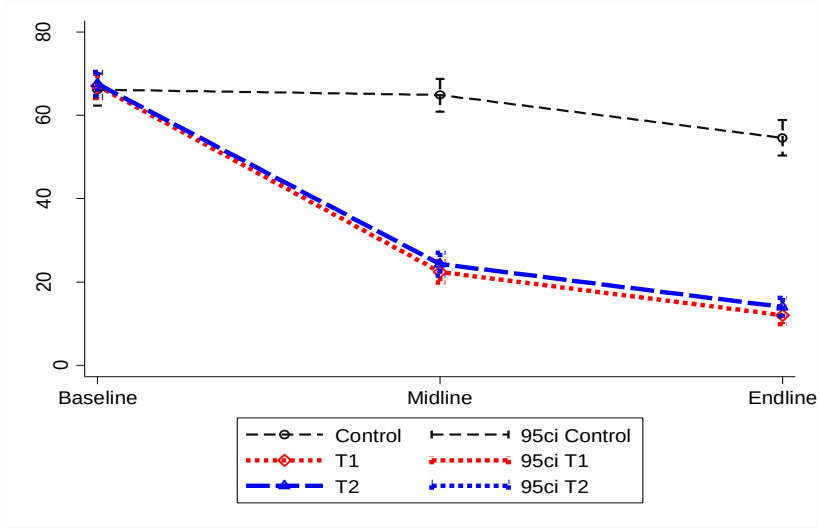



Proportions of programme participants with leaking roofs decreased substantially with no corresponding improvement in control group households, making this a highly significant attributable impact of the programme over time (Table 10). The effects were very similar across both treatment groups and in both provinces. Improvements took place primarily from baseline to midline, which were sustained between midline and endline (Figure 6). The size of the improvement was substantial, with up to a 50 percentage point reduction in the proportion of households with leaking roofs.

**Table 10. Proportion of households with a seriously leaking roof**

| | Treatment Effects | | | |
|---|---|---|---|---|
| Cibitoke | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | -0.456*** | -0.454*** | 0.003 | Sustained decrease |
| T2 vs C | -0.488*** | -0.506*** | -0.019 | Sustained decrease |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| Kirundo | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | -0.411*** | -0.414*** | -0.003 | Sustained decrease |
| T2 vs C | -0.352*** | -0.331*** | 0.021 | Sustained decrease |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| Total | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | -0.435*** | -0.436*** | -0.001 | Sustained decrease |
| T2 vs C | -0.422*** | -0.423*** | -0.001 | Sustained decrease |
| Sig. Test T1 vs T2 | ns | ns | ns | |

**Figure 6. Proportion of households with a seriously leaking roof**




## 3.3. Area of house

Information about size of houses was collected at baseline and endline. Households were asked to report on the shape of their house (whether it was a round hut or a squared, rectangular property) and respective dimensions. Overall, *Terintambwe* helped participant households to upgrade their living area. In Cibitoke, average area of the house increased by 5.2 square meters relative to control group households for T1 participants. There was no significant impact for T2 participants, leading to a small but significant differential impact of the programme for T1 and T2 participants. In Kirundo, the programme significantly improved housing area for both T1 and T2 participants. The increase was 3.5 and 4.2 square meters for T1 and T2 participants relative to control group, respectively.

**Table 11. Area of the house**

| | Treatment Effects |
|---|---|
| Cibitoke | Baseline-Endline |
| T1 vs C | 5.279*** |
| T2 vs C | 2.445 |
| Sig. Test T1 vs T2 | * |
| Kirundo | Baseline-Endline |
| T1 vs C | 3.512* |
| T2 vs C | 4.230*** |
| Sig. Test T1 vs T2 | ns |
| Total | Baseline-Endline |
| T1 vs C | 4.412*** |
| T2 vs C | 3.376*** |
| Sig. Test T1 vs T2 | ns |

## 3.4. Sanitation facilities

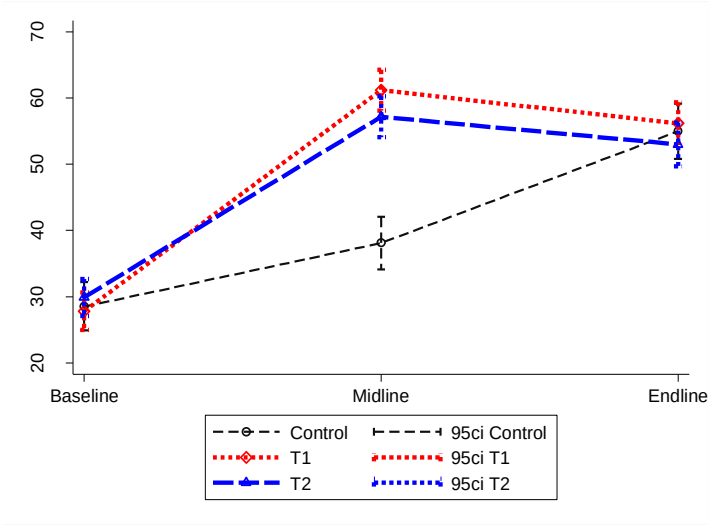
The *Terintambwe* programme significantly improved the use of hygienic toilet facilities from baseline to midline, but results in Table 12 also suggest a significant negative impact from midline to endline. A consideration of actual trends in Figure 7, however, clarifies that this seemingly negative treatment effect can be explained by a slight deterioration in toilet facilities for treatment participants but a large improvement for control group members. The proportion of control group households with access to hygienic toilet facilities increased substantially between midline and endline, and the proportion is similar to T1 and T2 beneficiaries in endline.

**Table 12. Proportion of households who have hygienic toilet facilities**

| | Treatment Effects | | | |
|---|---|---|---|---|
| Cibitoke | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | 0.351*** | 0.052 | -0.299*** | non-isolated impact |
| T2 vs C | 0.313*** | -0.008 | -0.321*** | non-isolated impact |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| Kirundo | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | 0.131*** | -0.008 | -0.139*** | non-isolated impact |
| T2 vs C | 0.054 | -0.045 | -0.099** | non-isolated impact |
| Sig. Test T1 vs T2 | ** | ns | ns | |
| Total | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | 0.240*** | 0.020 | -0.220*** | non-isolated impact |
| T2 vs C | 0.179*** | -0.032 | -0.210*** | non-isolated impact |
| Sig. Test T1 vs T2 | ** | * | ns | |

*Note: The definition of 'hygienic toilet facility' is based on WHO guidelines for improved sanitation facilities and includes flush/pour flush, pit latrine with slab and composting toilet.*

**Figure 7. Proportion of households who have hygienic toilet facilities**



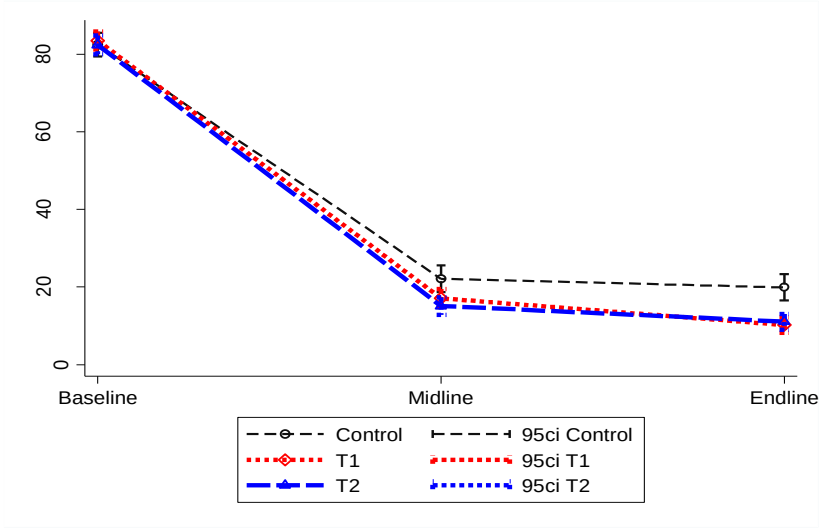

## 3.5. Sources of lighting

Another aspect of housing conditions is the source of lighting. In Cibitoke the proportion of households using firewood as their source of lighting declined significantly between baseline and midline, which was sustained between midline and endline. The programme reduced the proportion of households using firewood by 17 percentage points between baseline and midline and by 19 percentage points between baseline and endline (Table 13). There is no significant difference in impact between T1 and T2 beneficiaries. In Kirundo we observe no significant impact of the programme on the use of firewood. In total, the significant increase in this indicator is driven by the significant improvement for beneficiaries in Cibitoke (Figure 8).

**Table 13. Proportion of households using firewood as source of lighting**

| | Treatment Effects | | | |
|---|---|---|---|---|
| Cibitoke | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | -0.173*** | -0.195*** | -0.021 | Sustained decrease |
| T2 vs C | -0.177*** | -0.191*** | -0.015 | Sustained decrease |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| Kirundo | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | 0.054 | -0.017 | -0.070 | No change |
| T2 vs C | 0.037 | 0.020 | -0.017 | No change |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| Total | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | -0.061** | -0.108*** | -0.047 | Sustained decrease |
| T2 vs C | -0.071** | -0.088*** | -0.017 | Sustained decrease |
| Sig. Test T1 vs T2 | ns | ns | ns | |

**Figure 8. Proportion of households using firewood as source of lighting**



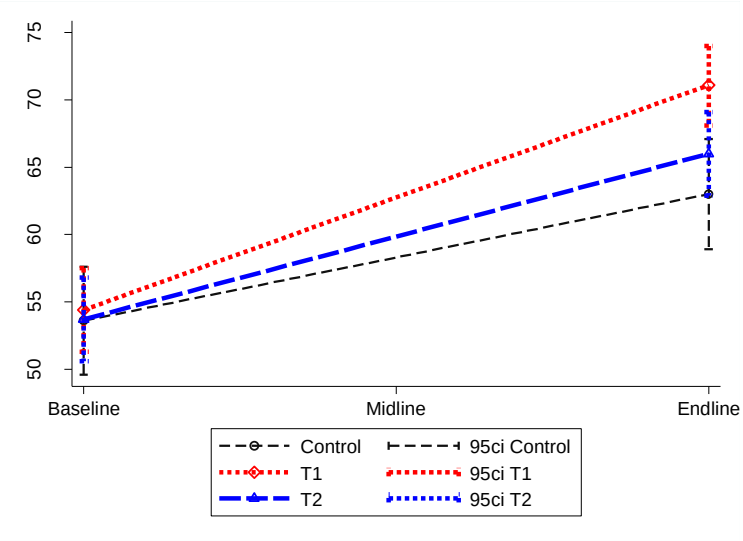

## 3.6. Sources of drinking water

Sources of drinking water were classified as 'safe' or 'unsafe' following WHO criteria. Households who access drinking water from a public tap, a tube well, a protected well or a protected spring were classified as having reasonable quality of access to drinking water. Other sources, usually non-protected, were considered of poor quality and unsafe. Sources of drinking water were collected at baseline and endline only. We observe significant programme impacts on this indicator for T1 participants in Cibitoke (Table 14). We do not observe any impact for T2 participants in Cibitoke or in Kirundo, however. Figure 9 indicates that the lack of impact is due to control group members also having improved their sources of drinking water.

**Table 14. Access to drinking water by households**

| | Treatment Effects |
|---|---|
| Cibitoke | Baseline-Endline |
| T1 vs C | 0.102** |
| T2 vs C | 0.055 |
| Sig. Test T1 vs T2 | ns |
| Kirundo | Baseline-Endline |
| T1 vs C | 0.039 |
| T2 vs C | -0.002 |
| Sig. Test T1 vs T2 | ns |
| Total | Baseline-Endline |
| T1 vs C | 0.072** |
| T2 vs C | 0.028 |
| Sig. Test T1 vs T2 | ns |

**Figure 9. Access to drinking water by households**




## 3.7. Source of cooking fuel

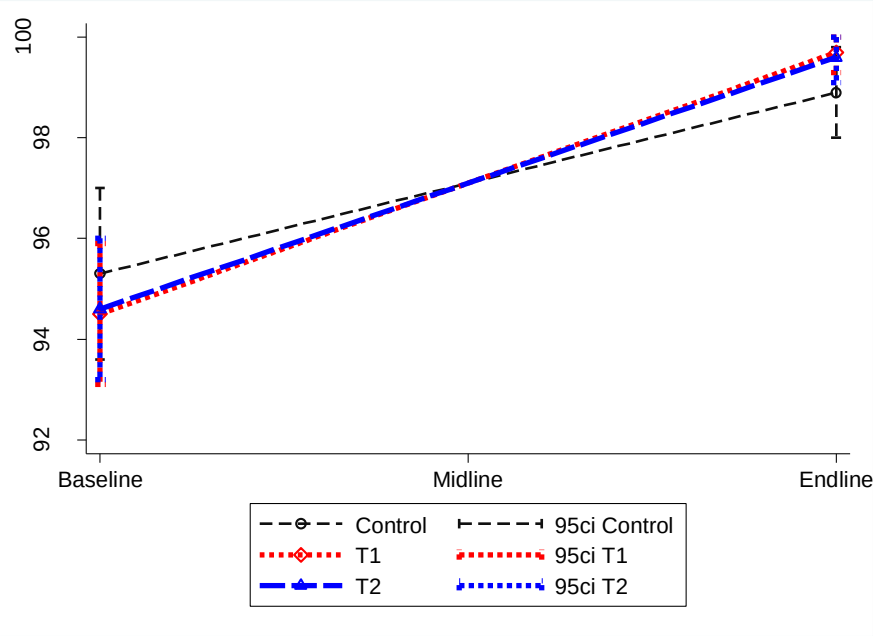
We observe no programme impacts with respect to the source of cooking fuel. Roughly 90% of *Terintambwe* participants and control group members in Kirundo and 99% of programme participants and control group members in Cibitoke used firewood or coal as their source of cooking fuel. We do not find any significant changes over time, with respect to this indicator.[6]

**Table 15. Proportion of households using firewood or coal as cooking fuel**

| | Treatment Effects |
|---|---|
| Cibitoke | Baseline-Endline |
| T1 vs C | 0.003 |
| T2 vs C | 0.003 |
| Sig. Test T1 vs T2 | ns |
| Kirundo | Baseline-Endline |
| T1 vs C | 0.030 |
| T2 vs C | 0.025 |
| Sig. Test T1 vs T2 | ns |
| Total | Baseline-Endline |
| T1 vs C | 0.016 |
| T2 vs C | 0.015 |
| Sig. Test T1 vs T2 | ns |

[6] Note that the scale on the y-axis of 10 only has a limited scale, from 92 to 100%. Although the graph appears to point towards a significant increase over time, these actually only reflect small percentages.

**Figure 10. Proportion of households using firewood or coal as cooking fuel**



# 4. INCOME

This chapter discusses programme impacts on income and occupation. Income calculations are based on income earned through occupation (including income-generating activities), but do not include cash received through the *Terintambwe* project. Income at endline is inflation-adjusted, assuming an inflation rate of 6%.[7] We only consider income at baseline and endline due to issues with data collection at midline. Programme impact on income should be understood within a wider perspective of income sources and experiences with occupations such as agricultural day labour, farming and IGAs with respect to the amount of income earned, frequency of income earned and level of autonomy in earning that income. Qualitative findings also point to the importance of labour capacity, both positively and negatively, following changes in demographic composition of the household or health status of household members.

## 4.1. Income from occupation

Findings suggest that the programme had a limited impact on income in terms of the amount of income earned through occupation. Table 16 presents the changes in median values of annual household income from baseline to endline[8]. Overall we observe a modest but non-significant increase for T1 and T2 households compared to a modest but non-significant decrease for the control group.

**Table 16. Annual household income from two main occupations (median)**

| | **Cibitoke** | | | **Kirundo** | | | **Total** | | |
|---|---|---|---|---|---|---|---|---|---|
| | T1 | T2 | Control | T1 | T2 | Control | T1 | T2 | Control |
| *Baseline* | 348,000 | 349,200 | 360,000 | 240,000 | 252,000 | 288,000 | 285,200 | 289,815 | 313,200 |
| *Endline* | 339,623 | 332,642 | 304,340 | 285,849 | 260,377 | 245,283 | 301,887 | 289,623 | 271,698 |
| *Significance test* | ns | ns | ns | ns | ns | ns | ns | ns | ns |

Difference-in-differences calculations analyse changes in income for the treatment groups in comparison to changes in the control group.[9] Estimates point towards mildly significant impacts in both Cibitoke and Kirundo. Although impacts are slightly larger for T1 households than T2 households, they are not significantly different. Descriptive statistics indicate that impacts are largely due to a decline in income of the control group over the project period.

[7] Reported inflation rate for 2014 from https://www.quandl.com/collections/burundi/burundi-inflation.

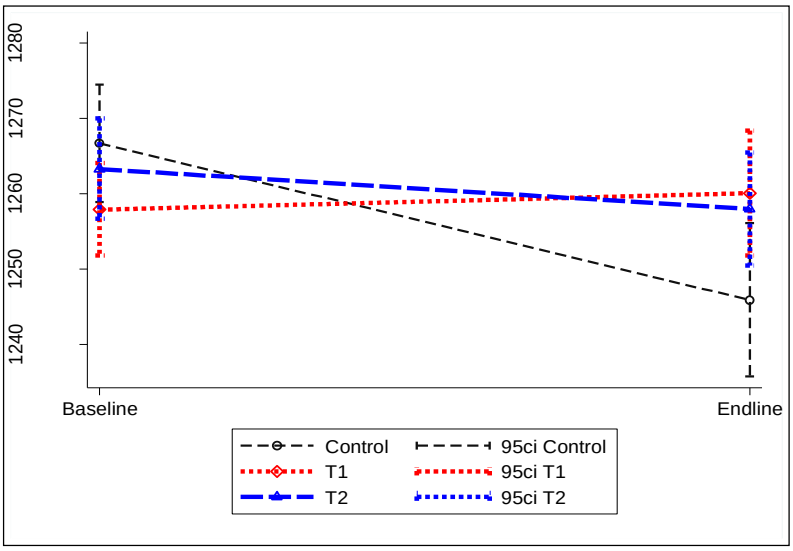
[8] We use median rather than mean values for reporting changes in income. Mean income is susceptible to distortion by outliers, i.e. exceptionally high incomes of only a few households will bias income values for group as a whole upwards. For this reason median income is a more accurate measure of average incomes than mean income.

[9] Calculations are based on log income as opposed to absolute income values. Income distributions are skewed to the right with few outliers representing very high income. Converting income to a logarithmic scale – or 'log income' – the income distribution is normalised and d-i-d calculations can be applied.

**Table 17. Impact on log household income**

| **Cibitoke** | **Baseline-Endline** |
|---|---|
| T1 vs C | 0.214* |
| T2 vs C | 0.187 |
| Significance test T1 vs T2 | ns |
| **Kirundo** | **Baseline-Endline** |
| T1 vs C | 0.236** |
| T2 vs C | 0.109 |
| Significance test T1 vs T2 | ns |
| **Total** | **Baseline-Endline** |
| T1 vs C | 0.228*** |
| T2 vs C | 0.153* |
| Significance test T1 vs T2 | ns |

**Figure 11. Log household income**




This limited programme impact on income as represented by the difference-in-differences calculations is likely to present an underestimation and should be interpreted with caution. Reasons for this underestimation include data estimation methods and external forces.

Firstly, calculations are based on income from primary and secondary occupation only.[10] This limits the inclusion of income sources, particularly from smaller income-generating activities that were generated throughout the programme period. Analysis of income sources suggests that the programme has supported livelihood diversification in an important way, leading to more income overall but in the form of smaller amounts from a wider range of sources. The nature of data collection, however, leads to omission of income earned from sources beyond the primary and secondary occupation (Box 1). Note that this does not imply that changes in income as a result of the programme are not reflected in the data as changes in income are also subject to a substitution effect: while many participants will have added occupations, they

[10] Data was collected for two occupations as this was considered to fairly reflect the number and range of occupations held by community members in Cibitoke and Kirundo at the time of the baseline survey.

will also have replaced a previously held main occupation with another, mostly by replacing daily wage labour with farming or IGAs, and these constitute the biggest proportions of income.

**Box 1. Household case study – Murabigwe from Kirundo**

Murabigwe is a T2 programme participant in Kirundo province. She is a widow with two daughters (aged 18 and 20 at the time of the endline survey) but she is the only person earning an income in the household. Before the start of the programme her primary occupation was agricultural day labour but *Terintambwe* helped her to diversify her income sources. During a participatory exercise designed to understand changes in income sources she was given 20 tokens to distribute across the income sources before the programme. She was then asked how much her income had increased and to distribute a multitude of tokens representing that income across income sources after programme participation. She indicated that her new income was generated through five sources rather than one and amounted to a total that was approximately five times her income at baseline.

| Before *Terintambwe* (baseline) - 20 tokens | After *Terintambwe* (endline) - 100 tokens |
|---|---|
| Working on other people's fields - 20 | Working on other people's fields - 9 |
| | Selling crops from sharecropping - 10 |
| | Selling banana juice IGA - 37 |
| | Extra IGAs (avocados, bananas, oranges) - 32 |
| | Selling goat manure (fertiliser) - 12 |

Triangulation of these quantitative findings with data from the quantitative household survey highlights how the way in which information about income is collected may result in under-estimations. Analysis of survey findings indicates that Murabigwe reported agricultural day labour to be her primary and only occupation at baseline. At endline, she reported farming of her own land to be her primary occupation and selling banana juice to be her secondary occupation. As a result her income earnings from agricultural day labour, extra IGAs and selling goat manure would not be captured in income calculations.

Secondly, income earnings from IGAs were accounted for in terms of profit rather than revenue, which may result in lower daily earning compared to day labour rates, particularly as most respondents had only recently established their IGAs at the time of the endline survey. As indicated by Pascal from Cibitoke: *"I usually work on tea fields where I earn an income that is higher compared to what the banana business generates"* [C-Bu-CT1M]. Income from IGA earnings and farming on own land may also be subject to underestimation in comparison to earnings from day labour as income from those sources is much harder to estimate at a periodical basis than day labour is.

Finally, external forces may have resulted in an underestimation of income, including failed banana harvests and decreased income from mining. These forces disproportionately affect control group members as they did not receive help to support livelihood diversification. Siras from Cibitoke says: *"The changes that occurred are not related to Terintambwe. Bananas were attacked by diseases hence there are no crops to sell anymore. I make less money from mining because of the new restrictions that prevent us from working in that sector as much as we used to but also there is not much gold to extract from areas where we work."* [C-Mu-CCG] Daniel from Cibitoke also points towards lower crop yields from bananas – *"bananas do not grow in large quantities as in the past"* [C-Ma-CT2M] – but his many occupations allowed him to generate increased income (see Box 2).

As a result, calculations regarding the impact of the *Terintambwe* programme on programme participants' income should be qualified with further information and analysed in light of wider impacts on occupation, IGAs and livelihood diversification.

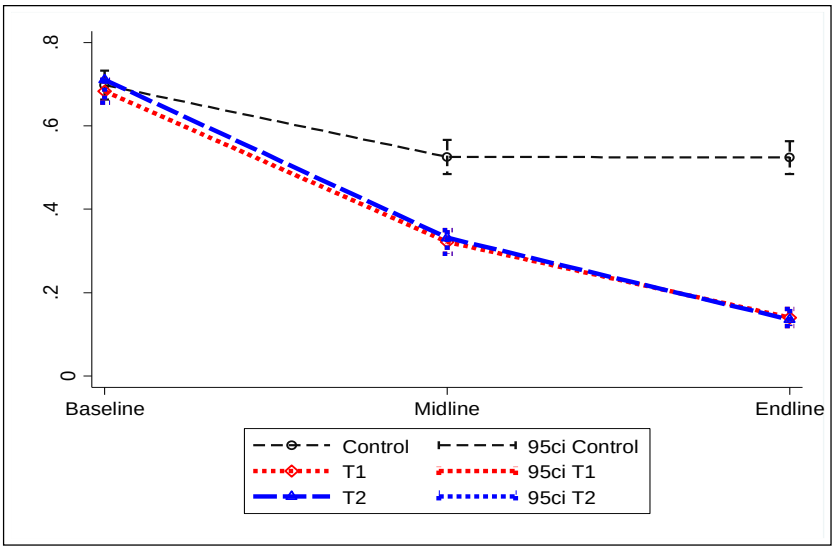
## 4.2. Occupation

The programme had a significant impact on types of occupation with which participants earn an income. The programme has significantly reduced the proportion of respondents with agricultural day labour as their primary occupation (Table 18 and Figure 12). Engagement in daily labour as a primary occupation steadily decreased since the start of the programme, with significant shifts away to other occupations from baseline to midline and from midline to endline (which many participants consider an important positive effects of the programme – see discussion below). While 75% of T1 and T2 respondents indicated agricultural day labour to be the primary occupation, this had dropped to 47% at midline and 18% at endline. The control group experienced a decrease in agricultural day labour as primary occupation but not to the same extent. The programme impact from baseline to endline is a reduction of 35 percentage points for T1 households and 39 percentage points for T2 households. There is a significantly higher impact on T2 households in Kirundo compared to T1 households. Respondents diversified into trade and income-generating activities but many also indicated farming to be their primary occupation at endline (despite the fact that 37% of those indicating to have farming as main activity at endline earn no income from this).

**Table 18. Impact on respondents having agricultural day labour as primary occupation**

| **Cibitoke** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
|---|---|---|---|---|
| T1 vs C | -0.221*** | -0.366*** | -0.145*** | downwards decrease |
| T2 vs C | -0.222*** | -0.362*** | -0.140*** | downwards decrease |
| Significance test T1 vs T2 | ns | ns | ns | |
| **Kirundo** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | -0.176*** | -0.326*** | -0.150*** | downwards decrease |
| T2 vs C | -0.217*** | -0.417*** | -0.150*** | downwards decrease |
| Significance test T1 vs T2 | ns | *** | ns | |
| **Total** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | -0.198*** | -0.345*** | -0.147*** | downwards decrease |
| T2 vs C | -0.221*** | -0.388*** | -0.168*** | downwards decrease |
| Significance test T1 vs T2 | ns | ** | ns | |

**Figure 12. Respondents having agricultural day labour as primary occupation**




An overview of primary occupation at endline for T1, T2 and control group members (Table 19) provides a more complete picture of income sources from occupation. *Terintambwe* participants have shifted primary occupation to farming own land and trade/IGAs. It should be noted that the proportions of respondents considering farming their own land as the primary occupation are larger than those considering the IGA as their primary occupation, particularly in Kirundo. While agricultural day labour remains an important primary occupation for the control group, a significant proportion has diversified into other occupations, which in some cases can be explained by a spillover effect from the programme at community level. Polonie, who is a member of the control group, from Cibitoke explains: *"Before Terintambwe started, I was only working for others. When the programme began, I started having a strong feeling of belonging to Terintambwe. When people started asking me what the programme was about I then started questioning the meaning of 'Terintambwe' ['moving forward'] and realised that I had to work hard to get out of my current situation. By seeing how other Terintambwe members were making significant progress, my mind opened up and since then I started undertaking the sharecropping activity since December 2013 in order to increase my income and be well off as well. Hence the increase of my income by three times, the biggest portion coming from sharecropping"* [C-Bu-CCG].

While income earned from other occupations may not be as high (yet) as from agricultural day labour, other elements were reported to be an important improvement in earning capacity. Greater frequency and reliability of income from the newly set up IGAs were considered one important issue that outweighed the potentially smaller amounts of income earned. As indicated by Pascal in Cibitoke: "*I usually worked on tea fields where I earn an income that is higher compared to what the banana business generates. However the former source of income is periodical, obtained every three months, while on the other hand I sell bananas more often. This explains the shift to the banana business category"* [C-Bu-CT1M].

**Table 19. Primary occupation at endline**

| | Cibitoke | | | Kirundo | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|
| ***Occupation*** | T1 | T2 | Control | T1 | T2 | Control | T1 | T2 | Control |
| *Farmer (own land)* | 39.74% | 41.57% | 28.54% | 60.99% | 61.43% | 33.17% | 49.08% | 50.58% | 30.57% |
| *Day labourer (agriculture)* | 9.14% | 9.98% | 41.14% | 18.09% | 15.86% | 52.51% | 13.07% | 12.65% | 46.14% |
| *Day labourer (non-agric.)* | 5.63% | 5.70% | 10.04% | 1.79% | 1.57% | 2.76% | 3.94% | 3.83% | 6.84% |
| *Handcraft* | 2.11% | 1.31% | 0.20% | 1.05% | 0.43% | 1.01% | 1.64% | 0.91% | 0.55% |
| *Services* | 0.47% | 0.95% | 1.18% | 1.05% | 1.14% | 1.51% | 0.72% | 1.04% | 1.32% |
| *Trade/IGA* | 26.03% | 26.37% | 2.36% | 8.82% | 10.29% | 1.01% | 18.46% | 19.07% | 1.77% |
| *Fisherman* | | 0.12% | | 0.75% | 0.86% | 0.25% | 0.33% | 0.45% | 0.11% |
| *Miner* | 7.62% | 6.53% | 5.31% | 0.15% | 0.29% | | 4.34% | 3.70% | 2.98% |
| *Domestic worker* | | 0.36% | | 0.15% | | | 0.07% | 0.19% | |
| *Unemployed* | 1.76% | 1.43% | 2.56% | 0.45% | 0.57% | 0.75% | 1.18% | 1.04% | 1.77% |
| *Education* | 4.22% | 2.85% | 3.15% | 2.69% | 3.57% | 3.52% | 3.55% | 3.18% | 3.31% |
| *Not able to work due to disability* | 3.28% | 2.85% | 5.51% | 4.04% | 4.00% | 3.52% | 3.61% | 3.37% | 4.64% |

Programme participants generally considered the move away from working as a day labourer for others an important improvement in their lives. As indicated by female participants in Cibitoke*: "We are very proud to not work for others anymore. Now we hire labour"* [C-Bu-T1F] and in Kirundo: *"We are Abakene because we have all made a step forward. Indeed, we used to work for others but today we own lands that we exploit and can have food"* [K-Ka-T2F]. The change in occupation from day labour to other occupations coupled with improvements in living conditions constitutes a move into a higher wealth category from Ntahonikora to Umukene: "*We are in the 'Umukene' category because we have made significant progress; now we eat what we want without having to work for others"* [C-Mu-T1M].

## 4.3. IGAs

*Terintambwe* participants were asked to choose from seven IGAs for which they received a tailored asset transfer based on their business plan. The asset transfer was made in three instalments. Table 20 reports the distribution of IGAs as selected by participants based on data from the monitoring survey in January 2015. The most popular activity in both Cibitoke and Kirundo is the sale of banana juice, followed by the sale of cassava flour and dried cassava. It should be noted that these percentages reflect the choice of IGAs as supported by the *Terintambwe* programme. The qualitative data highlights that many participants have started undertaking multiple IGAs following their participation in training and the SILCs. As highlighted by a female T2 participant from Cibitoke: *"I started selling vegetables alongside my other IGA. I did it because I wanted to increase my income and it is also a way for me to save money and not waste it"* [C-Bu-T2F].

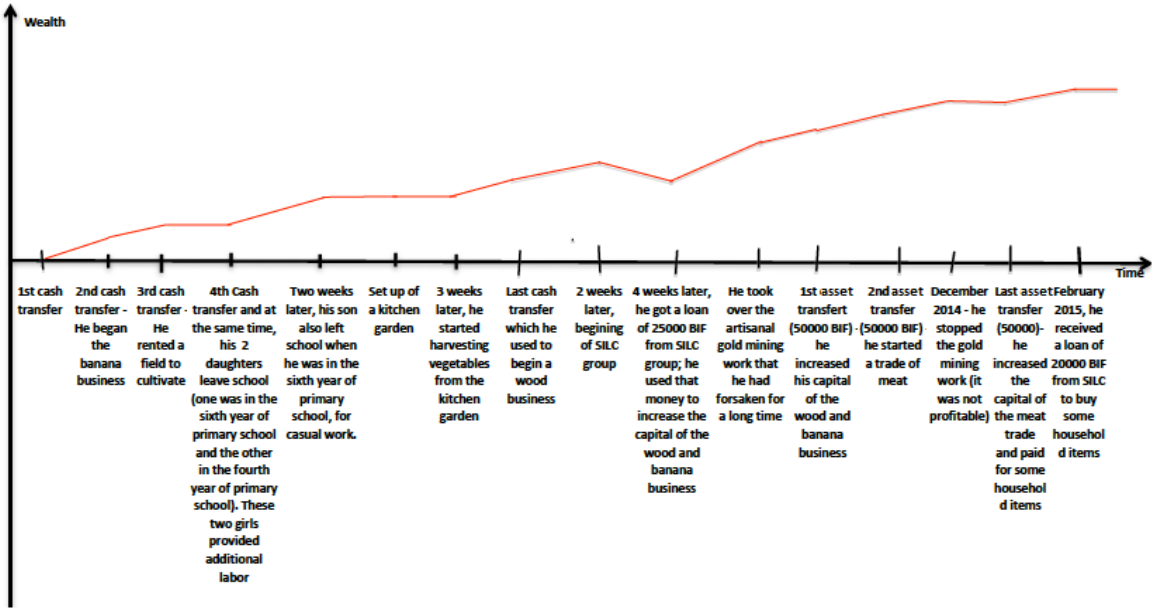
**Table 20. Selected IGAs by province and treatment group (January 2015)**

| Options | Cibitoke | | Kirundo | | Total | |
|---|---|---|---|---|---|---|
| | T1 | T2 | T1 | T2 | T1 | T2 |
| Selling dried cassava | 13% | 14% | 9% | 12% | 11% | 13% |
| Selling cassava flour | 18% | 19% | 29% | 30% | 23% | 24% |
| Cooking banana | 7% | 8% | 12% | 9% | 9% | 8% |
| Selling banana juice | 45% | 45% | 37% | 34% | 41% | 40% |
| Selling vegetables | 6% | 5% | 0% | 0% | 3% | 2% |
| Selling airtime | 0% | 0% | 2% | 4% | 1% | 2% |
| Charging phones | 9% | 9% | 9% | 9% | 9% | 9% |
| Other | 3% | 2% | 2% | 1% | 2% | 1% |

## 4.4. Labour capacity

Findings from case study analysis point towards the importance of labour capacity in *Terintambwe* participants' abilities to build on the momentum offered by programme participation. The case studies offer positive examples whereby increased labour capacity within participant households, due to children or other household members participating in income earning activities since the start of the programme, has been a key factor in allowing the maximisation of programme opportunities. Similarly, case study households that point to little to no change following programme participation have often suffered a loss in labour capacity, either due to illness or able-bodied members leaving the household. Box 2 and Box 3 provide examples of positive and challenging cases.

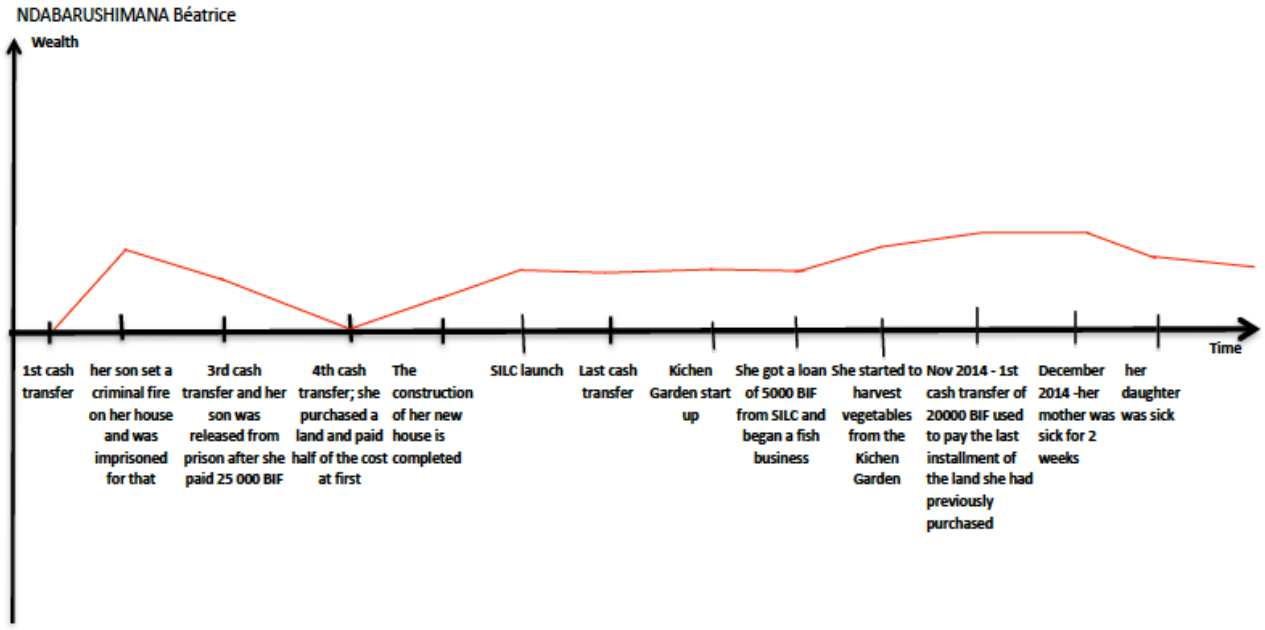
**Box 2. Household case study – Daniel from Cibitoke**




Daniel, a T1 participant in Cibitoke, has been one of the most successful participants in the programme judged by his increase in income and household wealth. His programme history diagram – illustrating changes in household wealth and accompanying events – and elaboration exemplify how a combination of *Terintambwe* programme support, entrepreneurial spirit and increased labour capacity in the household has contributed to a reported ten-fold increase in his income since the start of programme. He describes his improvement in household wealth as follows: *"We continue to exploit the family land and make money out of the crops. In regards to mining, I usually rent a land in a mining zone from which I extract gold. One month before we receive the first asset transfer, I rented a land for mining but I stopped in December 2014 because I found out that there was no much gold to extract from the field I rented. My son, who left school in the early stage of the programme, started mining as well until now and he brings home the income he earns from mining.*[11] *As for the IGAs, my wife and I preferred to not limit options to only what was proposed by Concern but we diversified our sources of income in order to improve on our living standards. Therefore with the asset transfers: we grew the banana business that we had started since the second cash transfer; it is ran by my wife. I also started selling brochettes in a bar. I have also expanded the business of trees that I had started since I acquired my first loan in SILC"* [C-Ma-CT2M].

[11] Children's engagement in livelihood activities can be an undesirable – if understandable – consequence of participation in graduation programmes such as *Terintambwe*, as households draw on all available labour capacity to capitalise on the new income-earning opportunities. (See Roelen (2015), 'The two-fold investment trap': children and their role in sustainable graduation, *IDS Bulletin*, 46(2): 25-34.)

**Box 3. Household case study - Beatrice from Cibitoke**




Beatrice is a participant in the high-treatment group and has been struggling with setbacks in her household that have compromised her ability to benefit from *Terintambwe* programme participation. Early on in the process her son was imprisoned and she used her transfer to pay for his release. She has since been able to purchase land and start a kitchen garden, both of which have positively contributed to household wealth. However, illness on behalf of both Beatrice and her daughter prevented her to invest in the selected IGA as planned and she received only one asset transfer as a result. Beatrice's health issues also prevent her from working as an agricultural day labourer: *"Since the start of the programme, I was able to purchase a piece of land that I paid gradually using savings I made from cash transfers and a portion of the profit I made from selling crops. I finished to pay the land with the first asset transfer. My child and I fell sick right after and so I used the remaining IGA funds to pay for healthcare fees and so I did not undertook the IGA as planned. I was therefore only given one asset transfer. However, I was able to start a small business of fish from a loan I acquired in SILC. I do not work on others people's fields due some health issues"* [C-Bu-CT1F].

# 5. ASSETS

In this section we show impacts in terms of asset accumulation after the cash transfer phase of the *Terintambwe* programme. Information was collected on a number of assets including domestic, farming and livestock. In addition, only in the midline and endline questionnaires, information was collected on certain assets which are important for supported income-generation activities. These assets are iron sheets, balance, sacks, wooden mortar to grind seeds, sieve, wooden trough to produce banana beer or cassava paste.

The analysis on assets (domestic, farming and livestock) is performed as follows. For each individual item we estimate the relative change in the number of such assets accumulated over time by programme participants relative to the control group. Then, we use local market prices to calculate the monetary value of each of the three types of assets. Local market prices are held constant over time to avoid inflating results due to price changes. The analysis is performed by the two treatment groups separately (high training and low training intensity) and by province (Cibitoke and Kirundo).

## 5.1. Domestic assets

We provide a summary of the overall findings on small domestic assets, which include ownership of saucepans, basins, jerry-cans, blankets, plates, chairs, tables, mats and mattresses:

- For all small domestic assets except for mattresses we find an increase in the ownership of these assets over time in favour of beneficiaries relative to control group.
- For none of the small domestic assets do we find any differences between beneficiaries in treatment group 1 and those in treatment group 2 relative to control group.
- For the following small domestic assets in Cibitoke we find that beneficiaries increased their ownership of assets from baseline to midline and from midline to endline relative to control group. Therefore, there is an upward increasing trend in ownership:
    - Saucepans
    - Basins
    - Blankets (see Figure 13)
    - Mats
- For the following small domestic assets in Kirundo we find that beneficiaries increased their ownership of assets from baseline to midline and from midline to endline relative to control group. Therefore, there is an upward increasing trend in ownership:
    - Jerry-cans (only beneficiaries in T1 relative to control group)
    - Blankets (see Figure 13)
    - Tables
- For the following small domestic assets (in Cibitoke and Kirundo) we find that beneficiaries increased their ownership of assets from baseline to midline with no

further increase in ownership between midline and endline. Therefore, there is an sustained increasing trend in ownership:

  - Saucepans, basins and mats in Kirundo
  - Jerry-cans in Cibitoke and Kirundo (only for beneficiaries in T2 relative to control group)
  - Plates and chairs in Cibitoke and Kirundo

- For ownership of mattresses we find no change between beneficiaries and control group over time in Kirundo, whereas in Cibitoke the increase in ownership of mattresses reported between baseline and midline shows a small decline between midline and endline (see Figure 14).

**Figure 13. Average number of blankets owned by households over time**

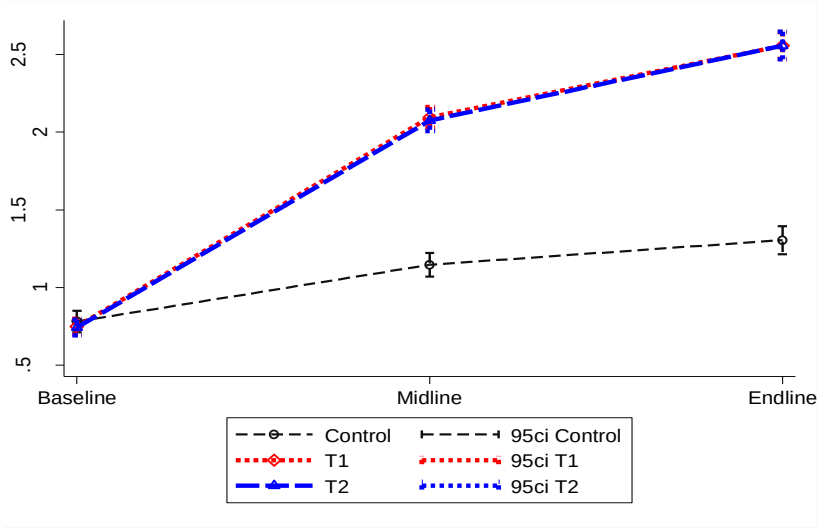
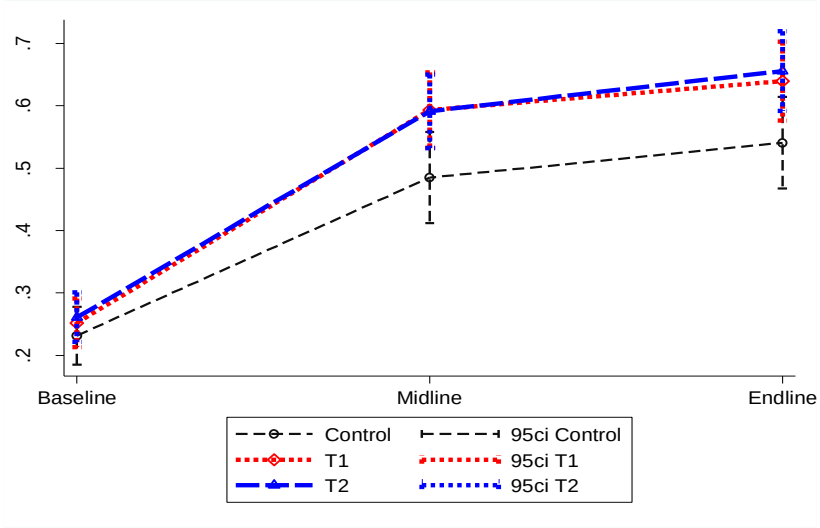



**Figure 14. Average number of mattresses owned by households over time**




Furthermore, information was also collected on the ownership of larger or more expensive domestic assets which included bicycles, mobile phones and radios. The following points summarise the results:

- For bicycles, there was a sustained increase in ownership in favour of beneficiaries relative to control group from baseline and midline, with no further increase in ownership from midline to endline in Kirundo. In Cibitoke, however, there was no change in the ownership of this asset over time.
- For mobile phones, there is a sustained increase in ownership in favour of beneficiaries relative to control group in Cibitoke. Mobile phone ownership for beneficiaries increased by 1 phone relative to control group from baseline to midline and remained at this value from midline to endline. This is a programme effect, since programme participants were all given a mobile phone.
- In Kirundo, however, the increase in mobile phone ownership found between baseline and midline declined from midline to endline (although beneficiaries remain better off relative to control group on average, as indicated in Figure 15). This implies that some of the phones distributed by Concern were lost, stolen, given away or sold.
- For radios, we find that in both Cibitoke and Kirundo beneficiaries increased their ownership of this asset from baseline to midline with no further increase from midline to endline, making a sustained trend in the ownership of radios.
- For none of the large domestic assets do we find any differences between beneficiaries in treatment group 1 and those in treatment group 2 relative to control group.

**Figure 15. Average number of mobile phones owned by households in Kirundo over time**

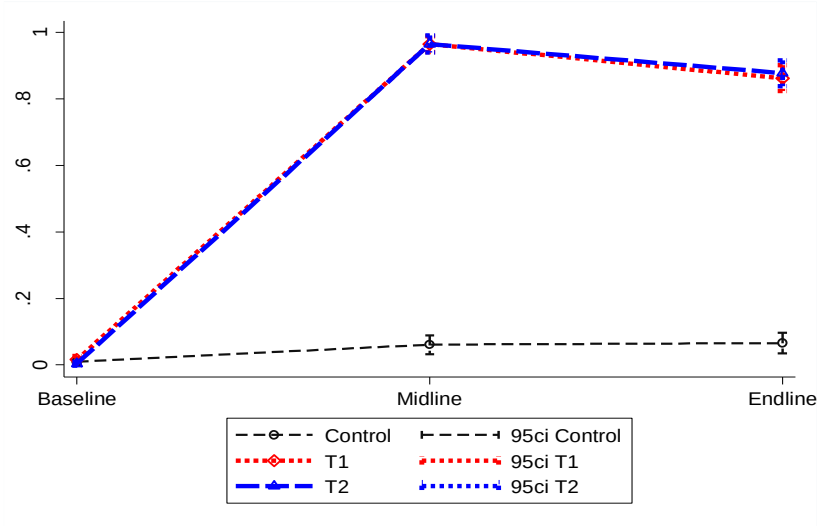


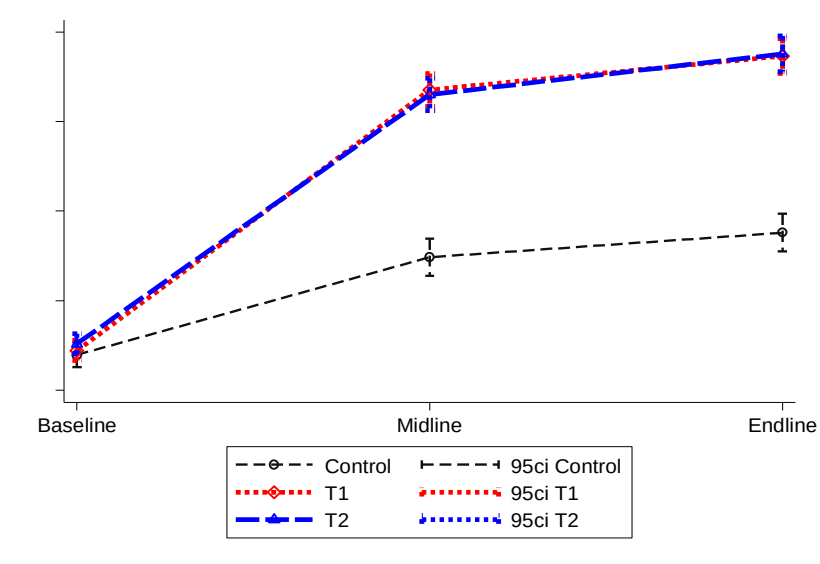

Table 21 shows relative changes in the value of domestic assets, which are obtained using prices from local markets held constant over time. We find that, on average, beneficiaries from the high treatment group increased the value of their domestic assets over time by 91,000 BiF relative to the control group from baseline to midline and by 96,000 BiF from baseline to endline (the increase of 5,000 BiF from midline to endline is not statistically significant). Beneficiaries in the low treatment group increased their domestic assets by 85,000 BiF relative to the control group from baseline to midline and by 94,000 BiF from baseline to endline. (The increase of 9,000 BiF from midline to endline is not statistically significant.) We found no statistical differences in the value of domestic assets between the low and the high treatment groups relative to the control group (see

Figure 16). However, we did find important regional differences. The net value of domestic asset accumulation in Cibitoke was over 100,000 BiF for both low and high treatment groups, whereas in Kirundo the relative increase in domestic assets was slightly lower. However, from midline to endline, the value of assets increased at a faster rate in Kirundo whereas in Cibitoke there was a slight decline.

**Table 21. Relative change in value of domestic assets over time**

| | Treatment Effects | | | |
|---|---|---|---|---|
| Cibitoke | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | 114,315*** | 105,515*** | -8,800 | Sustained increase |
| T2 vs C | 106,431*** | 100,541*** | -5,890 | Sustained increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| Kirundo | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | 67,191*** | 86,339*** | 19,148 | Sustained increase |
| T2 vs C | 62,182*** | 85,960*** | 23,778 | Sustained increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| Total | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | 91,212*** | 96,398*** | 5,284 | Sustained increase |
| T2 vs C | 84,800*** | 93,862*** | 9,134 | Sustained increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |

**Figure 16. Value of domestic assets owned by households over time**




Participants also acquired clothes, which are not captured in our lists of domestic assets but should not be underestimated, as decent clothing allowed them to participate with more dignity and less shame in community activities and events than before, as will be seen later in this report. *("I have five pairs of nice clothes at home, which never happened before"* [K-Si-T1F].)

## 5.2. Farming assets

We provide a summary on the overall findings on farming assets, which include ownership of hoes, ploughs, buckets and machetes.

- For hoes, we find a large increase in ownership between baseline and midline in Cibitoke, with a decline between midline and endline. Figure 17 shows that ownership of hoes did not decline for any of the treatment groups, but rather substantially increased for the control group. This is a contamination effect, since control group households were given hoes to compensate them for participating in the endline survey. In Kirundo, we find a sustained increase in hoe ownership, with the average increase from baseline to midline of around 0.6 of a hoe remaining the same when measured between baseline and endline.
- For ploughs, we did not find any changes over time (see Figure 18).
- For buckets, on the other hand, we find an upwards increase in the ownership both in Kirundo and in Cibitoke, with ownership of buckets increasing from baseline to midline and from midline to endline (see Figure 19).
- Finally, for machetes, we found mostly a sustained increase over time in favour of beneficiaries, with the average increase of 0.4 machetes from baseline to midline remaining at the same level from midline to endline.

**Figure 17. Number of hoes owned by households in Cibitoke over time**

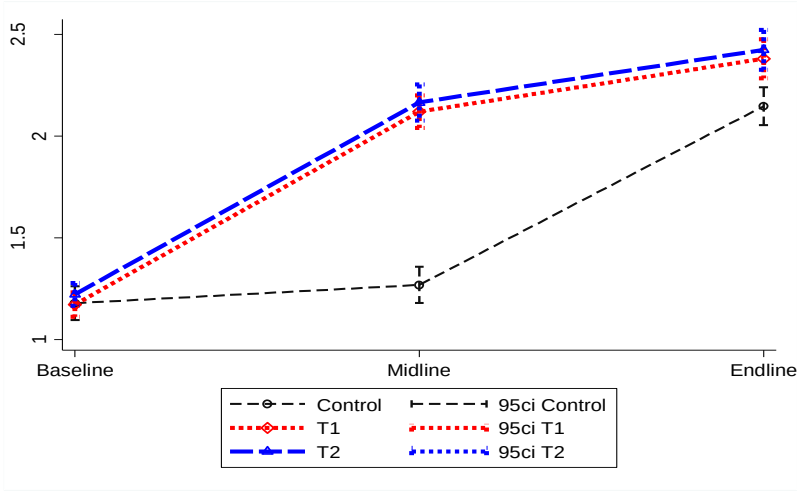


**Figure 18. Number of ploughs owned by households over time**

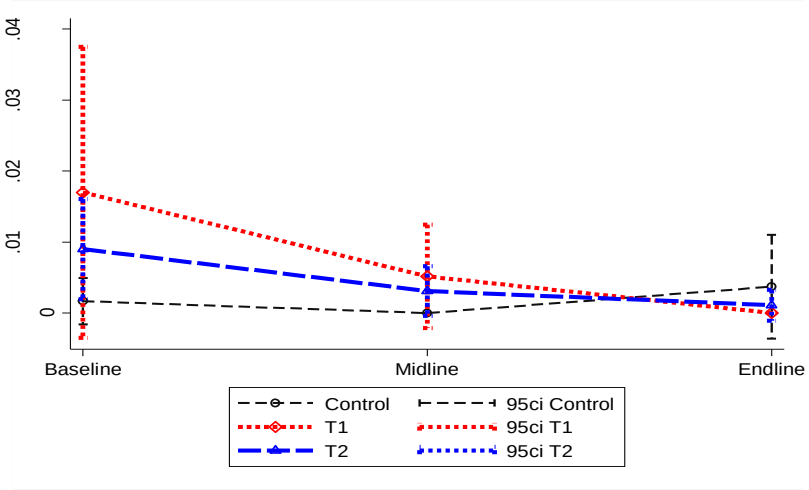



**Figure 19. Number of buckets owned by households over time**

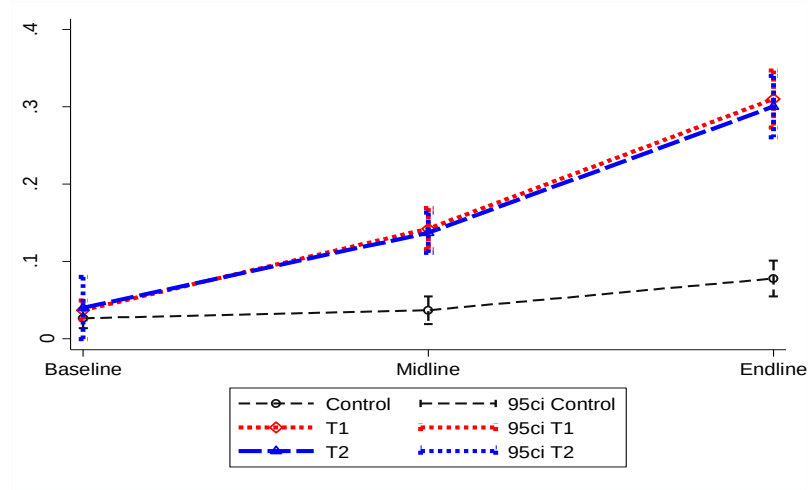
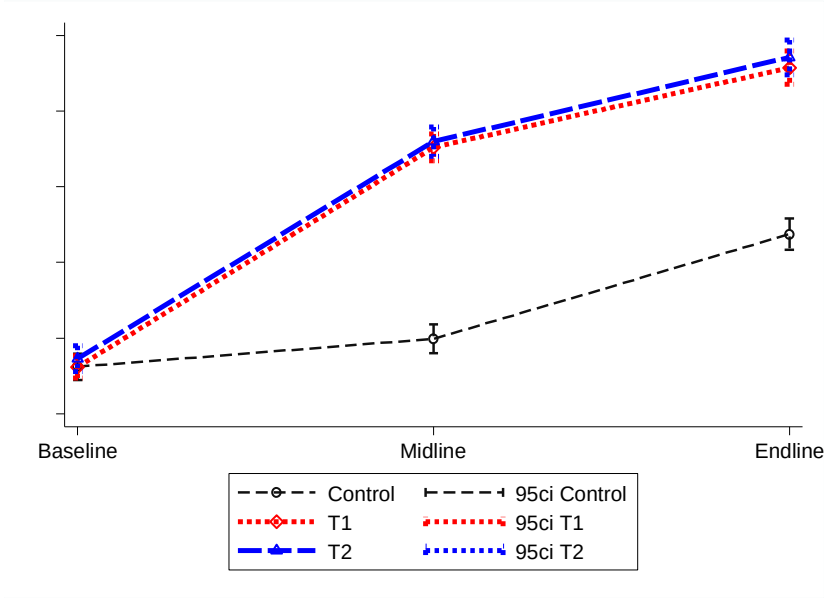



Table 22 shows the relative change in the value of farming assets over time. In Cibitoke the value of farming assets increased from baseline to midline by around 6,000 BiF relative to the control group whereas those in Kirundo increased their relative value of farming assets by around 4,000 BiF. In Cibitoke, however, the value of farming assets declined by nearly 2,000 BiF from midline to endline. This is the result of the increase in hoes owned by the control group in Cibitoke between midline and endline. Although this is a cyclical trend, it is not due to a decline in the value of assets owned by beneficiaries in Cibitoke, but rather an increase in the value of assets owned by the control group in this province. For Kirundo, the value of farming assets remained unchanged between midline and endline.

**Table 22. Relative change in value of farming assets over time**

| | Treatment Effects | | | |
|---|---|---|---|---|
| Cibitoke | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | 5,981*** | 4,234*** | -1,748*** | Cyclical |
| T2 vs C | 5,847*** | 4,051*** | -1,797*** | Cyclical |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| Kirundo | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | 4,141*** | 4,662*** | 521 | Sustained increase |
| T2 vs C | 4,163*** | 5,015*** | 851 | Sustained increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| Total | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | 5,071*** | 4,418*** | -664* | Sustained increase |
| T2 vs C | 5,009*** | 4,480*** | -538 | Sustained increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |

**Figure 20. Value of farming assets over time**




## 5.3. Livestock

In terms of livestock, which include ownership of cows, bulls, calves, ducks, goats, sheep, pigs, chicken and rabbits, results are shown for each province due to regional differences.

In Cibitoke:

- Cows, Bulls, and Sheep: Increase in ownership from baseline to midline and no further increase from midline to endline. Actually, control group increased its ownership of cows from midline to endline relative to both beneficiary groups.
- Calves: Increase in ownership from baseline to midline and a slight decline in ownership from midline to endline, particularly for beneficiaries in T1 (see Figure 21).
- Ducks: No change over time recorded for beneficiaries relative to control group.

- Pigs, Chicken and Goats: Increase in ownership from baseline to midline. For goats, further increase in ownership from midline to endline, making this an upwards increasing trend. For pigs and chickens, there was no further increase in ownership from midline to endline, making this a sustained positive trend.
- Rabbits. From baseline to midline we recorded no increase in the ownership of rabbits for beneficiaries relative to control group. However, between midline and endline there was a rapid increase in the ownership of rabbits, both for control group and beneficiaries, but with a faster increase for beneficiaries relative to control group (see Figure 22).

**Figure 21. Number of calves owned by households in Cibitoke over time**

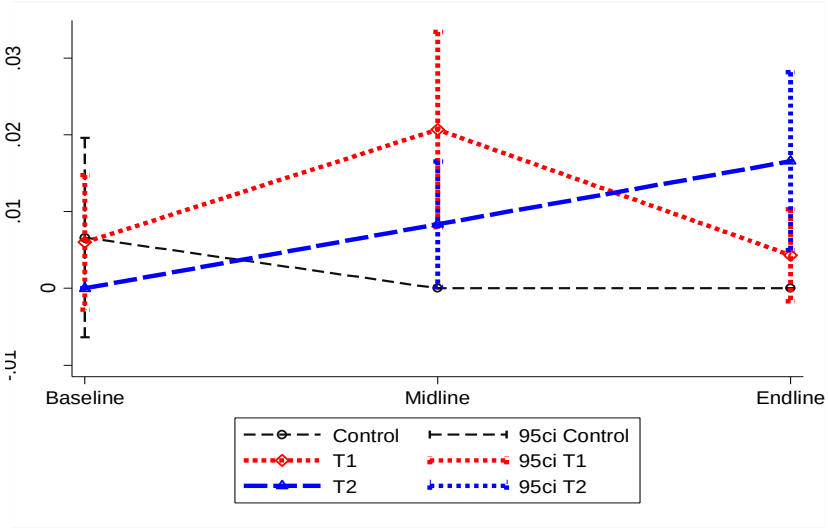
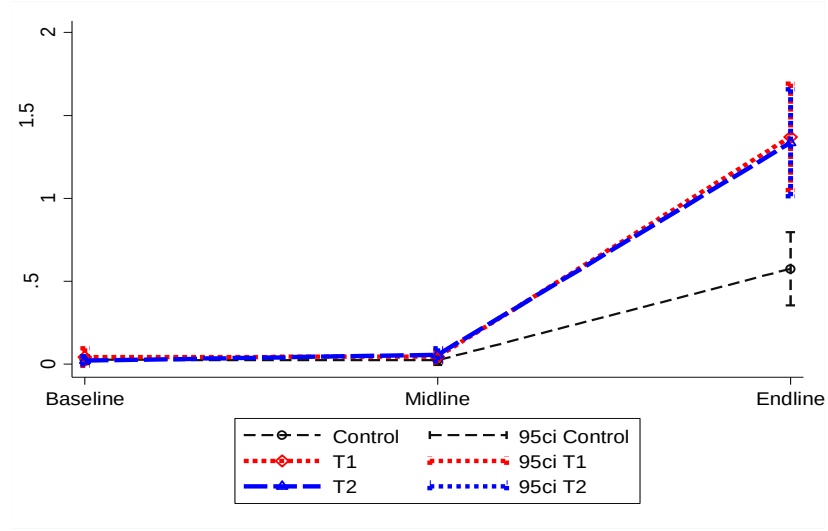



**Figure 22. Number of rabbits owned by households in Cibitoke over time**




In Kirundo:

- Cows, Bulls, Calves, Ducks, Sheep: No change over time recorded for beneficiaries relative to control group.

- Goats and Chicken: Increase in ownership from baseline to midline. Further increase in ownership from midline to endline for beneficiaries in T1 (although this increase is not statistically different from the increase recorded for beneficiaries in T2).
- Rabbits. Increase in ownership from baseline to midline and no further increase from midline to endline. Actually, control group increase its ownership of cows from midline to endline too. Beneficiaries in T2 owned a slightly lower amount of rabbits than beneficiaries in T1 (see Figure 23).

**Figure 23. Number of rabbits owned by households in Kirundo over time**

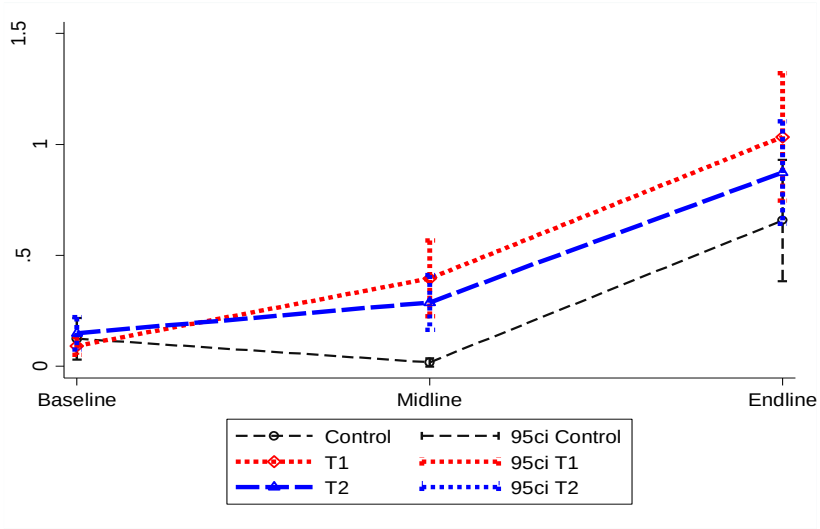
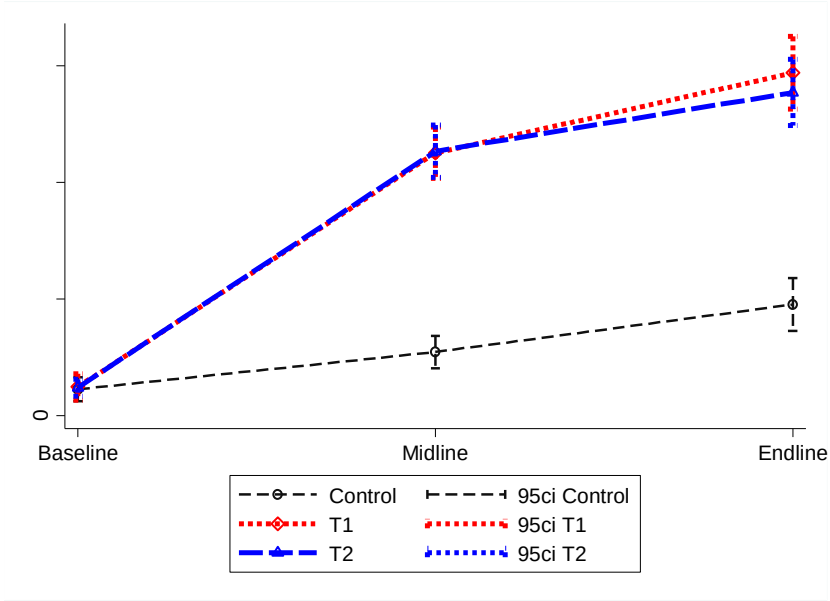



Table 23 shows the relative change in the average (mean) value of livestock owned over time. We find that beneficiaries from both the high and low treatment groups in Cibitoke increased their value by over 100,000 BiF relative to the control group from baseline to midline, and remained at this level from midline to endline. Beneficiaries from the high and low treatment group increased their value of livestock in Kirundo by 62,000 BiF (high treatment) and 66,000 BiF (low treatment) relative to the control group from baseline to midline. For beneficiaries in the high treatment group (T1), the value of livestock further increase by 25,000 BiF from midline to endline relative to the control group. This is an upwards increasing trend. For beneficiaries in the low treatment group there was no further increase in the value of livestock from midline to endline. On average across the regions, the mean value of livestock owned by all households increased by around 85,000 BiF from baseline to midline and by around 94,000 BiF from baseline to endline (i.e. a further increase in the value of 9,000 BiF, although this is not statistically significant).

**Table 23. Relative change in value of livestock over time**

| | Treatment Effects | | | |
|---|---|---|---|---|
| Cibitoke | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | 107,189*** | 108,792*** | 1,603 | Sustained increase |
| T2 vs C | 105,787*** | 118,253*** | 12,466 | Sustained increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| Kirundo | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | 61,958*** | 87,530*** | 25,571* | Upwards increase |
| T2 vs C | 65,898*** | 62,447*** | -3,452 | Sustained increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| Total | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | 84,551*** | 98,473*** | 13,901 | Sustained increase |
| T2 vs C | 85,556*** | 90,465*** | 4,982 | Sustained increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |

**Figure 24. Value of livestock assets over time**



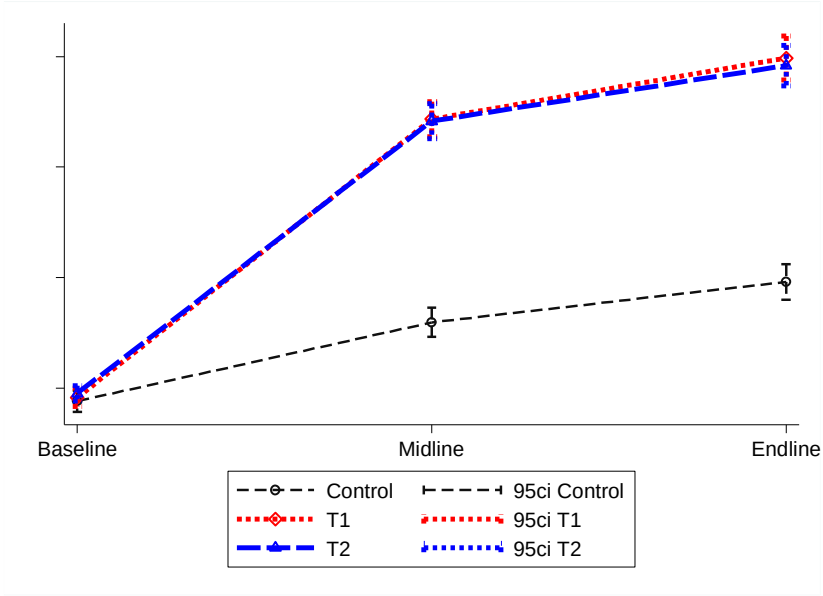

## 5.4. Composite asset index

Using the results from household assets, farming assets and livestock, we compose an index for assets. Using constant prices over time, we estimate the change in the value of assets owned by beneficiaries relative to control group. Table 24 shows the relative change in the value of assets over time. We also find that beneficiaries from the high and low treatment groups in Cibitoke increased their value by around 220,000 BiF relative to the control group from baseline to midline and remained at this level from midline to endline. Beneficiaries from the high and low treatment group increased their value of assets in Kirundo by around 130,000 BiF between baseline and midline and between 150,000 and 180,000 BiF from baseline to endline. Although it seems that beneficiaries from the high treatment group increased their possession of assets by more than the low treatment group, differences between them relative to the control group are not statistically significant.

**Table 24. Relative change in value of composite asset index over time**

| | Treatment Effects | | | |
|---|---|---|---|---|
| Cibitoke | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | 227,485*** | 218,540*** | -8,945 | Sustained increase |
| T2 vs C | 218,066*** | 222,845*** | 4,780 | Sustained increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| Kirundo | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | 133,290*** | 178,530*** | 45,240** | Upward increase |
| T2 vs C | 132,244*** | 153,421*** | 21,178 | Sustained increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| Total | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | 180,834*** | 199,289*** | 18,521 | Sustained increase |
| T2 vs C | 175,365*** | 188,807*** | 13,579 | Sustained increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |

**Figure 25. Value of composite assets over time**




## 5.5. Assets for income-generating activities

In the midline and endline surveys additional information was collected on assets that are used by beneficiaries for income-generating activities. These assets were iron sheets, balance, sacks, wooden mortars to grind seeds, sieve and wooden troughs to produce banana beer or cassava paste. During the endline survey, additional assets were added to the list which included: solar panel, TV/video, sewing machine, cooking stove, electric shaver and large jerry-cans (100 litres).

For the IGA assets for which we have information on two points in time we show the relative change in these assets. It is important, however, to estimate the initial differences in the ownership of these assets between treatment groups and control during midline. Since we do not have a baseline value for these assets, we may find that ownership of these assets did not increase between midline and endline, but beneficiaries could have already shown a higher ownership of these assets during midline. For the assets for which we only have

information in endline, we show the relative difference between beneficiaries and control group at one point in time.

For the assets for which we have information in two points in time (iron sheets, balance, sacks, wooden mortar to grind seeds, sieve and wooden trough to produce banana beer or cassava paste), key results show that:

- During midline, beneficiaries in Kirundo and Cibitoke already showed higher ownership of iron sheets, sacks, wooden mortars to grind seeds, sieves, and wooden trough to produce banana beer or cassava paste relative to the control group.
- For sacks and wooden trough to produce banana beer or cassava paste we estimate a further increase over time for beneficiaries in T1 and T2 in both provinces (see Figure 26 for ownership of sacks over time).
- For wooden mortars to grind seeds and sieves we only found an increase over time for beneficiaries relative to control group in Kirundo. In Cibitoke, the ownership of these assets, which was already high during midline, remained at this level between midline and endline.
- For iron sheets, we actually estimate a decline over time, mostly driven by beneficiaries in T2 in Cibitoke (see Figure 27).
- Finally, for weighing scales or balances, we did not find a relative difference in the ownership of these assets during midline, but a significant increase between midline and endline for both beneficiary groups in Cibitoke and Kirundo (see Figure 28).

**Figure 26. Number of sacks owned by households over time (midline to endline)**

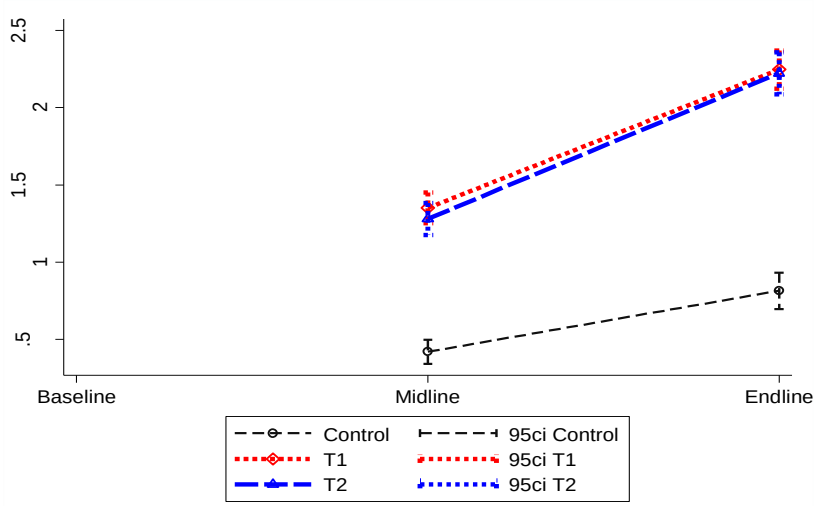


**Figure 27. Number of iron sheets owned by households over time (midline to endline)**

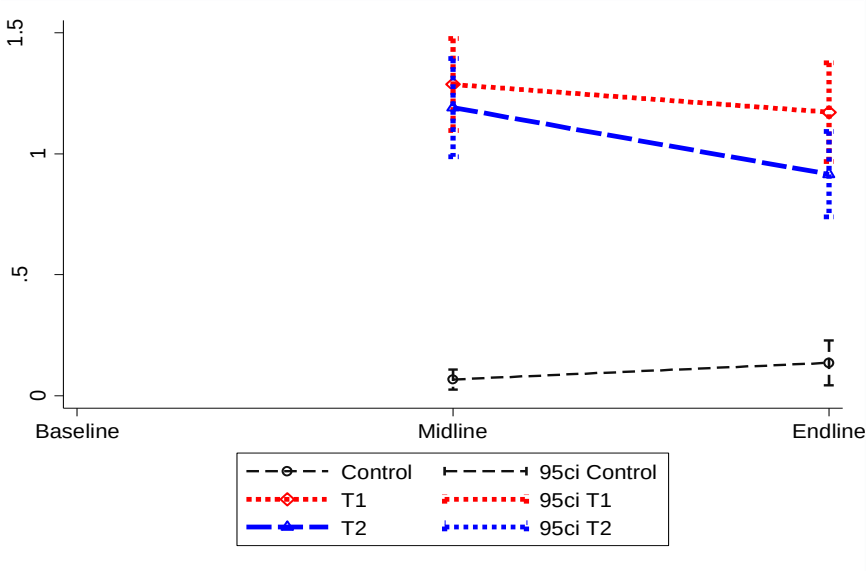



**Figure 28. Number of weighing scales owned by households over time (midline to endline)**

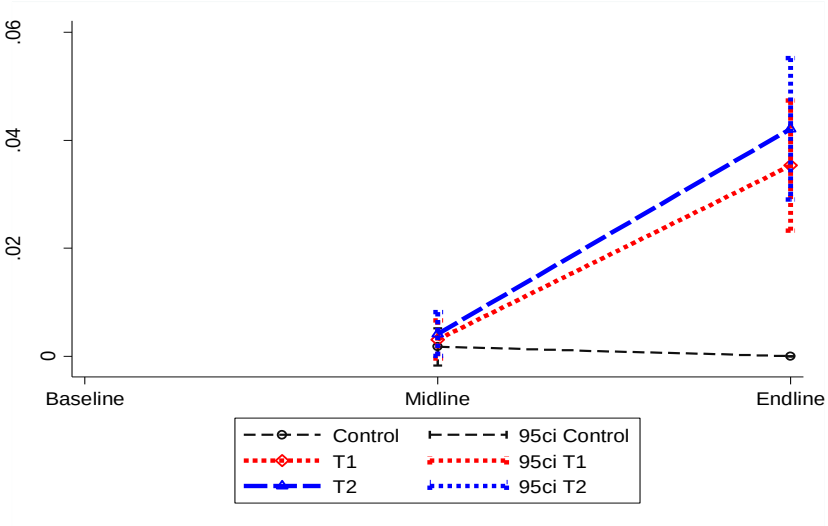



Table 25 shows the value of assets for IGAs at midline and the relative change between midline and endline, using constant prices over time. At midline, we find that beneficiaries from the high and low treatment groups in Cibitoke had a higher value of these assets compared to control group households. The higher value of these assets was around 28,000 BiF. In Kirundo, beneficiaries from the high and low treatment group showed a smaller increase in their value of assets for IGAs, at around 11,000 BiF. The value of assets only increased over time for beneficiaries in the high treatment group in Kirundo relative to control group. The value of assets for these beneficiaries increased by a further 5,700 BiF relative to the control group from midline to endline.

**Table 25. Initial difference at midline and relative change in value of IGA assets over time**

| | Treatment Effects | | |
|---|---|---|---|
| Cibitoke | Initial difference at midline | Additional change midline-endline | Trend |
| T1 vs C | 29,165*** | 461 | No change |
| T2 vs C | 27,102*** | -3,113 | No change |
| Sig. Test T1 vs T2 | ns | ns | |
| Kirundo | Initial difference at midline | Additional change midline-endline | Trend |
| T1 vs C | 11,898*** | 5,739** | Upwards increase |
| T2 vs C | 10,774*** | 3,719 | No change |
| Sig. Test T1 vs T2 | ns | ns | |
| Total | Initial difference at midline | Additional change midline-endline | Trend |
| T1 vs C | 20,643*** | 3,228 | No change |
| T2 vs C | 19,017*** | 452 | No change |
| Sig. Test T1 vs T2 | ns | ns | |

Table 26 reports differences in ownership of assets only included in the endline survey, between beneficiaries and control group. These assets include solar panel, TV/video, sewing machine, cooking stove, electric shaver and large jerry-cans (for 100 litres). Note that these findings are not based on d-i-d calculations but on regression models, only including endline data and estimating whether or not being a programme participant is associated with greater ownership of assets compared to being a control group member. Results show that *Terintambwe* participants are more likely than control group members to own solar panels, large jerry-cans and (in Cibitoke) electric shavers. *Terintambwe* participants are not more likely to own a TV or cooking stove than are control group households.

**Table 26. Ownership of assets for income-generating activities in endline only**

| Indicator<br>Number of: | Cibitoke | Kirundo | Total |
|---|---|---|---|
| **Solar Panels** | | | |
| T1 | 0.104*** | 0.063*** | 0.084*** |
| T2 | 0.098*** | 0.087*** | 0.093*** |
| *significance test T1-T2* | ns | ns | ns |
| **Tv/Videos** | | | |
| T1 | 0.000 | 0.000 | 0.000 |
| T2 | 0.000 | 0.000 | 0.000 |
| *significance test T1-T2* | ns | ns | ns |
| **Sewing machines** | | | |
| T1 | 0.009** | 0.002 | 0.006** |
| T2 | 0.004 | 0.002 | 0.003* |
| *significance test T1-T2* | ns | ns | ns |
| **Cooking stoves** | | | |
| T1 | 0.000 | 0.000 | 0.000 |
| T2 | 0.000 | 0.000 | 0.000 |
| *significance test T1-T2* | ns | ns | ns |
| **Electric shavers** | | | |
| T1 | 0.041*** | -0.019 | 0.012 |
| T2 | 0.038*** | -0.030 | 0.005 |
| *significance test T1-T2* | ns | ns | ns |
| **Jerry-cans 100L** | | | |
| T1 | 0.011** | 0.038*** | 0.024*** |
| T2 | 0.026** | 0.024*** | 0.025*** |
| *significance test T1-T2* | ns | ns | ns |

# 6. LAND

*"I own land because of Terintambwe"* [C-Bu-T2M]

In this section we present results associated with the key outcome indicators for land use and ownership. To increase their production, households can increase the amount of land that they own or they can rent additional land to exploit. Here we explore whether *Terintambwe* impacted land ownership and/or use.

We investigate whether there was an increase in:

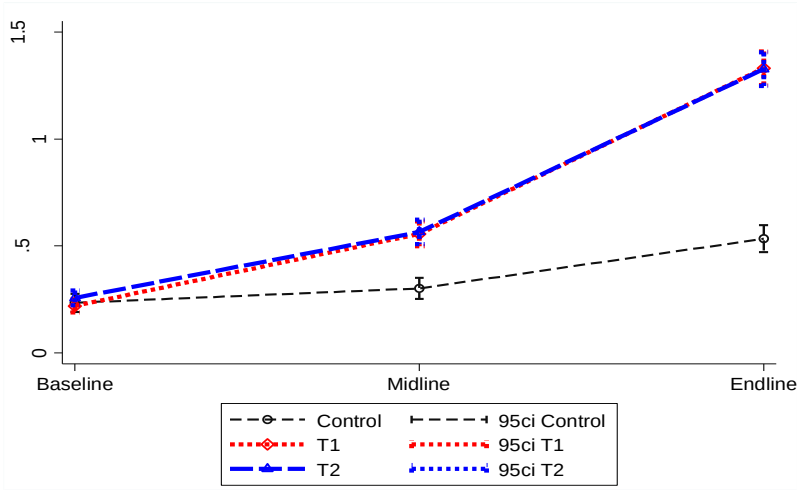
i. the number of plots households own (either being used or rented out), other than that on which their house is located

ii. the number of plots households are using (e.g. renting in), but do not own.[12]

## 6.1. Plots of land owned

When looking at the number of plots households own that are either used or rented out, we observe a large increase in the number of plots owned due to the programme. This increase is more pronounced from 2013 to 2015 than from 2012 to 2013. Compared to the control group, the average number of plots owned by treatment households is three times larger at endline than at midline. Figure 29 represents the changes over time in average numbers of plots owned by each group, with 95% confidence intervals.

**Figure 29. Average number of plots owned**




Across both provinces, the average number of plots owned by treatment households increased from baseline to endline by 0.81 for T1 households and by 0.77 for T2 households. The difference between the two treatments is not significant, but the difference compared to control group households is statistically significant, indicating an attributable effect to participation in the *Terintambwe* programme.

[12] Area data on the size of plots was not collected during the endline survey due to reliability concerns, hence are not reported here.

Table 27 also shows that the increase in number of owned plots is not homogeneous across provinces. Households in Cibitoke, who started with more plots on average, experienced bigger increases. Treatment households in Cibitoke had an average of 0.28 plots at baseline and 1.58 at endline, while the corresponding figures for Kirundo are 0.20 and 1.08.

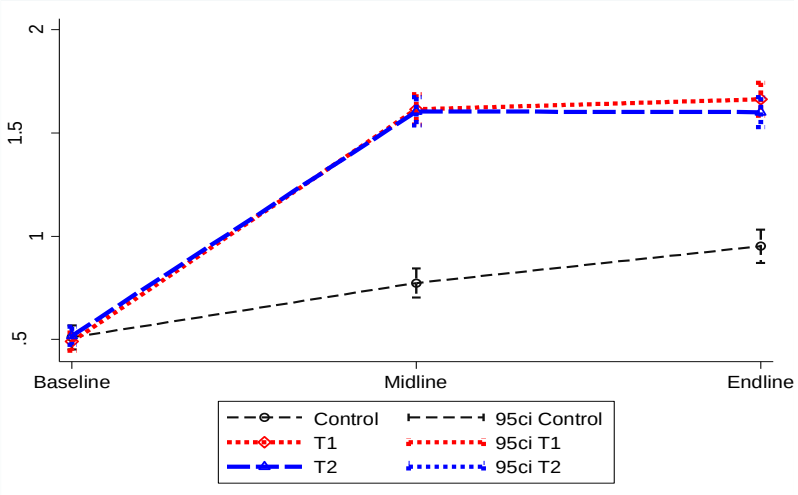
**Table 27. Treatment effect on the number of plots owned**

| **Cibitoke** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
|---|---|---|---|---|
| T1 vs C | 0.334*** | 1.010*** | 0.676*** | Upward increase |
| T2 vs C | 0.278*** | 0.966*** | 0.688*** | Upward increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| **Kirundo** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | 0.206*** | 0.607*** | 0.401*** | Upward increase |
| T2 vs C | 0.204*** | 0.575*** | 0.371*** | Upward increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| **Total** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | 0.271*** | 0.813*** | 0.542*** | Upward increase |
| T2 vs C | 0.242*** | 0.773*** | 0.530*** | Upward increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |

## 6.2. Use of land not owned by the household

For this indicator, respondents were asked how many plots of land they used but did not own, other than the plot on which the house was located. The *Terintambwe* programme appears to have considerably increased usage of rented land among its beneficiaries. On average, at baseline, treatment households rented and used between 0.49 (T1) and 0.52 (T2) plots of land, while control households rented and used an average of 0.55 plots. By April 2015, at the endline, the average number of plots rented and used had increased to 1.66 for T1 households and 1.60 for T2 households. This compares to 0.95 plots for the control group. Figure 30 shows the change in number of plots rented across the 3 time periods and 3 groups, with 95% confidence intervals.

**Figure 30. Average number of plots used and not owned**



Difference-in-differences estimates show that on average, T1 recipients benefited from a 0.73 increase in the number of plots they used (but did not own), from baseline to endline. T2 households experienced a 0.64 increase. While households that received training in addition to the cash transfer (T1) experienced a larger increase, the difference between treatments is not statistically significant. This holds true for both provinces. The large increase in number of plots rented and used occurred from baseline to midline (+0.86 for T1, +0.82 for T2). This early increase was moderated by a slight decrease from midline to endline across provinces (-0.13 for T1, -0.18 for T2). While the overall impact of *Terintambwe* is positive across provinces and treatment groups, the trend was not sustained and control group households also increased their number of plots used but not owned. Table 28 displays difference-in-difference results.

**Table 28. Treatment effect on the number of plots used but not owned**

| **Cibitoke** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
|---|---|---|---|---|
| T1 vs C | 0.835*** | 0.681*** | -0.154 | Sustained increase |
| T2 vs C | 0.767*** | 0.570*** | -0.198* | Cyclical |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| **Kirundo** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | 0.892*** | 0.789*** | -0.103 | Sustained increase |
| T2 vs C | 0.883*** | 0.720*** | -0.163* | Cyclical |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| **Total** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | 0.863*** | 0.732*** | -0.130* | Cyclical |
| T2 vs C | 0.824*** | 0.642*** | -0.182** | Cyclical |
| Sig. Test T1 vs T2 | ns | ns | ns | |

# 7. FARMING

This section outlines changes in the farming activities of households from baseline to endline; the two time points at which data on farming was collected.

The section investigates:

i) The increase in the number of crops farmed per household that can be attributed to the *Terintambwe* programme and;

ii) Whether households who received the programme sold a bigger share of total production on the market compared to control households.

It is important to note firstly that the results in this section should be interpreted with care as enumerators used different methodologies in the first and last survey rounds to estimate the quantity of produce harvested, consumed and sold. At baseline, it was left to the enumerators' discretion to estimate the weights (in kg) of crops, however for the endline survey, enumerators were equipped with a conversion table allowing them to translate standard measures of production ('bag' or 'basket', for instance) to kilograms for each crop. The results of the second subsection (ii) are therefore caveated by this limitation.

## 7.1. Number of crops grown

At baseline and endline respondents were asked, for each of 22 suggested crops,[13] how much they had harvested, consumed and sold. It was found firstly, that over the course of the programme, there was a reduction in the number of households that reported no crop production. At baseline, 40% of all households reported no crop production. Two years after the start of the programme, only 4% of treated households reported no crop production. This share decreased also in the control group, although to a much lesser extent: 20% of control households were not growing any crops at endline.

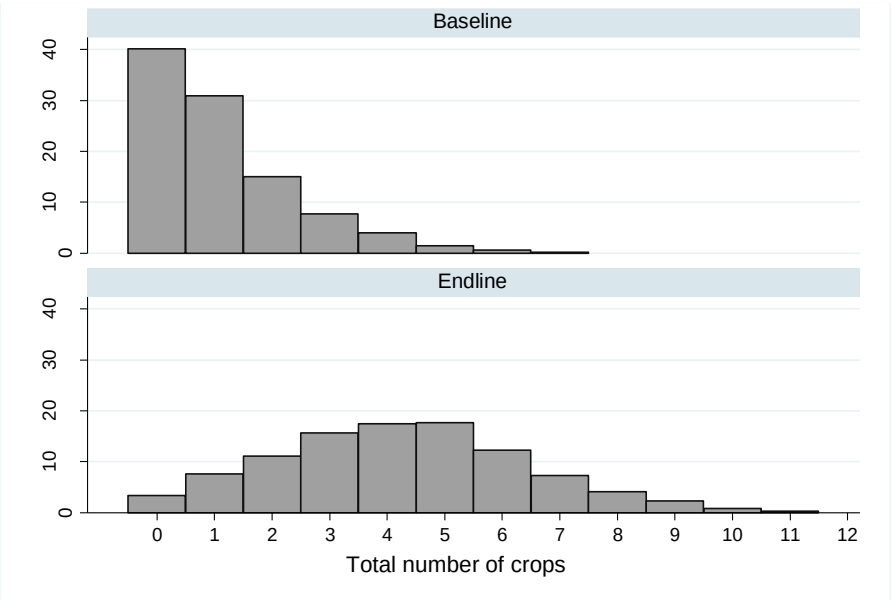
On average, households at baseline were growing approximately 1 crop in Cibitoke and 1.3 in Kirundo. In both provinces, households who benefited from the programme, either T1 or T2, experienced a three- to five-fold increase in the number of crops they grew. This diversification in agricultural production was unmatched in control groups in both provinces. Table 29 below reports the average number of crops per household. The histogram in
Figure 31 shows visually the increase amongst treated households.

[13] The crops considered are: beans, soy beans, peanuts, maize, sorghum, rice, sweet potatoes, Irish potatoes, yam, amaranth, tomatoes, onions, cabbage, avocado, pineapple, orange, bananas, rice, sunflower, cassava, coffee and tea.

**Table 29. Average number of crops grown (maximum: 22)**

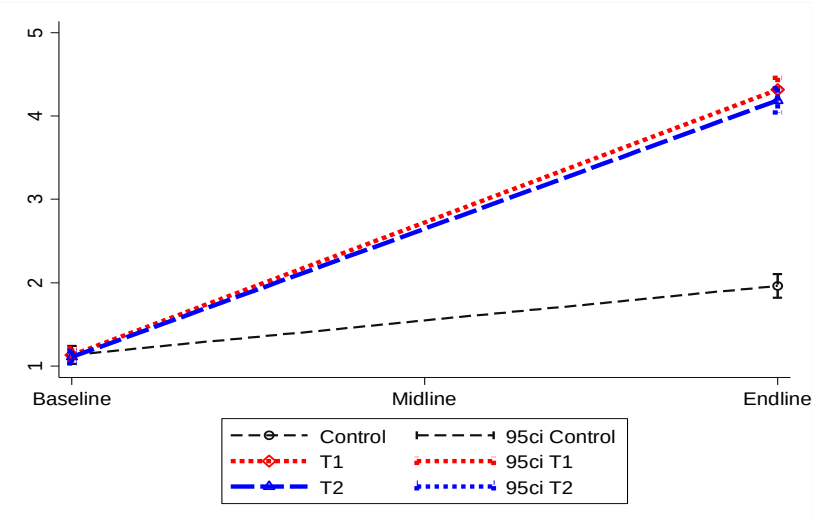
| | Cibitoke | | Kirundo | | All | |
|---|---|---|---|---|---|---|
| | Baseline | Endline | Baseline | Endline | Baseline | Endline |
| **T1** | 0.90 | 4.52 | 1.36 | 4.10 | 1.13 | 4.32 |
| **T2** | 0.91 | 4.47 | 1.30 | 3.90 | 1.11 | 4.19 |
| **Control** | 1.00 | 1.89 | 1.26 | 2.03 | 1.13 | 1.96 |

**Figure 31. Total number of crops grown**




Difference-in-differences estimation suggests that the increase in crops harvested can be attributed to Concern Worldwide's *Terimtambwe* programme. Figure 32 below gives a sense of the magnitude of the change for both treatment groups and control households. Averages at baseline and endline for all three groups are surrounded by their 95 percent confidence intervals.

**Figure 32. Average number of crops grown**




The programme resulted in significant increases in the number of crop types households grew across both treatment groups and both provinces. The impact was more pronounced in

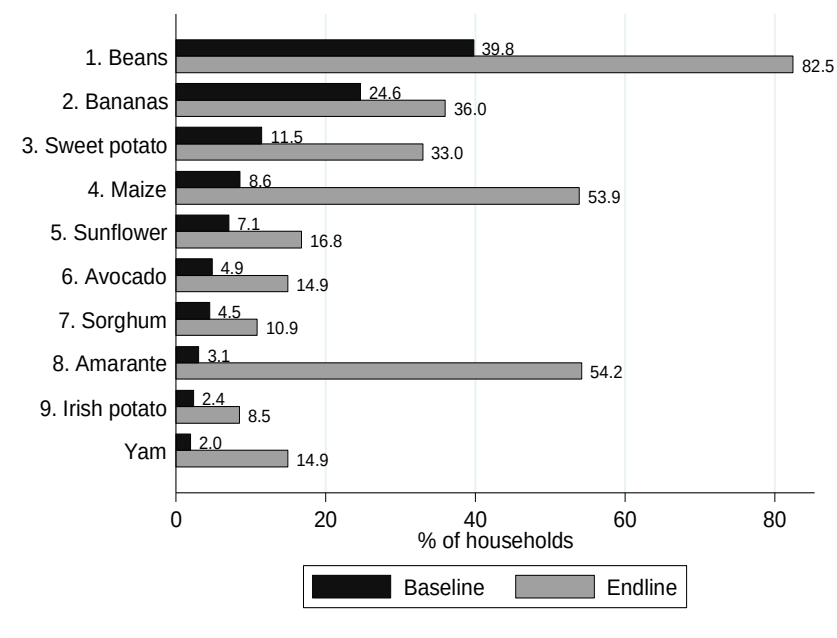
Cibitoke, where T1 and T2 households grew 2.7 more crops on average due to the programme, than in Kirundo, where the increase was limited to 1.7-2 additional crops. Provincial specificities also appear in the differences of impacts of T1 and T2. While the difference between the impacts of T1 and T2 treatments is insignificantly small in Cibitoke, it appears that the T1 version of the programme had a greater impact in Kirundo. This difference is significant at the 1 percent level. In other words, the additional training provided to some treated households in Kirundo made a positive difference on the number of crops harvested. This characteristic, specific to Kirundo, is however not reflected in the aggregate estimates with the two regions. Table 30 below reports the estimates of impact. Please refer to section 7.3 for estimates of impact based on the seven major food groups (bananas, pulse, tubers, cereals, vegetables, fruits, cash crops) instead of the 22 crops.

**Table 30. Treatment effect on the average number of crops grown**

| **Cibitoke** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
|---|---|---|---|---|
| T1 vs C | - | 2.780*** | - | - |
| T2 vs C | - | 2.727*** | - | - |
| Sig. Test T1 vs T2 | - | Ns | - | - |
| **Kirundo** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | - | 1.987*** | - | - |
| T2 vs C | - | 1.726*** | - | - |
| Sig. Test T1 vs T2 | - | *** | - | - |
| **Total** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | - | 2.408*** | - | - |
| T2 vs C | - | 2.254*** | - | - |
| Sig. Test T1 vs T2 | - | *** | - | - |

The increases in treatment household crop diversification were not equally distributed across crops. That is, some crops were more likely to be chosen by households who diversified their agricultural productions. In treated groups (T1 and T2), the share of households who harvested amaranth, maize and beans increased by 51, 47 and 43 percentage points respectively. Some crops, in the five most harvested at baseline, experienced more limited increases: sweet potato (+22 percentage points), bananas (+11) and sunflower seeds (+10).

**Figure 33. Top 10 crops at baseline, and share of households harvesting them at endline**




## 7.2. Share of crops sold on the market

The results are more ambiguous for the average share of total crop production sold on the market. Here, we do not detect any impact of the *Terintambwe* programme for high treatment (T1) households and only a feeble increase (+4.5 percentage points) is detected across provinces for low treatment households (T2). We present here an overview of the diversity of share sold for crops, by province, treatment status and time periods, before analysing the causal impact of *Terintambwe* on share of crop sold.

The share of total agricultural produce sold varies greatly across provinces. In 2013, 12.5% of all harvested crops were sold in Kirundo. This share was almost three times as big in Cibitoke, at 34% (Table 31). As expected, a very high proportion of cash crops (tea and coffee) harvested were sold on the market in both provinces. Bananas and fruits were also characterised by high proportions sold to market, although the share sold was almost twice as big in Cibitoke than in Kirundo.

**Table 31. Mean share of farming produce sold at baseline, by province**

| | Cibitoke | Kirundo | Total |
|---|---|---|---|
| ***Mean share of production sold*** | **%** | **%** | **%** |
| **Bananas** | 55.3 | 25.9 | 48.4 |
| **Pulses** | 7.2 | 8.9 | 8.4 |
| **Tubers** | 6.0 | 2.9 | 4.7 |
| **Cereals** | 13.0 | 18.6 | 17.5 |
| **Vegetables** | 14.5 | 0.0 | 9.8 |
| **Fruits** | 46.9 | 26.3 | 32.3 |
| **Cash Crops** | 100 | 92.9 | 96.8 |
| ***Mean share of production sold across all crops*** | 34.1 | 12.5 | 22.1 |

Table 32 and Table 33 below shows selling rates by provinces for treated households and for their counterparts in the control group at endline.

**Table 32. Mean share of farming produce sold at endline, by province**

| | T1 & T2 | | | | Control | | |
|---|---|---|---|---|---|---|---|
| | Cibitoke | Kirundo | Total | | Cibitoke | Kirundo | Total |
| ***Mean share of production sold*** | **%** | **%** | **%** | ***Mean share of production sold*** | **%** | **%** | **%** |
| **Bananas** | 74.3 | 36.1 | 61.6 | **Bananas** | 74.6 | 22.8 | 62.9 |
| **Pulses** | 10.3 | 10.1 | 10.2 | **Pulses** | 4.2 | 7.6 | 6.2 |
| **Tubers** | 13.6 | 10.7 | 12.3 | **Tubers** | 6.9 | 7.1 | 7.0 |
| **Cereals** | 6.3 | 18.2 | 13.9 | **Cereals** | 5.4 | 14.4 | 10.8 |
| **Vegetables** | 8.1 | 7.0 | 7.7 | **Vegetables** | 9.8 | 17.5 | 12.8 |
| **Fruits** | 48.4 | 47.5 | 48.0 | **Fruits** | 51.8 | 46.9 | 49.6 |
| **Cash Crops** | 95.6 | 100 | 96.6 | **Cash Crops** | 100 | | 100 |
| ***Mean share of production sold across all crops*** | 19.6 | 15.4 | 17.5 | ***Mean share of production sold across all crops*** | 18.19 | 10.3 | 14.2 |

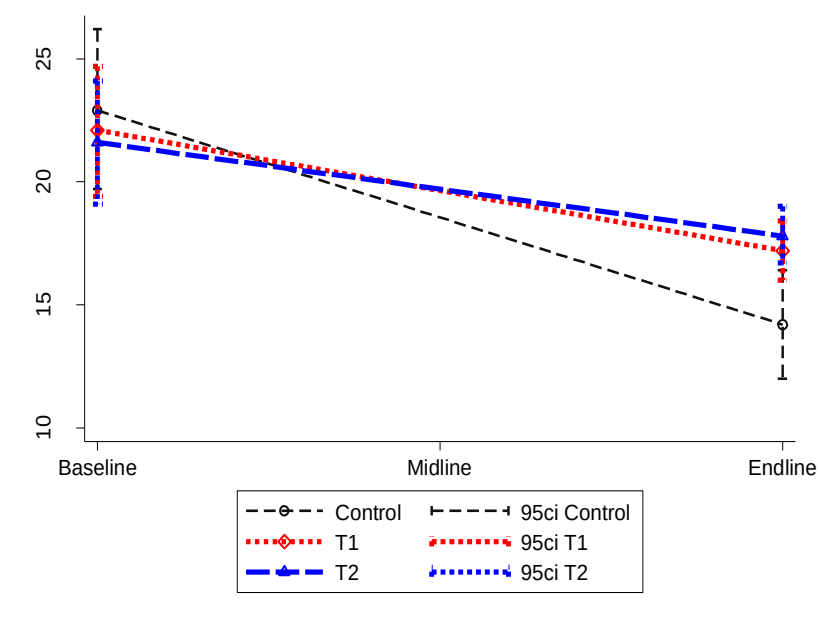
The results are somewhat surprising. More than 74% of bananas harvested in Cibitoke are now sold, by both control and treatment groups. Shares of fruits sold in both groups are also surprisingly high, especially for the Kirundo province. They now hover around 50% for both treatment and control households. In total, the average share of crop production sold in Cibitoke is very similar between treatment and control households (19.6% and 18.2% respectively). There is however a clear difference between the share of crops sold in Kirundo by treatment households compared to control households; the share sold is 5 percentage points higher for households who received any treatment type (15.4% against 10.3%).

**Table 33. Summary statistics on all crops, average share sold (unweighted)**

| | Cibitoke | | Kirundo | | All | |
|---|---|---|---|---|---|---|
| | **Baseline** | **Endline** | **Baseline** | **Endline** | **Baseline** | **Endline** |
| **T1** | 34.7% | 19.3% | 12.2% | 15.0% | 22.1% | 17.2% |
| **T2** | 32.4% | 20.0% | 13.3% | 15.7% | 21.6% | 17.8% |
| **Control** | 35.9% | 18.2% | 11.5% | 10.3% | 22.9% | 14.2% |

Summary statistics show that the average share of crop production sold across all crops decreased across all regions and treatment groups. Figure 34 below represent these decreases graphically.

**Figure 34. Graphical representation of treatment effect (unweighted average of produce sold, across crops)**




It seems that the *Terintambwe* programme has not increased the share of production sold in either of the two provinces. Increases are ranging from 2.3 to 5.3 percentage points but are statistically insignificant. Furthermore, there is no detectable difference between the impacts of treatments 1 and 2, in both Kirundo and Cibitoke. When observations from Cibitoke and Kirundo are pooled together, the impact of T1 remains insignificant, but T2 appears to have caused a 4.5 percentage point increase in the share of total produce sold.

**Table 34. Average treatment effect on the share of crops sold**

| Cibitoke | Baseline–Midline | Baseline–Endline | Midline–Endline | Trend |
|---|---|---|---|---|
| T1 vs C | - | 0.023 | - | - |
| T2 vs C | - | 0.053 | - | - |
| Sig. Test T1 vs T2 | - | ns | - | - |

| Kirundo | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
|---|---|---|---|---|
| T1 vs C | - | 0.039 | - | - |
| T2 vs C | - | 0.035 | - | - |
| Sig. Test T1 vs T2 | - | ns | - | - |

| Total | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
|---|---|---|---|---|
| T1 vs C | - | 0.033 | - | - |
| T2 vs C | - | 0.045* | - | - |
| Sig. Test T1 vs T2 | - | ns | - | - |

It does not seem that there are crop type-specific dynamics at play either. For almost all of the seven food groups considered earlier, no change is detected. One exception is tubers (sweet potatoes, Irish potatoes and yam) for which the shares sold increased by 7.1 to 7.9 percentage points for T2 and T1 households respectively.

**Table 35. Treatment effect by food group**

| Total | Bananas | Pulse | Tubers | Cereals | Vegetables | Fruits | Cash crops |
|---|---|---|---|---|---|---|---|
| T1 vs C | 0.063 | 0.028 | 0.079*** | 0.038 | 0.012 | -0.045 | -0.02 |
| T2 vs C | 0.055 | 0.021 | 0.071** | 0.057 | 0.073 | -0.009 | 0.03 |
| Sig. Test T1 vs T2 | ns | ns | ns | ns | ns | ns | ns |

Ultimately, the evidence in favour of an increase in the proportion of crops sold in the market that would have been caused by the programme is poor. We cannot attribute a causal impact on this metric to the *Terintambwe* programme.

In conclusion, while there is strong statistical support to attribute the diversification of crops harvested to the programme, it is impossible to conclude on its impact on shares sold. Our inability to detect an impact on the latter metric may be due to the inherent limitations of the data. As data collection was not conducted in a similar fashion at baseline and endline, this may undermine our ability to do rigorous inference for the shares of produce sold.

## 7.3. D-i-d estimates on 7 food groups

The 22 crops that were asked about in the baseline and endline surveys can be aggregated into 7 major food groups: bananas, pulse, tubers, cereals, vegetables, fruits, cash crops. Here we analyse change in diversification by looking at the number of food group types grown by households.

**Table 36. Summary statistics on total number of food group types grown, by survey round and treatment group (out of 7)**

| | Cibitoke | | Kirundo | | All | |
|---|---|---|---|---|---|---|
| | Baseline | Endline | Baseline | Endline | Baseline | Endline |
| **T1** | 0.38 | 0.57 | 0.14 | 0.28 | 0.26 | 0.43 |
| **T2** | 0.39 | 0.57 | 0.13 | 0.26 | 0.26 | 0.41 |
| **Control** | 0.42 | 0.28 | 0.11 | 0.09 | 0.27 | 0.19 |

**Figure 35. Total number of food groups grown (out of 7)**

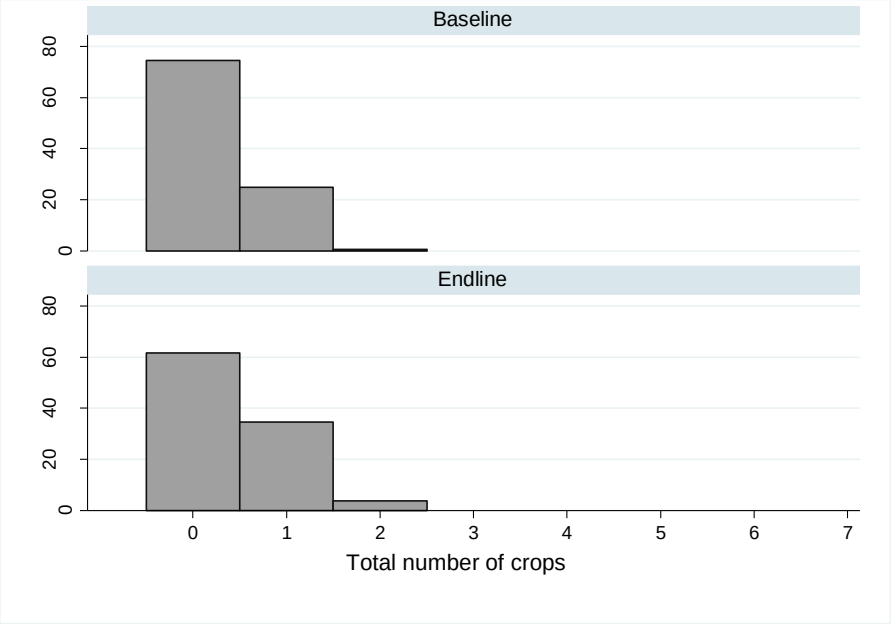


**Figure 36. Graphical representation of the change in the average number of food groups grown (out of 7)**

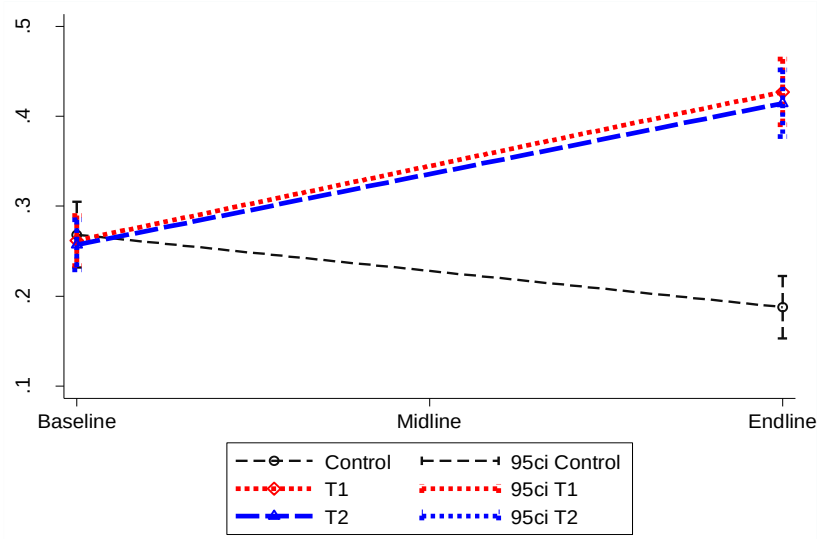



**Table 37. Treatment effect on the average number of food groups grown (out of 7)**

| Cibitoke | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
|---|---|---|---|---|
| T1 vs C | - | 0.346*** | - | - |
| T2 vs C | - | 0.351*** | - | - |
| Sig. Test T1 vs T2 | - | ns | - | - |

| Kirundo | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
|---|---|---|---|---|
| T1 vs C | - | 0.170*** | - | - |
| T2 vs C | - | 0.170*** | - | - |
| Sig. Test T1 vs T2 | - | ns | - | - |

| Total | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
|---|---|---|---|---|
| T1 vs C | - | 0.262*** | - | - |
| T2 vs C | - | 0.264*** | - | - |
| Sig. Test T1 vs T2 | - | ns | - | - |

# 8. FINANCIAL MANAGEMENT

One of the components of the *Terintambwe* programme was the creation of Savings and Internal Lending Communities (SILCs) as part of the second phase of the programme. The change in saving and borrowing behaviours, already noted at midline, is considerable and persistent. Overall, beneficiaries of the programme saved more, more frequently, borrowed more per loan, used the SILCs massively and kept records of their savings and expenditures. These positive effects are found here to be lasting until the endline. We present below evidence of the impact of *Terintambwe* in both high (T1) and low (T2) treatment households.

## 8.1. More borrowing and savings

Over the course of the programme, the share of households in which the head or the spouse took a loan in the last 12 months increased greatly in treatment groups. Taking into account the change in the control households, the average increase for treated households was 62 percentage points in T1 and 66 percentage points in T2. In both provinces, the increase was more pronounced from baseline to midline and went on, albeit at a slower rate, from midline to endline. Furthermore, there is no notable difference between treatment types T1 and T2 in either province. There are however some regional differences: the magnitudes of the impact of the *Terintambwe* in Kirundo and Cibitoke were similar from baseline to midline, but the impact levelled off in Kirundo for T1 and was very mild for T2, while it was still high during this period in Cibitoke. Figure 37 and Table 38 below summarise these results.

**Figure 37. Household heads or spouse took a loan in the last 12 months**

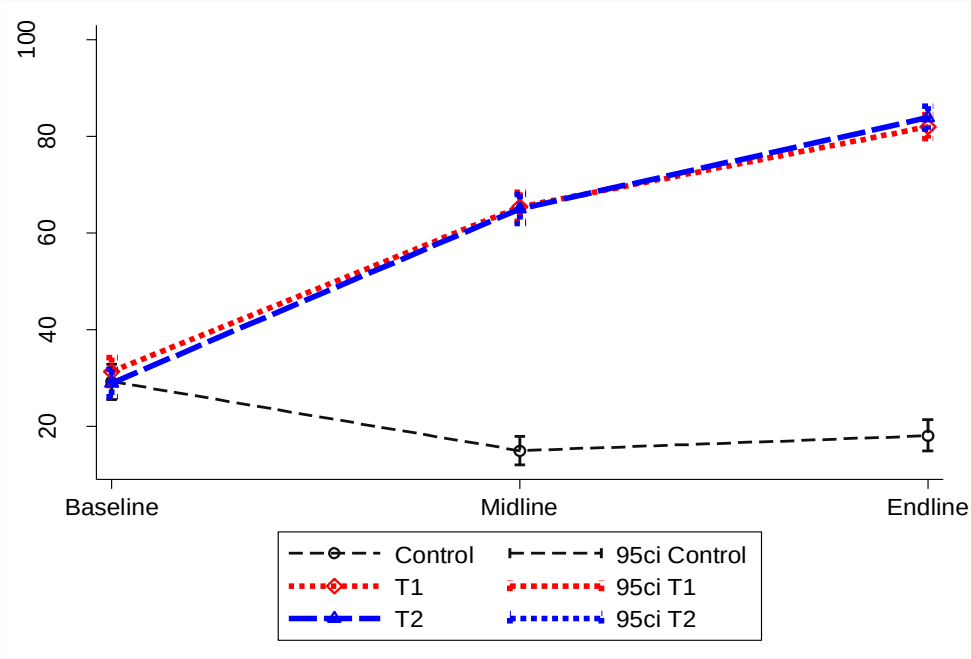


**Table 38. Treatment effect on household heads or spouse taking a loan in the last 12 months**

| Cibitoke | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
|---|---|---|---|---|
| T1 vs C | 0.484*** | 0.701*** | 0.217*** | Upward increase |
| T2 vs C | 0.514*** | 0.752*** | 0.237*** | Upward increase |
| Sig. Test T1 vs T2 | ns | ns | Ns | |

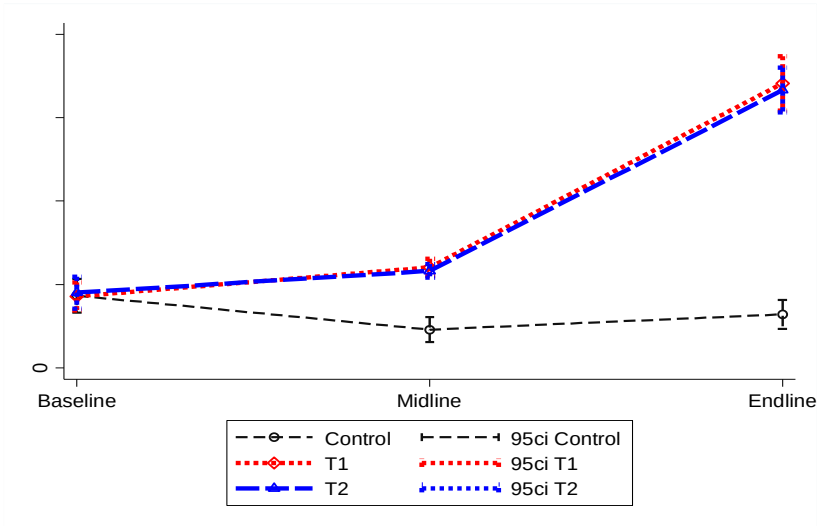
| Kirundo | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
|---|---|---|---|---|
| T1 vs C | 0.481*** | 0.532*** | 0.052 | Sustained increase |
| T2 vs C | 0.490*** | 0.571*** | 0.081* | Upward increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |

| Total | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
|---|---|---|---|---|
| T1 vs C | 0.483*** | 0.618*** | 0.135*** | Upward increase |
| T2 vs C | 0.503*** | 0.662*** | 0.158*** | Upward increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |

*** p<0.01, ** p<0.05, * p<0.1, ns (not significant)

Not only were treated households more likely to borrow, the amounts that they typically borrowed also increased. At baseline, the average amount last borrowed by those treatment and control households who took a loan was 4,380 Burundian Francs. At endline the average amount last borrowed was 16,870 BiF in treatment groups against 3,200 BiF in control; less than at baseline.

**Figure 38. Amount of loan last taken, in Burundian Francs**



The increase is sustained across the three time points for both treatments and both provinces. There is no differentiable impact between T1 and T2 treatment groups. The difference-in-differences estimators however indicate that there are large differences between provinces. Treated households in Cibitoke benefited from an average increase in amount borrowed that was approximately double that in Kirundo, for both time periods. The average loan granted to treated households (T1+T2) in Cibitoke was 21,430 BiF at endline compared to 12,190 BiF in Kirundo. Table 39 below reports the difference-in-differences estimators for all time periods. Ultimately, our results suggest that the programme had an impressive impact on households' capacity to borrow.

**Table 39. Treatment effect on the amount of the last taken loan**

| **Cibitoke** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
|---|---|---|---|---|
| T1 vs C | 5,003*** | 18,398*** | 13,394*** | Sustained increase |
| T2 vs C | 4,521*** | 17,942*** | 13,421*** | Sustained increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |

| **Kirundo** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
|---|---|---|---|---|
| T1 vs C | 2,510** | 9,237*** | 6,727*** | Sustained increase |
| T2 vs C | 2,115* | 8,588*** | 6,473*** | Sustained increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |

| **Total** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
|---|---|---|---|---|
| T1 vs C | 3,779*** | 13,928*** | 10,122*** | Sustained increase |
| T2 vs C | 3,338*** | 13,315*** | 9,948*** | Sustained increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |

*** p<0.01, ** p<0.05, * p<0.1, ns (not significant)

The *Terintambwe* programme had a large and positive impact on savings. For all treated households in Cibitoke and Kirundo (i.e. including those with zero savings), the total amount of household savings increased greatly, from zero in both provinces to 22,000 BiF in Kirundo and to as much as 37,000 BiF in Cibitoke between baseline and endline. There is virtually no difference between T1 and T2. Like the amount of loans last taken, the amount of total savings in treated households increased much more from midline to endline than baseline to midline. Figure 39 displays the change in household total savings over the 3 time points and 3 groups, with 95% confidence intervals. Table 40 details the difference-in-differences values discussed above. Participation in SILCs appears to be a strong contributor to these changes, with 98% of all participants indicating to be saving in SILCs at endline (see also section 8.3 below).

**Figure 39. Households' total savings, in Burundian Francs**

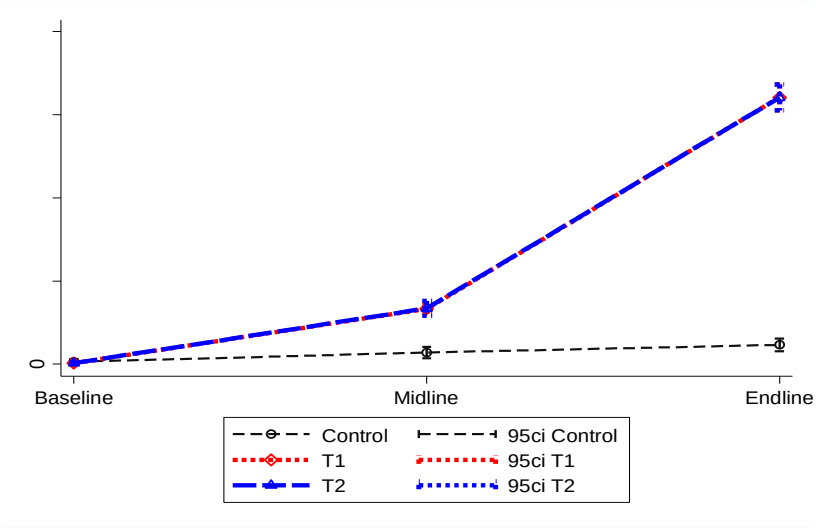



**Table 40. Treatment effect on households' total savings**

| Cibitoke | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
|---|---|---|---|---|
| T1 vs C | 5,861*** | 37,378*** | 31,517*** | Upward increase |
| T2 vs C | 5,989*** | 37,944*** | 31,954*** | Upward increase |
| Sig. Test T1 vs T2 | Ns | Ns | Ns | |

| Kirundo | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
|---|---|---|---|---|
| T1 vs C | 4,950*** | 22,110*** | 17,160*** | Upward increase |
| T2 vs C | 4,923*** | 21,731*** | 16,808*** | Upward increase |
| Sig. Test T1 vs T2 | Ns | Ns | Ns | |

| Total | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
|---|---|---|---|---|
| T1 vs C | 5,411*** | 29,959*** | 24,511*** | Upward increase |
| T2 vs C | 5,458*** | 29,956*** | 24,461*** | Upward increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |

*** p<0.01, ** p<0.05, * p<0.1, ns (not significant)

## 8.2. More frequent savings

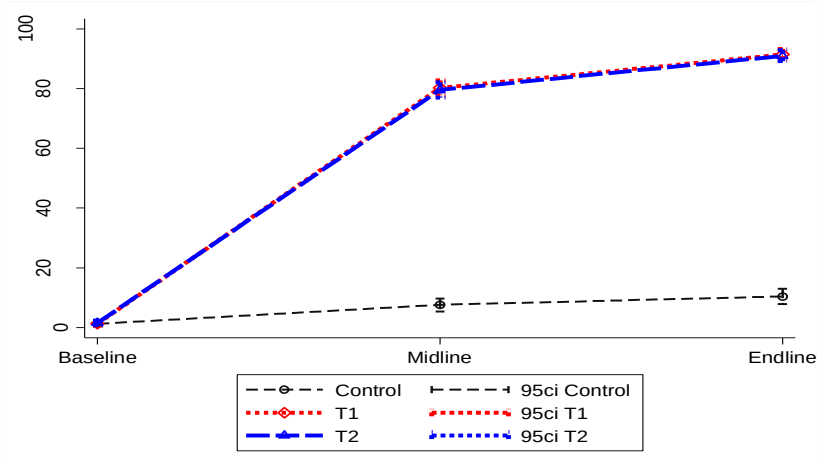
Already at midline, significant increases in the frequency of savings were noted. Further analysis with endline data reveals that this increase was sustained, with the frequency of savings stabilising at high levels for households who benefited from the programme. Table 41 below reports the distributions of households by frequencies of saving, at baseline and endline. At baseline, almost all households – treatment and control – do not save at all. By 2015, almost 9 in 10 treated households are saving every week – this is standard practice applied by most SILCs – while 9 in 10 control households still do not save at all.

**Table 41. Distributions of households, by saving frequencies, at baseline and endline**

| | Baseline | | | | Endline | | |
|---|---|---|---|---|---|---|---|
| | T1 | T2 | Control | | T1 | T2 | Control |
| Every week | 0.4% | 0.9% | 0.2% | Every week | 87.1% | 86.5% | 8.7% |
| Every 2 weeks | 0.1% | 0.1% | 0.3% | Every 2 weeks | 4.3% | 4.4% | 0.9% |
| Once per month | 0.8% | 0.5% | 0.7% | Once per month | 0.1% | 0.1% | 0.7% |
| Once every 3 months | 0.4% | 0.2% | 0.5% | Once every 3 month | 0.2% | 0.1% | 0.0% |
| < once every 3 months | 0.4% | 0.4% | 0.3% | < once every 3 months | 0.2% | 0.1% | 0.0% |
| Do not save | 97.9% | 97.9% | 98.0% | Do not save | 8.1% | 8.8% | 89.6% |
| **Total** | 100% | 100% | 100% | **Total** | 100% | 100% | 100% |

We now analyse the share of households who save at least once a month, across treatments, provinces and time periods via differences-in-differences. The graphical representations of this outcome for both provinces combined is presented in Figure 40 below and is in line with the large shift from no savings to frequent savings suggested by Table 41 above.

**Figure 40. Households saving money at least once a month**




**Note that 3 categories are included in "at least once a month": "every week", "every two weeks" and "once per month". The midline report reported the change in saving behaviour only for the category "once a month". However households in this category at endline represent a very small fraction of all households. Focusing the analysis only on this category would only provide confusing results.*

As for amounts saved, the general trend in the percentage of treatment households saving at least once a month is an upward increase. T1 households were found to have experienced an 81 percentage point increase in the share of households saving more than once a month between baseline and endline. The increase is equally impressive in T2 households (+80 percentage points). However, Kirundo exhibits a different pattern than from Cibitoke. While treated households in Cibitoke became more and more likely to save at least once every month for both baseline to midline and midline to endline, no significant change is detected from midline to endline in Kirundo. Again, the impact of the training on households' capacity to save regularly seems to be negligible.

**Table 42. Treatment effect on percentage of treatment households saving at least once a month**

| Cibitoke | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
|---|---|---|---|---|
| T1 vs C | 0.682*** | 0.895*** | 0.214*** | Upward increase |
| T2 vs C | 0.664*** | 0.878*** | 0.213*** | Upward increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |

| Kirundo | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
|---|---|---|---|---|
| T1 vs C | 0.767*** | 0.718*** | -0.049 | Sustained increase |
| T2 vs C | 0.764*** | 0.724*** | -0.041 | Sustained increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |

| Total | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
|---|---|---|---|---|
| T1 vs C | 0.725*** | 0.810*** | 0.084*** | Upward increase |
| T2 vs C | 0.716*** | 0.803*** | 0.086*** | Upward increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |

*** p<0.01, ** p<0.05, * p<0.1, ns (not significant)

## 8.3. Use of the Savings and Internal Lending Communities (SILCs)

The success of the programme in improving an individuals' and households' capacity to save is found to be in large part due to the saving communities that were created as part of *Terintambwe*; the SILCs. In 2014, soon after their introduction, almost all individuals in treatment groups used them. According to monitoring survey data, 98% of treatment households joined a SILC in June or July 2014. In parallel, the share of households who did not save fell sharply in treatment groups. Figure 41 and Figure 42 represent these impressive changes graphically.

**Figure 41. Saving methods in control group**

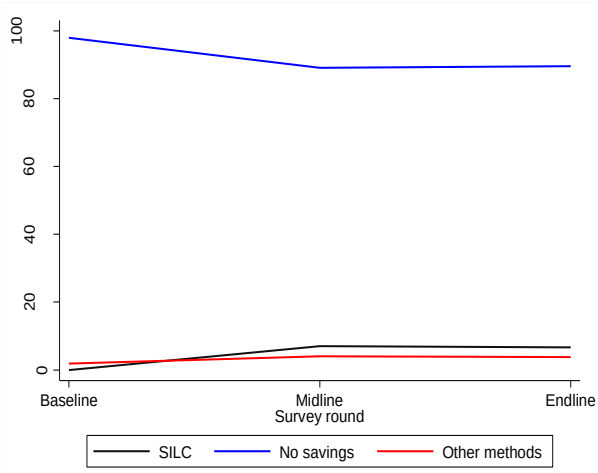
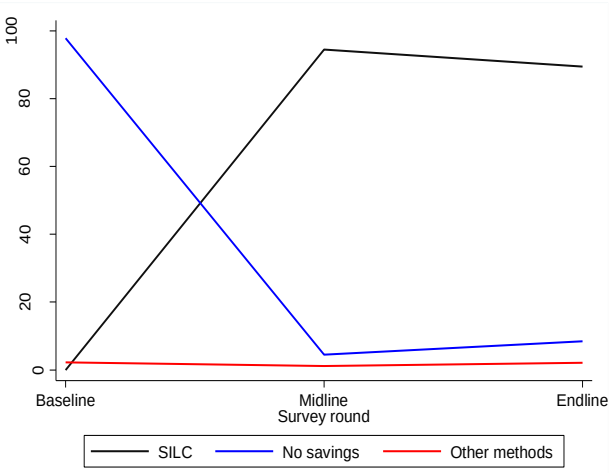



**Figure 42. Saving methods in treatment group**




*** "***Other" include microfinance institutions, commercial banks, cooperatives/saving groups, cash boxes, assets, family and friends and mobile phone accounts.*

This shift towards SILCs can also be found with respect to sources of loans. More than 9 out of 10 programme participants now borrow through the SILCs, representing a shift away from asking family or friends to provide loans.

## 8.4. Financial management

Finally, treated households appeared to be better versed in financial management than households in the control group, at endline. The absence of data at midline prevents any trend analysis. We thus analyse here the impact of the programme from baseline to endline. Households in Cibitoke were many more to keep a record of expenditures and income than households in Kirundo were: +72 percentage points against 14 for T1 and 71 percentage points against 11 for T2. However, the impact is comparable between treatments 1 and 2 as the t-statistic of difference in coefficient reveals.

**Figure 43. Share of households keeping records of income and expenditure**

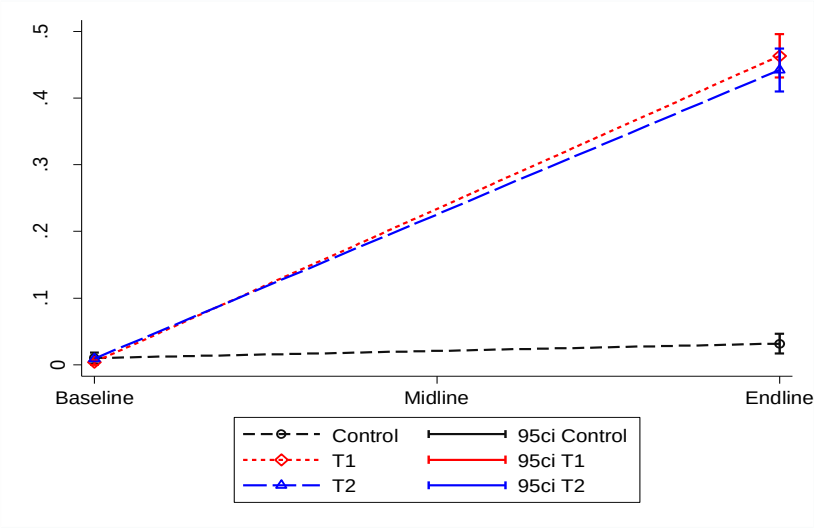



**Table 43. Treatment effect on the share of households keeping records of income and expenditures**

| Cibitoke | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
|---|---|---|---|---|
| T1 vs C | - | 0.719*** | - | - |
| T2 vs C | - | 0.710*** | - | - |
| Sig. Test T1 vs T2 | - | ns | - | |

| Kirundo | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
|---|---|---|---|---|
| T1 vs C | - | 0.144*** | - | - |
| T2 vs C | - | 0.111*** | - | - |
| Sig. Test T1 vs T2 | - | ns | - | |

| Total | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
|---|---|---|---|---|
| T1 vs C | - | 0.439*** | - | - |
| T2 vs C | - | 0.414*** | - | - |
| Sig. Test T1 vs T2 | - | ns | - | |

# 9. EDUCATION

In this section we provide information about educational indicators for children of beneficiary families. The following indicators were collected during baseline, midline and endline surveys: (i) the proportion of children who have never been to school, (ii) the proportion of children who are currently attending school (from those who positively responded to having ever been to school), and (iii) for those children attending school, the number of days not attending school within the two weeks prior to the survey. Three other indicators were collected only during baseline and endline surveys. These were grade repetition, whether the child performed any labour outside the household and for those children who did perform labour outside the household, the number of days within one week that they worked outside the household.

It is important to mention that the analysis is not done at individual level – that is, by following each child over time to estimate any changes in their school status.[14] We undertake the analysis at an aggregate level by keeping in all time periods all children aged 5 to 18 years. Then we estimate if there were changes in the proportion of children attending or not attending school between all time periods and comparing the proportion of children attending or not attending school for beneficiaries (high versus low treatment) against the children of the control group households. This analysis is the same as the one that we did for the midline analysis.

For the three indicators that we have information in baseline, midline and endline results show that:

- A sustained increase in the proportion of children who have ever been to school in Cibitoke for beneficiaries relative to control group. *("Our children go to school"* [C-Bu-T2F].) That is, there is a significant increase in the proportion of beneficiary children who have ever been to school relative to control group children from baseline to midline, without further increase from midline to endline in Cibitoke.
- An upward increase in the proportion of children who have ever been to school in Kirundo for beneficiaries relative to control group (see Figure 44). That is, there is a significant increase in the proportion of beneficiary children who have ever been to school relative to control group children from baseline to midline, and a further increase from midline to endline mainly due to a significant drop in the control group.
- A sustained increase in the proportion of children currently attending school in Cibitoke for beneficiaries relative to control group. That is, there is a significant increase in the proportion of beneficiary children who are currently attending school relative to control group children from baseline to midline, without further increase from midline to endline in Cibitoke (see Table 44).
- An upward increase in the proportion of children who are currently attending school in Kirundo for beneficiaries relative to control group (see Table 44).
- No change or reduction in the average number of school days missed within the two weeks prior to the survey for beneficiaries relative to control group (see Figure 45).

[14] The reason why we are not able to undertake the analysis at the level of the child is due to the fact that individual records for children were not programmed to be matched between baseline and midline. We do have the information to match the sample, but given time constraints this analysis will not be possible.

- No differences were found for T1 beneficiaries relative to T2 beneficiaries for any of these indicators.

**Figure 44. Proportion of children who have ever attended school in Kirundo over time**

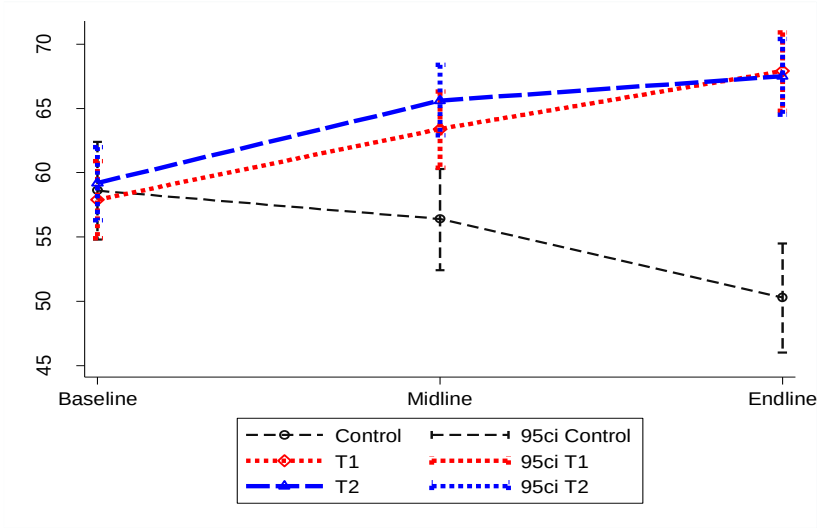
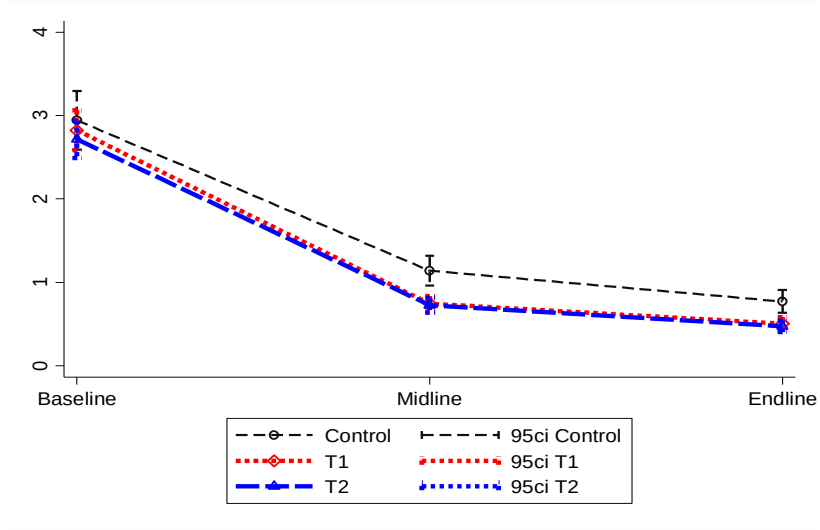



**Table 44. Relative change in proportion of children attending school over time**

| | Treatment Effects | | | |
|---|---|---|---|---|
| Cibitoke | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | 0.178*** | 0.181*** | 0.002 | Sustained increase |
| T2 vs C | 0.200*** | 0.177*** | -0.023 | Sustained increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| Kirundo | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | 0.130*** | 0.234*** | 0.105*** | Upward increase |
| T2 vs C | 0.103*** | 0.191*** | 0.088** | Upward increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| Total | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | 0.155*** | 0.207*** | 0.052** | Upward increase |
| T2 vs C | 0.150*** | 0.182*** | 0.032 | Sustained increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |

**Figure 45. Average number of school days missed within two weeks prior to survey over time**




For the indicators that we only have two periods in time, results show:

- No change in grade repetition over time for beneficiaries relative to control group (see Figure 46).
- A significant decline in the proportion of children reporting working (either paid or unpaid) outside the household in favour of beneficiaries relative to control group in both provinces (see Figure 47). This increase is mainly due to a reduction in the proportion of beneficiary children who work and an increase in the proportion of control group children who work on weekly basis outside the household.
- Finally, a significant decline in the average number of days that children work outside the household on weekly basis in Kirundo, with no significant decline in Cibitoke (see Table 45).

**Figure 46. Average number of school grades repeated over time**

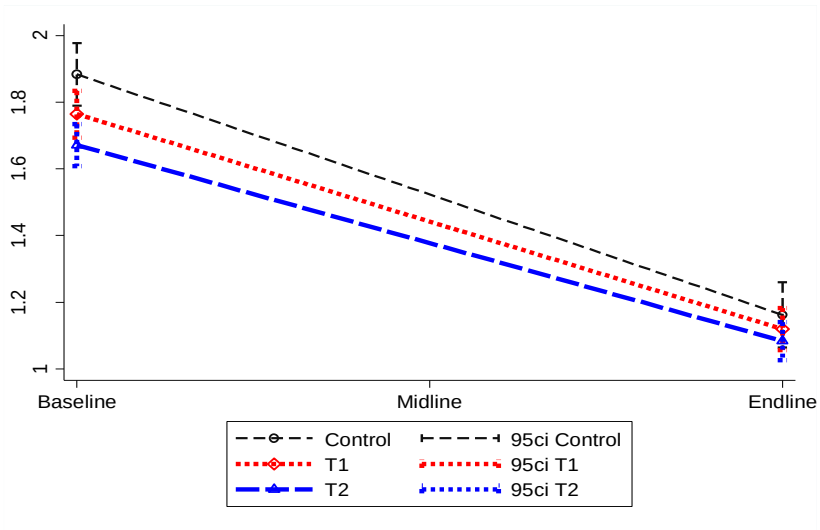


**Figure 47. Proportion of children who worked outside the household weekly over time**

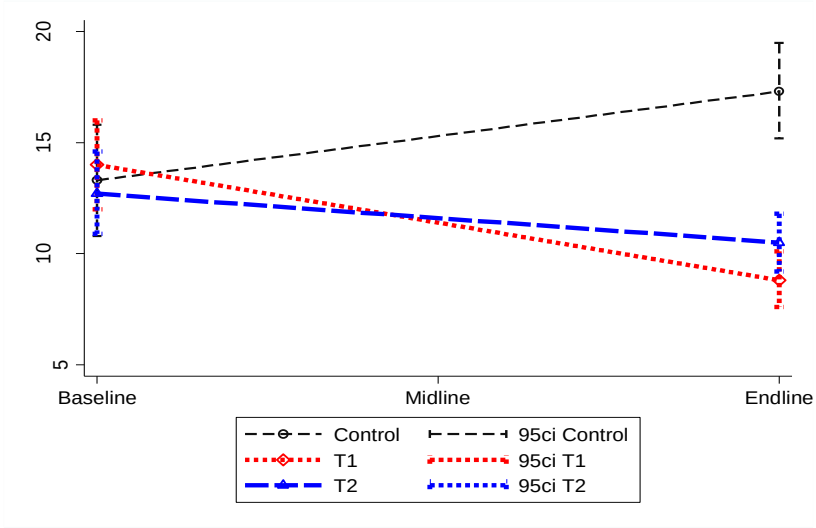



**Table 45. Relative change in average number of days children work outside the household over time**

| | Treatment Effects | | | |
|---|---|---|---|---|
| Cibitoke | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | - | -0.782 | - | No change |
| T2 vs C | - | -0.372 | - | No change |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| Kirundo | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | - | -0.897** | - | Decline |
| T2 vs C | - | -0.715* | - | Decline |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| Total | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | - | -0.842** | - | Decline |
| T2 vs C | - | -0.509 | - | No change |
| Sig. Test T1 vs T2 | ns | ns | ns | |

# 10. HEALTH AND HYGIENE

We consider a number of indicators in relation to health and hygiene, referring to health-seeking behaviour, affordability of health care and hygienic practices. In the quantitative household survey, respondents were asked questions regarding these issues in reference to when a household member above the age of 6 was sick. Characteristics of a household member above the age of 6 are similar across survey rounds. The groups that respondents refer to most are children (sons or daughters) followed by the household head and spouse. Two-thirds of all those having been sick were female and only one-third were male.

The qualitative component holds information on the extent to which the programme had an impact on health expenses and hygiene practices following questions about the overall impact of the programme and coaching and support services.

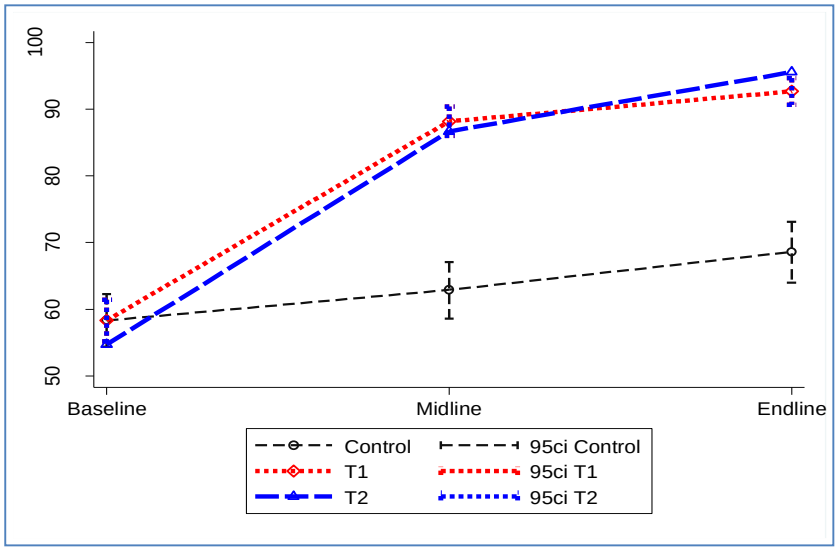
## 10.1. Health-seeking behaviour

With respect to health-seeking behaviour, respondents were asked about whether they attended a formal health provider or sought help from informal health providers when a household member was sick. Treatment effects and trends are presented in Table 46 and actual proportions of households having attended formal health provider are shown in Figure 48. Strong improvement in attendance of a formal health provider can be observed for both T1 and T2 households from baseline to midline. *("My child was sick for a whole year and I could not afford to take her to hospital but now I do because of Terintambwe"* [C-Bu-T1F].) There is no significant impact of the programme from midline to endline; although the proportion of households in treatment groups continues to increase, the rise in proportion of households in the control group also seeking formal health care offsets this positive result. There are no significant differences in impact for T1 and T2 households in Cibitoke but effects are significantly different in Kirundo.

**Table 46. Households attending formal health provider for sick member**

| **Cibitoke** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
|---|---|---|---|---|
| T1 vs C | 0.172*** | 0.179*** | 0.007 | sustained increase |
| T2 vs C | 0.185*** | 0.214*** | 0.029 | sustained increase |
| Significance test T1 vs T2 | ns | ns | ns | |
| **Kirundo** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | 0.342*** | 0.314*** | -0.028 | sustained increase |
| T2 vs C | 0.370*** | 0.408*** | 0.038 | sustained increase |
| Significance test T1 vs T2 | ns | ** | * | |
| **Total** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | 0.256*** | 0.243*** | -0.012 | sustained increase |
| T2 vs C | 0.277*** | 0.309*** | 0.032 | sustained increase |
| Significance test T1 vs T2 | ns | *** | ** | |

**Figure 48. Attending formal health provider**




Improvements in health-seeking behaviour can be explained by the fact that T1 and T2 households received health insurance cards, making such health care – particularly in conjunction with higher incomes – more affordable. At baseline, only 6% of T1 and T2 households had health insurance for their households compared to 93% at endline. When asked about reasons for not visiting a formal health provider at baseline (before health cards were issued), the large majority of households in treatment and control groups (75%–80%) indicated that they were unable to afford such health care. At endline, only 20% of households in T1 and T2 that did not visit a formal health care provider indicated that this was due to the inability to pay; the majority of those households indicated that seeking informal health care from within the community and the distance to formal health services were reasons for not attending formal health services. The inability to pay remained the most important reason for control group households not seeking formal health care, despite an increase in the proportion of control households having health insurance from 6% at baseline to 21% at endline.

## 10.2. Affordability of medicines

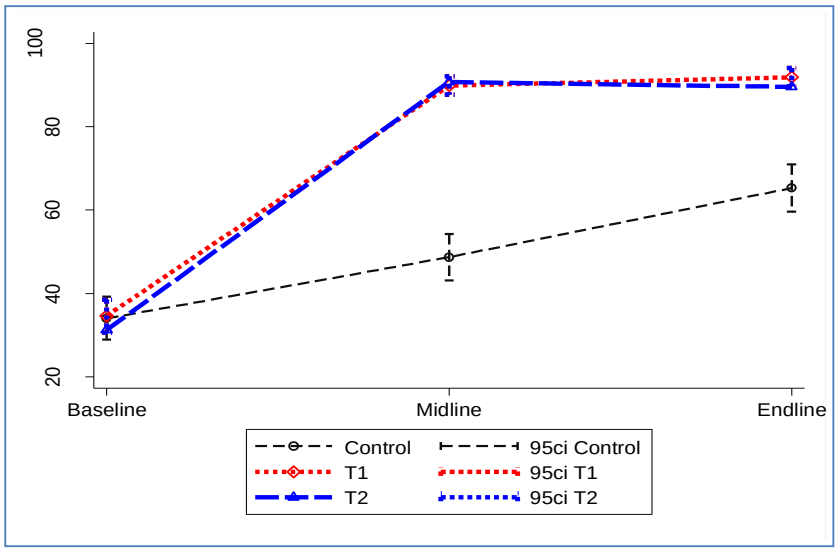
These findings are corroborated when considering the affordability of medication for household members who are sick, as presented in

**Table 47** and
Figure 49. While only one out of three households in the treatment groups was able to afford all prescribed medication at baseline, this had increased to 91% at endline. The control group households also experienced an improvement with an increase from 34% at baseline to 49% at midline and 65% at endline. Impact estimates for Cibitoke suggest that there was a negative impact of the programme from midline to endline, however this negative effect is due to the strong improvement among control group households in this period rather than a strong deterioration in affordability of medicines among T1 or T2 households. There are no significant differences in impact for T1 and T2 households.

**Table 47. Households being able to afford medicine for sick member**

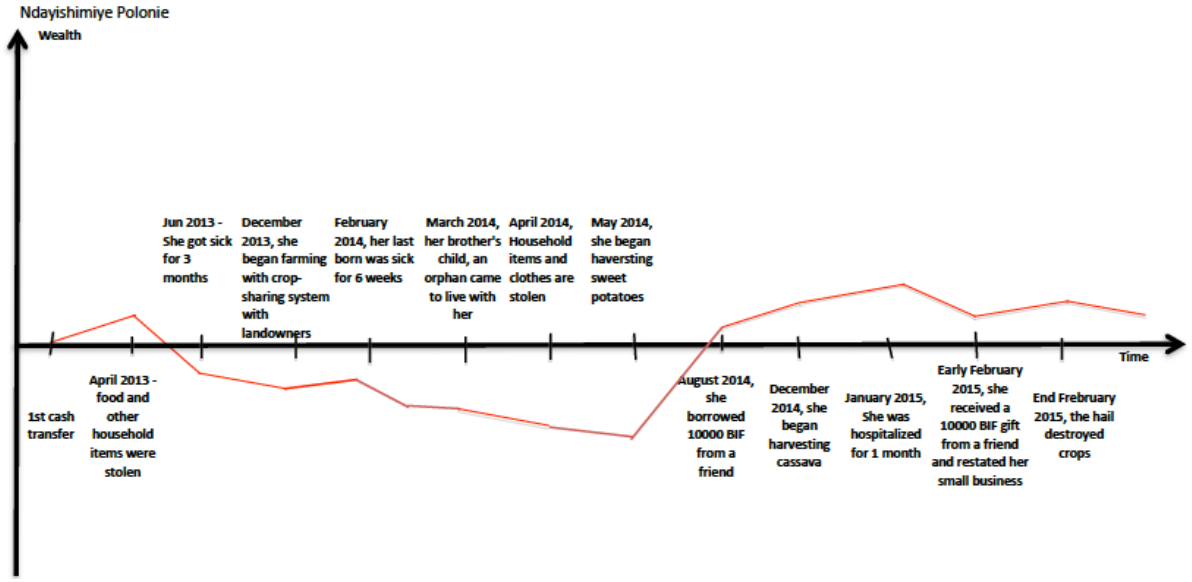
| **Cibitoke** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
|---|---|---|---|---|
| T1 vs C | 0.469*** | 0.279*** | -0.190*** | cyclical |
| T2 vs C | 0.524*** | 0.291*** | -0.233*** | cyclical |
| Significance test T1 vs T2 | ns | ns | ns | |
| **Kirundo** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | 0.280*** | 0.225*** | -0.055 | sustained increase |
| T2 vs C | 0.319*** | 0.243*** | -0.076 | sustained increase |
| Significance test T1 vs T2 | Ns | ns | ns | |
| **Total** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | 0.406*** | 0.264*** | -0.145*** | cyclical |
| T2 vs C | 0.449*** | 0.277*** | -0.178*** | cyclical |
| Significance test T1 vs T2 | Ns | ns | ns | |

**Figure 49. Able to afford all medication**




The importance of increased affordability of health care is illustrated by the case study of control group member Polonie from Cibitoke, who experienced large drops in household wealth following health shocks and the inability to mitigate those (see Box 4). It should also be noted that notwithstanding the improvements in health-seeking behaviour and affordability

of medication, health shocks and managing those shocks remains a great challenge to *Terintambwe* participants and could undermine their ability to benefit from the programme. The case study of Beatrice from Cibitoke (Box 3 above) highlights this challenge and the




importance of access to health insurance even when running a profitable IGA.

**Box 4. Household case study – Polonie from Cibitoke**

Polonie is a control group member from Cibitoke and describes the changes in household wealth and spending since the start of the *Terintambwe*. Profitable harvests from sharecropping allowed her to improve household wealth but illness and lack of health insurance for covering health expenses caused setback on two occasions. She explains: "*I acquired a debt from an individual in August 2014 and started a business of banana juice and the profit I made was used to buy all school materials for my children and niece […]. I fell sick in the same period and I did not have a health card. I then used a portion of the profit I made from my IGA to seek for treatment and the remaining amount was used to reimburse my debt. Hence I was not able to continue the banana juice business. I may restart running it again if I manage to have another capital."* [C-Bu-CCG]

The increases in health-seeking behaviour and affordability of prescribed medication among control group households suggests that increased incomes and provision of health insurance cards as part of the *Terintambwe* programmes are not the only explanation for improvements in health indicators. Training and advice provided as part of the *Terintambwe* programme and other health campaigns may also have a role to play, either directly or indirectly through spillover effects. Information from the qualitative research does not suggest the existence of widespread spillover effects or many other initiatives with respect to health. When control group members were asked about this as part of the qualitative component, they indicated not to have received any information from *Terintambwe* participants, other NGOs or health workers. Responses from Concern case managers and supervisors suggests that although other initiatives by NGOs and health workers do exist in the communities included in the programme, few of these focused on health-related issues.

## 10.3. Hygiene practices

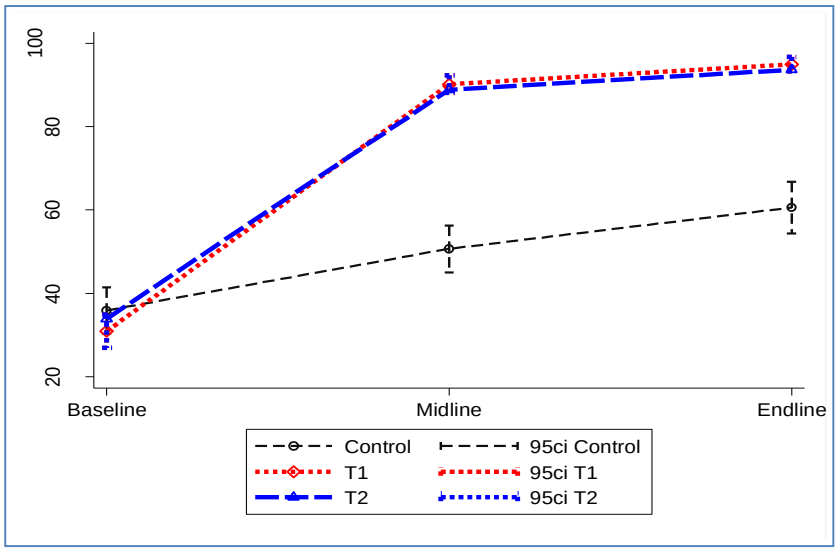
With respect to hygiene practices, the quantitative findings focus on hand-washing behaviour of the survey respondents. Findings show a large increase in the proportion of respondents of T1 and T2 households usually washing their hands after toileting, from 50% at baseline to 93% at endline. When asked about reasons for this change in practice, two-thirds of T1 and T2 respondents indicated that this was due to training as part of the *Terintambwe* programme and one-third responded that the behaviour change was a result of home visits by *Terintambwe* case manager. Results for the control group also convey change in their hygiene practices, albeit much smaller, from 48% at baseline to 59% at endline. Reasons for such a change include overhearing about good practices from *Terintambwe* participants (32%), training that was provided through the *Terintambwe* programme (25%) and learning through awareness campaigns by government (18%) and NGOs (8%).

Improvements for treatment group households are even starker when considering the use of soap and water for washing hands after toileting. Of those respondents usually washing their hands after toileting, one in three used water and soap at baseline. At endline this had increased to 61% for control group households and 94% for treatment households. The programme only had a significant impact from baseline to midline but not from midline to endline. There are no significant differences in impact for T1 and T2 households.

**Table 48. Respondents usually washing hands with soap and water after toileting**

| **Cibitoke** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
|---|---|---|---|---|
| T1 vs C | 0.489*** | 0.419*** | -0.070 | sustained increase |
| T2 vs C | 0.423*** | 0.396*** | -0.027 | sustained increase |
| Significance test T1 vs T2 | ns | ns | * | |
| **Kirundo** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | 0.394*** | 0.363*** | -0.031 | sustained increase |
| T2 vs C | 0.378*** | 0.299*** | -0.080 | sustained increase |
| Significance test T1 vs T2 | ns | ns | ns | |
| **Total** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | 0.446*** | 0.398*** | -0.047 | sustained increase |
| T2 vs C | 0.403*** | 0.355*** | 0.034 | sustained increase |
| Significance test T1 vs T2 | ns | ns | ns | |

**Figure 50. Washing hands with soap after toileting**




Improved hygiene practices go hand-in-hand with greater availability of soap and detergents in households; at baseline, 36% of all households had soap or detergent compared to 93% of treatment households and 59% of control households at endline. Reasons for this behaviour were similar as noted in reference to hand-washing behaviour; respondents of T1 and T2 households attributed the change to training and home-visits by case managers as part of *Terintambwe* programme while respondents of control group households indicated that they had learned about it from *Terintambwe* participants, through *Terintambwe* training and awareness campaigns by government and other NGOs. A control group member from Kirundo indicated: *"I have learned good hygiene practices from Terintambwe participants"* [K-Si-CG] and a control group member from Cibitoke said: *"We have once participated in a training session on sanitation and good hygiene practices*" [C-Bu-CG].

# 11. FAMILY PLANNING AND AIDS

This chapter discusses programme impacts on family planning and awareness and prevention of HIV and AIDS.

## 11.1. Family planning

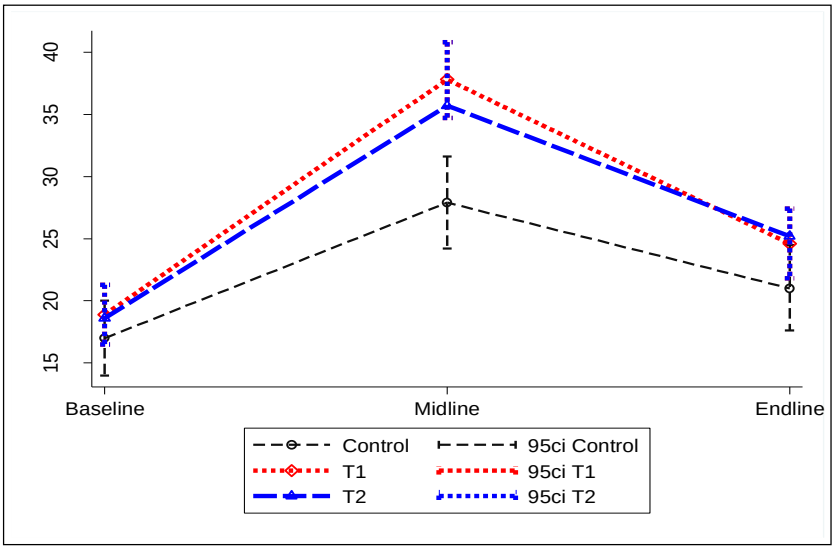
Respondents were asked whether they are currently using contraceptives. There was a significant increase in the proportions of all T1 and T2 households from baseline to midline but programme impact was only significant in Cibitoke. This can partly be explained by a higher starting position in Kirundo (25% of T1 and T2 households indicated to use contraceptives at baseline compared to 12% in Cibitoke). Programme impacts are also dampened by the increase in contraceptive use among control group households.

While observing significant changes in contraceptive use from baseline to midline, contraceptive use dropped from midline to endline. This holds across all groups - treatment and control. In some cases, the positive change from baseline to midline is cancelled out by the drop in use from midline to endline. There are no significant differences between impacts on T1 and T2 households.

**Table 49. Households whose members currently use contraception**

| **Cibitoke** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
|---|---|---|---|---|
| T1 vs C | 0.128*** | 0.035 | -0.093** | cyclical |
| T2 vs C | 0.139*** | 0.028 | -0.111** | cyclical |
| Significance test T1 vs T2 | ns | ns | Ns | |
| **Kirundo** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | 0.028 | -0.002 | -0.029 | no impact |
| T2 vs C | -0.017 | 0.022 | 0.040 | no impact |
| Significance test T1 vs T2 | ns | ns | Ns | |
| **Total** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | 0.078** | 0.017 | -0.062* | cyclical |
| T2 vs C | 0.061* | 0.025 | -0.036 | no impact |
| Significance test T1 vs T2 | ns | ns | ns | |

**Figure 51. Households whose members currently use contraception**




When asked about what let to respondents are using contraceptives, the large majority of T1 and T2 households indicated this to be a result of training within the *Terintambwe* programme and coaching and home visits by *Terintambwe* case managers. Although there are no significant differences between programme impacts on T1 and T2 households, coaching and home visits by case managers played a more important role in stimulating contraceptive use for T1 households (31%) compared to T2 households (10%). Sensitisation and awareness campaigns by government and other NGOs appear particularly important for the control group; 45% and 13% of the control group indicated to be using contraceptives following sensitisation and awareness campaigns of government and other NGOs respectively. The drops in usage from midline to endline for all groups point towards the importance of continued messaging and awareness raising.

## 11.2. HIV and AIDS

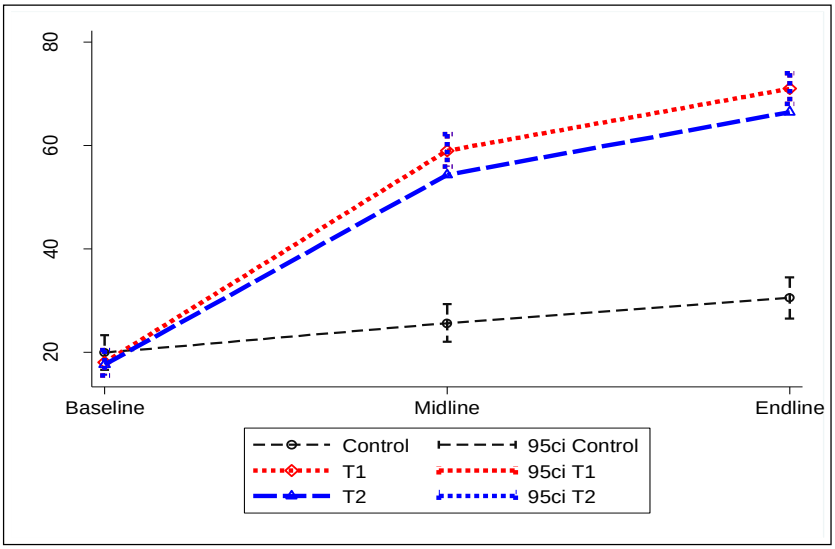
With respect to HIV and AIDS, we consider respondent's knowledge, attitudes and use of preventative measures.

Knowledge about HIV/AIDS was assessed on the basis of questions about transmission such as 'Can a healthy-looking person have HIV and AIDS?', 'Can a person get HIV and AIDS from mosquito bites?', 'Can a person get HIV and AIDS by sharing a meal with someone who is infected?', among others. The programme has had significant impact on knowledge about HIV/AIDS. While 18% of respondents in T1 and T2 households had knowledge about HIV/AIDS at baseline, this had risen to 69% at endline. Overall treatment effects amount to 42 percentage points for T1 households and 38 percentage points for T2 households (Table 50). The largest impact occurred from baseline to midline. There are no consistent significant differences between impacts for T1 and T2 households. Figure 52 shows that the control group also improved their knowledge of HIV/AIDS across the project period.

**Table 50. Households whose members have knowledge of HIV/AIDS**

| **Cibitoke** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
|---|---|---|---|---|
| T1 vs C | 0.364*** | 0.479*** | 0.115** | upwards increase |
| T2 vs C | 0.374*** | 0.444*** | 0.071 | sustained increase |
| Significance test T1 vs T2 | ns | ns | ns | |
| **Kirundo** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | 0.340*** | 0.365*** | 0.024 | sustained increase |
| T2 vs C | 0.247*** | 0.318*** | 0.072 | sustained increase |
| Significance test T1 vs T2 | ** | ns | ns | |
| **Total** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | 0.353*** | 0.424*** | 0.071** | upwards increase |
| T2 vs C | 0.310*** | 0.383*** | 0.073** | upwards increase |
| Significance test T1 vs T2 | ns | ns | ns | |

**Figure 52. Households whose members have knowledge of HIV/AIDS**



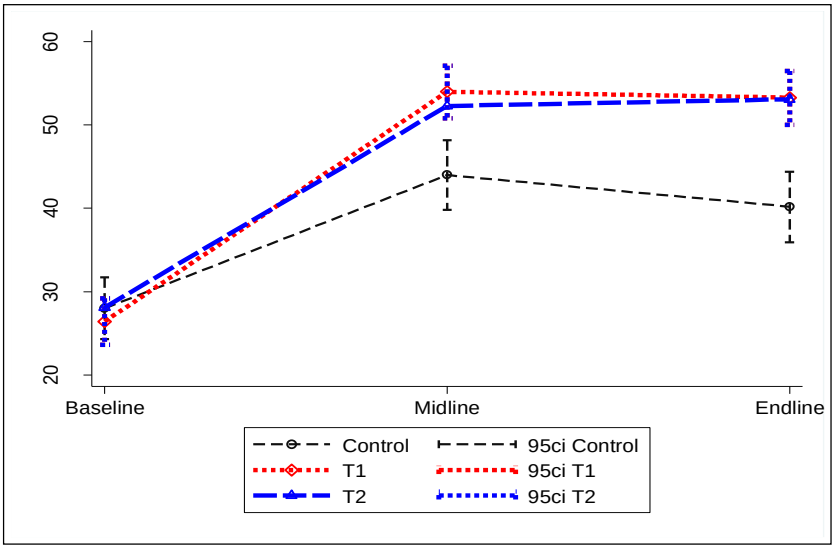

Improved knowledge about HIV/AIDS is matched by greater use of preventative measures. While members of 28% of all T1 and T2 households were using such measures at baseline, this had risen to 53% at midline and was sustained until the endline. When considering programme impacts, it becomes clear that the programme only had a significant impact in Cibitoke from baseline to midline. Descriptive statistics indicate that the use of preventative measures was already more widespread in Kirundo; 34% of T1 and T2 households in Kirundo were using preventative measures at baseline, compared to 19% in Cibitoke. There are no significant differences in impact between T1 and T2 households. The use of preventative

measures increased for control group households from baseline to midline but then dropped off again in the period from midline to endline.

**Table 51. Households whose members use preventive measures**

| **Cibitoke** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
|---|---|---|---|---|
| T1 vs C | 0.186*** | 0.239*** | 0.054 | sustained increase |
| T2 vs C | 0.162*** | 0.212*** | 0.050 | sustained increase |
| Significance test T1 vs T2 | ns | ns | ns | |
| **Kirundo** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | 0.048 | 0.053 | 0.006 | sustained increase |
| T2 vs C | 0.007 | 0.048 | 0.041 | sustained increase |
| Significance test T1 vs T2 | ns | ns | ns | |
| **Total** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | 0.115*** | 0.147*** | 0.031 | sustained increase |
| T2 vs C | 0.082** | 0.129*** | 0.047 | sustained increase |
| Significance test T1 vs T2 | ns | ns | ns | |

**Figure 53. Households whose members use preventive measures**




All those who had responded positively about the use of preventative measures at endline were asked what led to their behaviour. The large majority of respondents from T1 and T2 households indicated that it was a result of training in the *Terintambwe* programme and home visits by the case managers. Respondents from control group households indicated that they

had heard about it in training that was part of the *Terintambwe* programme or from training participants but mostly learned about it through sensitisation and awareness campaigns by government and other NGOs.

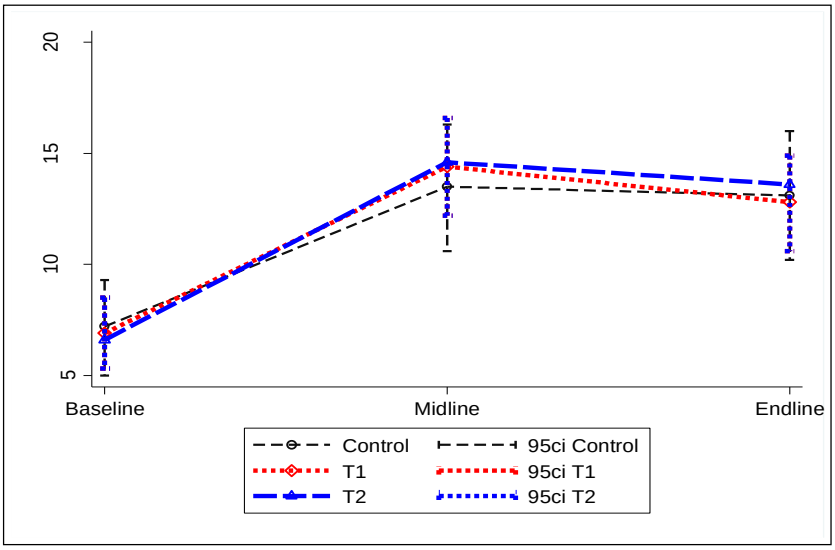
The improved knowledge about HIV/AIDS did not go hand-in-hand with more positive attitudes. Attitudes towards HIV and AIDS were measured by affirmative response to these questions: 'Would you be willing to care of family member with HIV/AIDS in your household?', 'Would you buy fresh vegetables from a shopkeeper/food seller had HIV and AIDS?', 'Should a teacher with HIV and AIDS, but is not sick, be allowed to continue teaching in school?' and negative responses to this question: 'If a member of your family became infected with HIV and AIDS, would you want it to remain a secret?'

Although there were large increases in affirmative responses to the first question, suggesting more positive attitudes toward family members living with HIV and AIDS, there are no significant programme impacts on attitudes about HIV/AIDS. This lack of impact can be explained by fairly small increases in affirmative responses for other questions but also by the fact that increases in affirmative responses for treatment households are matched by increases in among the control group households.

**Table 52. Households whose members have a positive attitude about HIV/AIDS**

| **Cibitoke** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
|---|---|---|---|---|
| T1 vs C | 0.010 | -0.016 | -0.026 | no impact |
| T2 vs C | 0.009 | -0.005 | -0.015 | no impact |
| Significance test T1 vs T2 | ns | ns | ns | |
| **Kirundo** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | 0.015 | 0.017 | 0.002 | no impact |
| T2 vs C | 0.023 | 0.026 | 0.003 | no impact |
| Significance test T1 vs T2 | ns | ns | ns | |
| **Total** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | 0.012 | -0.001 | -0.013 | no impact |
| T2 vs C | 0.016 | 0.010 | -0.006 | no impact |
| Significance test T1 vs T2 | ns | ns | ns | |

**Figure 54. Households whose members have a positive attitude about HIV/AIDS**



# 12. FOOD SECURITY

Hunger was a serious issue among households in Cibitoke and Kirundo at baseline. In 2013, all households surveyed in both provinces suffered at least one month of hunger. In addition the vast majority of adults and children ate only one meal per day. We consider programme impact on food security using three indicators: the number of meals eaten per day, the number of months per year that the household experiences hunger, and the diversity of household members' diets.

## 12.1. Meals per day

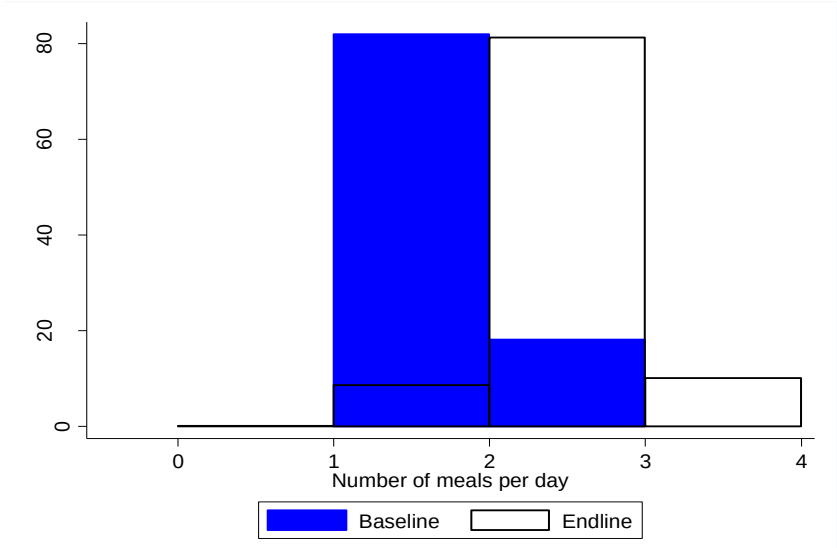
We consider the number of daily meals for adults and children. At baseline this number was particularly low for adults. Table 53 reports the average number of meals by treatment status and survey round and shows that members of treatment households ate 1.18 meals per day on average and members of control group households consumed 1.22 meals per day, on average.

Figure 55 indicates that on average, as many as 4 out of 5 adults were eating only one meal a day at baseline. The situation of *Terintambwe* participants improved greatly over time, with an average of 2 meals per day consumed by adults in treatment households at endline (Table 53).

**Table 53. Number of meals eaten yesterday by adults, by household (all provinces)**

| | Baseline | Midline | Endline |
|---|---|---|---|
| **T1** | 1.18 | 1.92 | 2.04 |
| **T2** | 1.18 | 1.90 | 2.00 |
| **Control** | 1.22 | 1.32 | 1.33 |

**Figure 55. Number of meals per day in treatment groups (T1 and T2 combined), by survey round**




Difference-in-differences estimations show that this increase is attributable to the programme. The programme's positive impact holds for low treatment (T2) and high treatment households

(T1) and is robust across all time periods (upward increase). There is no significant difference in impact between high and low treatment households. The aggregate increase is largely due to changes from baseline to midline, as illustrated in Figure 56 below.

**Figure 56. How many meals (including porridge) did the adults eat yesterday in your household?**

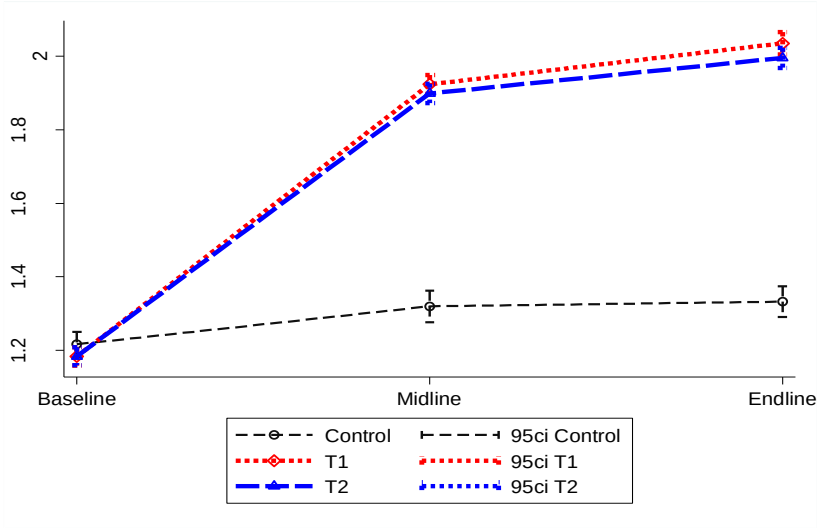



**Table 54. Treatment effect on the number of meals adults eat in a day**

| Cibitoke | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
|---|---|---|---|---|
| T1 vs C | 0.656*** | 0.763*** | 0.108** | Upward increase |
| T2 vs C | 0.627*** | 0.693*** | 0.065 | Sustained increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| **Kirundo** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | 0.618*** | 0.706*** | 0.088* | Upward increase |
| T2 vs C | 0.599*** | 0.702*** | 0.102** | Upward increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| **Total** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | 0.637*** | 0.736*** | 0.098*** | Upward increase |
| T2 vs C | 0.614*** | 0.698*** | 0.084** | Upward increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |

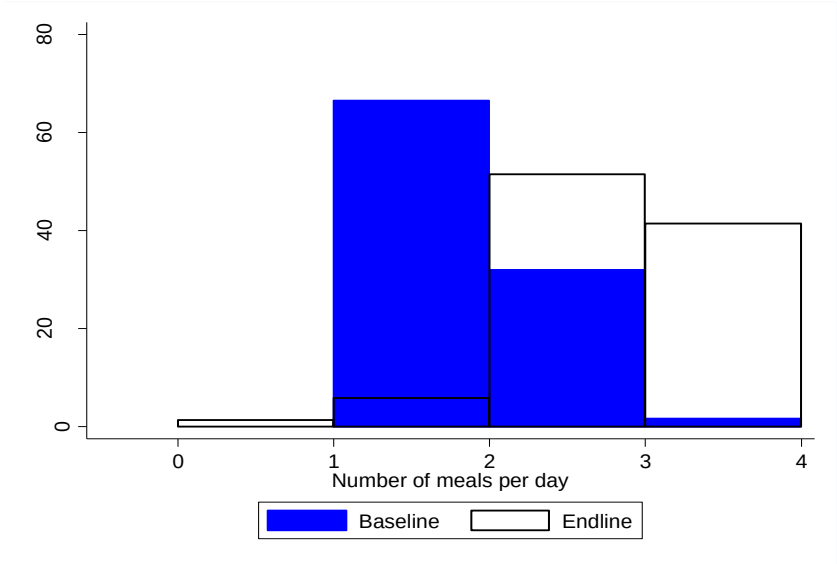
A comparable positive trend can be observed for children. It only differs in three ways: (i) children usually ate more meals in a day than adults to start with, (ii) they experienced a bigger increase in the frequency of their daily meals and (iii) when focusing on Cibitoke or Kirundo separately, we find that the increase is only significant from baseline to midline.

Before the start of the programme, children in all groups were eating on average 1.36 meals per day (Table 55 and
Figure 57). At endline, children in treatment households ate a full meal per day more on average. *("My children do not lack food anymore"* [C-Bu-T1M].)

**Table 55. Number of meals eaten yesterday by children, by household (all provinces)**

| | Baseline | Midline | Endline |
|---|---|---|---|
| **T1** | 1.35 | 2.21 | 2.35 |
| **T2** | 1.36 | 2.22 | 2.35 |
| **Control** | 1.36 | 1.54 | 1.56 |

**Figure 57. Distribution of meals children eat in treated households, at baseline and endline**




Difference-in-differences estimations show that this increase is attributable to the programme. The programme's positive impact holds for low and high treatment households. Improvements in the number of meals consumed by children almost entirely took place from baseline to midline. There is no significant difference in impact between high (T1) and low (T2) treatment households.

**Figure 58. How many meals (including porridge) did the children eat yesterday in your household?**

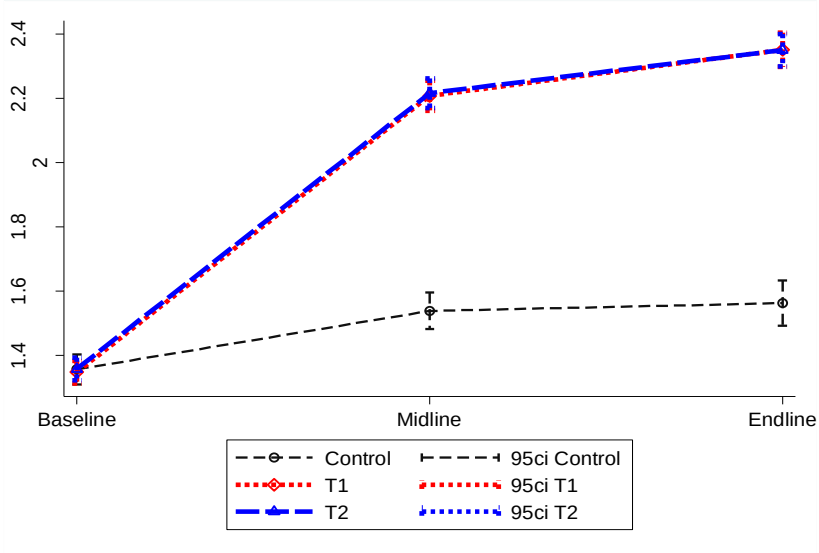



**Table 56. Treatment effect on the number of meals children eat in a day**

| Cibitoke | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
|---|---|---|---|---|
| T1 vs C | 0.713*** | 0.864*** | 0.151* | Upward increase |
| T2 vs C | 0.735*** | 0.857*** | 0.122 | Sustained increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| **Kirundo** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | 0.645*** | 0.731*** | 0.087 | Sustained increase |
| T2 vs C | 0.626*** | 0.722*** | 0.096 | Sustained increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| **Total** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | 0.679*** | 0.799*** | 0.119** | Upward increase |
| T2 vs C | 0.680*** | 0.790*** | 0.111* | Upward increase |
| Sig. Test T1 vs T2 | ns | ns | ns | |

Qualitative data confirms these positive impacts on meals per day, for both adults and children:

- *"We use to eat once but now we have lunch and dinner"* [K-Si-T1M]
- *"I used to eat once or not at all but now I eat twice a day"* [K-Ny-T2F]
- *"Now we eat twice or three times a day. But before Terintambwe started, we could spend a day without eating or only have dinner"* [C-Ma-T2M]

- *"My children now go to school after having eaten breakfast and they eat three times a day"* [C-Ma-T1F]

## 12.2. Months of hunger

We now look at the long-term impact of the programme on hunger at the household level. In this section we present the effect of the programme on the number of months in which the household experienced hunger in the previous 12 months.

This aspect of food insecurity was at concerning proportions at baseline. Households experienced on average more than 7 months of hunger in the 12 months preceding the interview. As many as one in four of all households at baseline reported being hungry for 12 months out of 12.

The evolution of months in hunger over the course of the programme is very positive for treated households. Figure 59 provides a graphical representation of the distribution of months in hunger for T1 and T2 households combined, between baseline and endline. This distribution has shifted leftward, toward less months of hunger. More important is the fact that "0 months" is now the single most given answer at endline (35%), while it was "12 months" at baseline (25%). Table 57, which shows averages by region and treatment group, suggests that this change was unequivocal.

**Figure 59. Distribution of months of hunger in treated households, at baseline and endline**

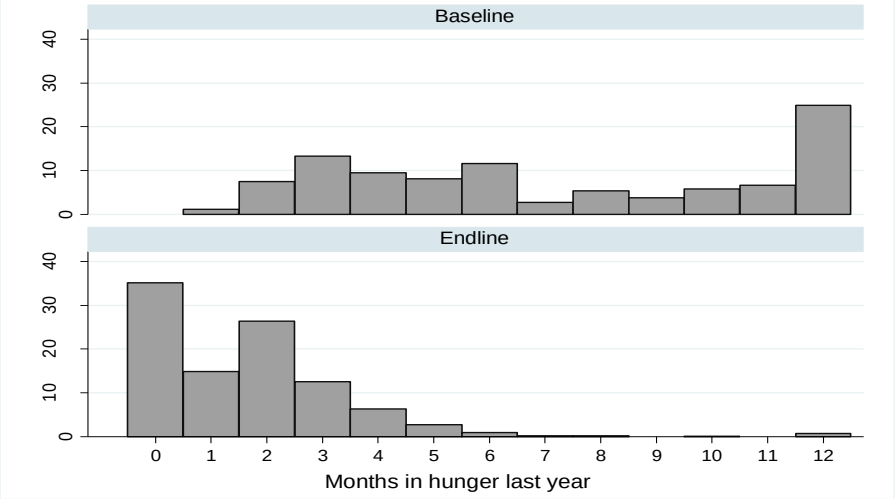



**Table 57. Months in hunger over the past year, by household, province and year**

| | Cibitoke | | Kirundo | | All | |
|---|---|---|---|---|---|---|
| | **Baseline** | **Endline** | **Baseline** | **Endline** | **Baseline** | **Endline** |
| **T1** | 7.73 | 1.14 | 7.03 | 2.02 | 7.39 | 1.57 |
| **T2** | 7.86 | 1.22 | 6.50 | 2.11 | 7.17 | 1.66 |
| **Control** | 7.73 | 6.28 | 6.89 | 5.80 | 7.31 | 6.05 |

Using a two-period difference-in-differences estimation, we observe that this reduction in months in hunger is not homogeneous across provinces. On average, households in Cibitoke who received either treatment reported being in hunger for five months less than at baseline. In Kirundo however, the reduction was limited to 3.3 and 3.9 months, for T2 and T1 respectively (see Table 58). High treatment households in Kirundo benefited by 0.63 month (19 days) less of hunger in the past 12 months than low treatment households. This difference is statistically significant (5%).

**Figure 60. How many months was the household hungry during the last 12 months (1 year)?**

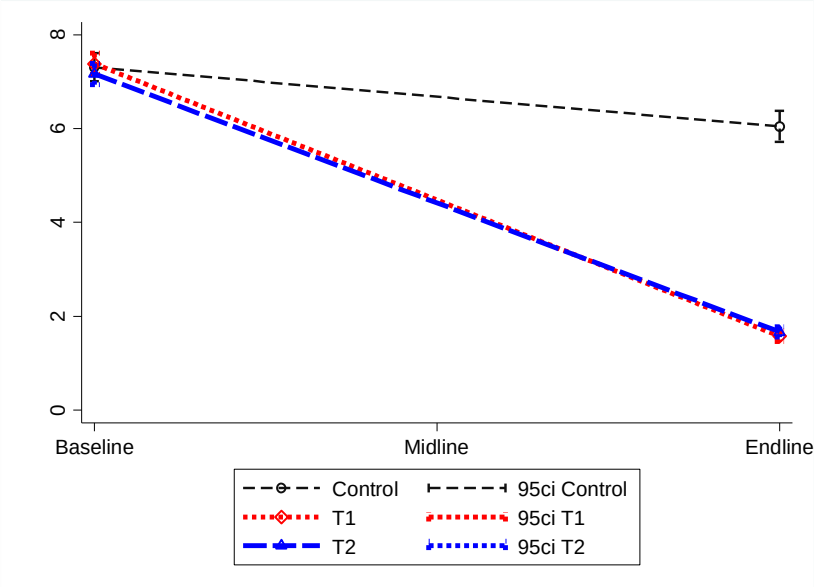



**Table 58. Treatment effect on the number of months in hunger, in a year**

| Cibitoke | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
|---|---|---|---|---|
| T1 vs C | - | -5.143*** | - | |
| T2 vs C | - | -5.191*** | - | |
| Sig. Test T1 vs T2 | - | ns | - | |
| **Kirundo** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | - | -3.918*** | - | |
| T2 vs C | - | -3.291*** | - | |
| Sig. Test T1 vs T2 | - | ** | - | |
| **Total** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | - | -4.547*** | - | |
| T2 vs C | - | -4.240*** | - | |
| Sig. Test T1 vs T2 | - | * | - | |

In sum, the *Terintambwe* programme not only succeeded in increasing the daily frequency of meals in treated households, it also succeeded in making them less hungry in a year by more than 4 months. *("There was a time we used to eat less or not at all but now we eat well and enough and we eat what we want"* [C-Bu-T1F].) It should be noted that these indicators are self-reported rather than observed or measured – a truer test of impact on hunger would be measured nutrition status.

## 12.3. Dietary diversity

Now that the positive effect of the programme on quantitative measures of food security has been established, we investigate how it improved the quality of the diet of treated households.

Another way to measure the degree of food insecurity to which households are exposed, is to count the number of food groups that are included in their diet (cereals, meat, vegetables, fats, etc.). The greater the number of food groups consumed in a day, the more food secure is the individual. We calculated a Household Dietary Diversity Index (HDDI): the sum of all food groups consumed by adult members of the household in the past 24 hours. There are 12 food groups. We also use a similar index for children aged 6 to 24 months, the Children Dietary Diversity Index (CDDI), based on 8 food groups rather than 12.[15]

For adults, who started with approximately 2.3 food groups in both treatment and control, their HDDI multiplied more than twofold for treated individuals. On the other hand, dietary diversity rose by only a third in control group.

**Table 59. HDDI by province and survey round**

| | Cibitoke | | Kirundo | | All | |
|---|---|---|---|---|---|---|
| | Baseline | Endline | Baseline | Endline | Baseline | Endline |
| **T1** | 2.65 | 5.64 | 1.98 | 4.61 | 2.31 | 5.18 |
| **T2** | 2.70 | 5.40 | 1.90 | 4.34 | 2.31 | 4.92 |
| **Control** | 2.77 | 3.16 | 1.82 | 2.94 | 2.30 | 3.07 |

This change in average diversity masks a more general shift in the distributions of food groups consumed. Figure 61 shows how this distribution evolves over time for control households, while Figure 62 does the same for treated households. For the control group, we observe a flattening of the spikes for adults, suggesting a wider dispersion in the number of food groups consumed, from 1-2 groups at baseline to 1-5 at endline. The shift towards the right is more pronounced for adults in treatment households. While most of these adults consumed only 1-3 food groups at baseline, at endline most were consuming 3-7 food groups, which signifies a substantial improvement in their food security.

[15] The food groups are listed in Annex 2.

**Figure 61. Number of food groups consumed by control group adults, by survey round**

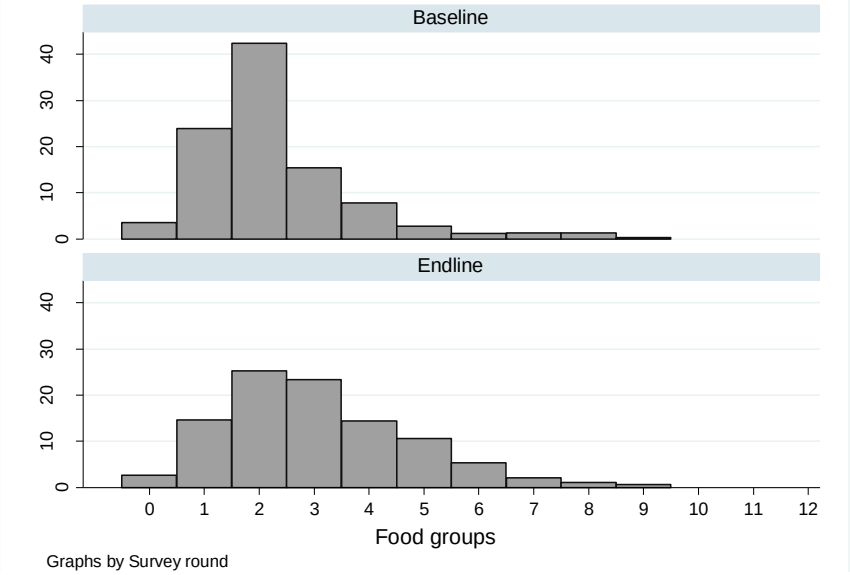
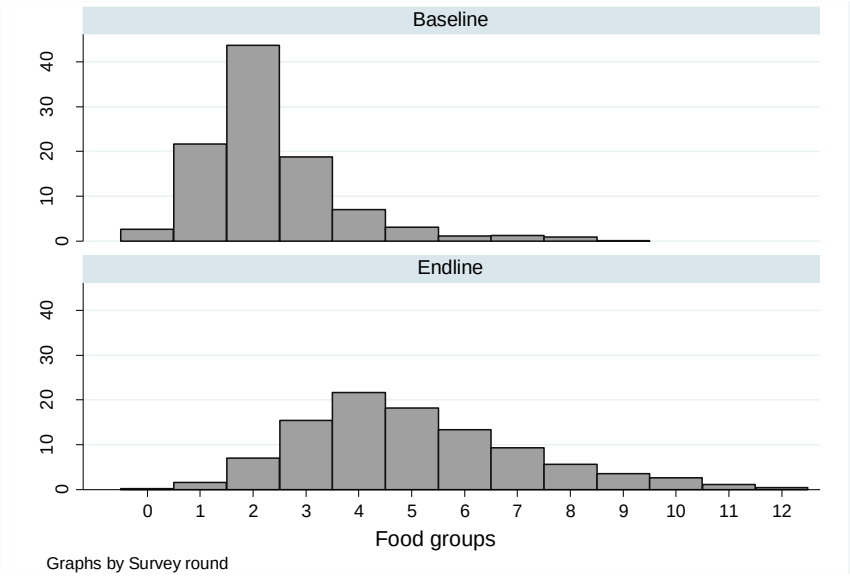



**Figure 62. Number of food groups consumed by treatment group adults, by survey round**




Turning to econometric analysis, we detect a significant improvement in dietary diversity for treated households (T1 and T2) in both regions. The impact is not homogeneous across regions. It is almost twice as big in Cibitoke (+2.60 for T1, +2.31 for T2) as in Kirundo (+1.50 and +1.30). It also differs by treatment. Adults in households that received high treatment (T1) experienced a significantly bigger increase in dietary diversity, by 13% on average.

**Figure 63. Evolution of HDDI over time**

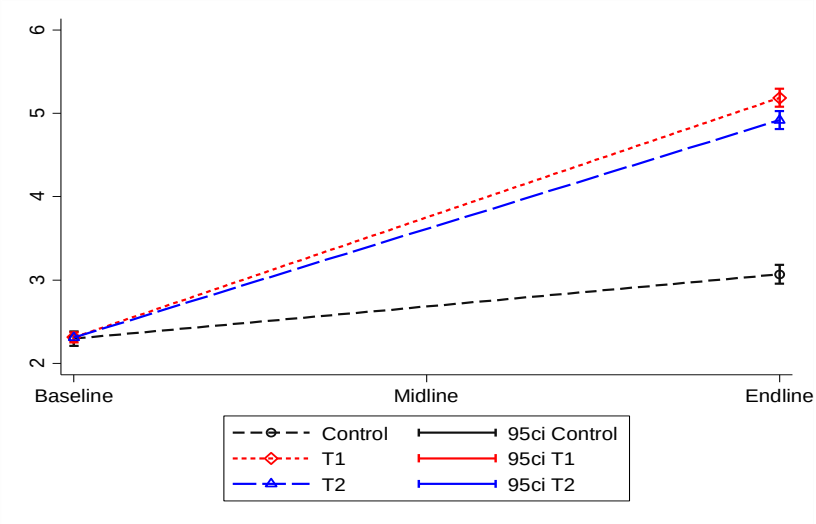



**Figure 64. Treatment effect on HDDI**

| Cibitoke | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
|---|---|---|---|---|
| T1 vs C | - | 2.601*** | - | - |
| T2 vs C | - | 2.308*** | - | - |
| Sig. Test T1 vs T2 | - | ** | - | - |
| **Kirundo** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | - | 1.500*** | - | - |
| T2 vs C | - | 1.304*** | - | - |
| Sig. Test T1 vs T2 | - | * | - | - |
| **Total** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | - | 2.099*** | - | - |
| T2 vs C | - | 1.855*** | - | - |
| Sig. Test T1 vs T2 | - | *** | - | - |

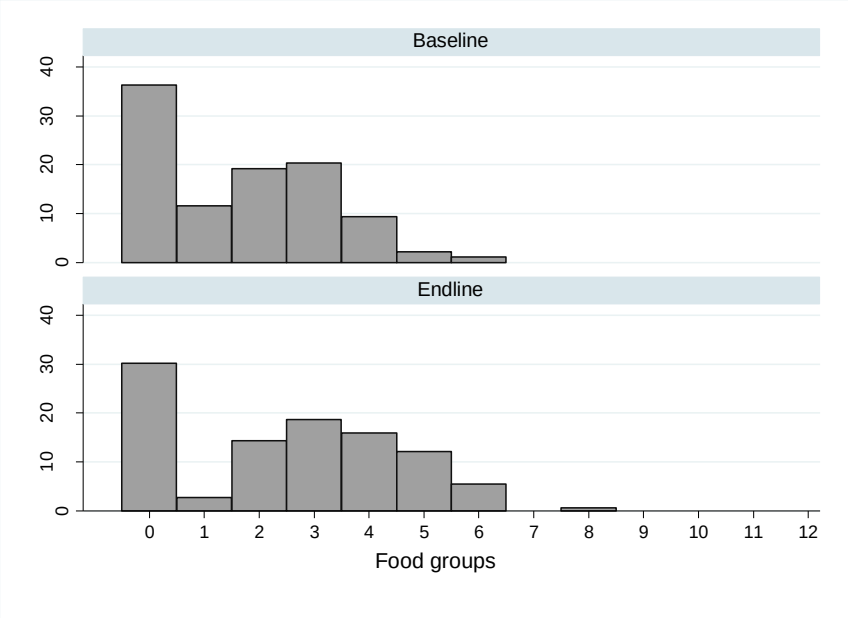
Turning to children's dietary diversity index (CDDI), the results are similar. *Terintambwe* led to significantly diversified children's diets, for both treatment groups in both provinces. This is confirmed by the summary statistics of Table 60 and the graphs of distributions in Figure 65 and Figure 66. The average CDDI for children in *Terintambwe* households doubled from 1.7 to 3.4 between baseline and endline, while it increased by a smaller amount, from 1.7 to 2.5, for children in control group households.

**Table 60. CDDI by province and survey round**

| | Cibitoke | | Kirundo | | All | |
|---|---|---|---|---|---|---|
| | Baseline | Endline | Baseline | Endline | Baseline | Endline |
| **T1** | 1.90 | 3.47 | 1.55 | 3.17 | 1.71 | 3.33 |
| **T2** | 1.86 | 3.74 | 1.65 | 3.12 | 1.74 | 3.44 |
| **Control** | 1.80 | 2.61 | 1.56 | 2.33 | 1.66 | 2.49 |

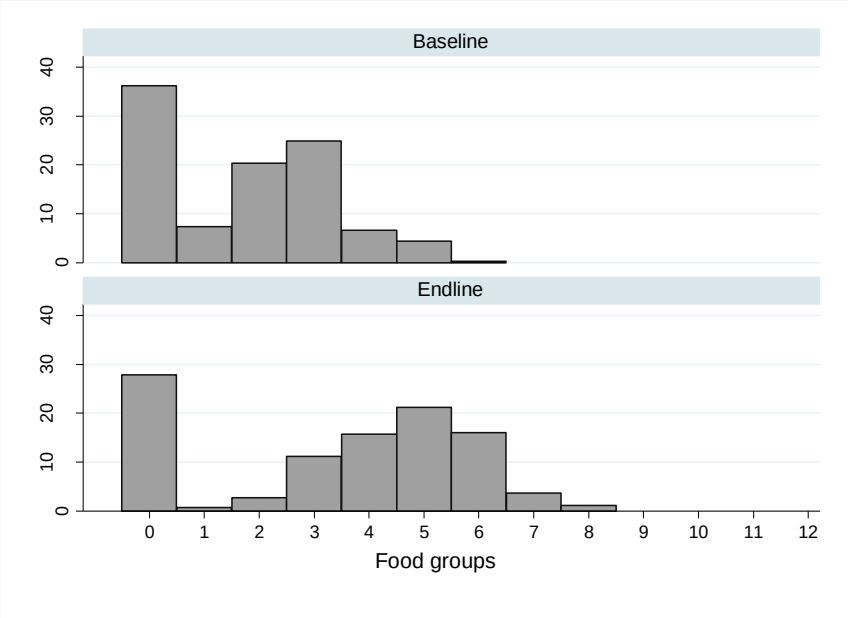
The two bar graphs in Figure 65 reveal very little change in the composition of children's diets in control group households between the baseline and endline surveys, other than a slight increase in the numbers of children eating 4, 5 or 6 food groups.

**Figure 65. Number of food groups consumed by control group children, by survey round**




The situation for children in treatment households is more encouraging. The bar charts in Figure 66 reveal a sharp shift to the right from baseline to endline, as the most common number of food groups reportedly consumed (other than 0) increased from 2 or 3 to 4, 5 or 6.

**Figure 66. Number of food groups consumed by treatment group children, by survey round**




The increase in dietary diversity is significant but not as large as for adults. Pooling the samples by provinces, we observe that children in high treatment households (T1) saw 0.83 food group added to their diets on average, 0.90 for T2 children. In proportional terms, this represent a 10-to-11 percentage points increase (8 is 100%), compared to 16-to-18 one for adults (12 is 100%). The impacts of different treatments are not differentiable in either provinces.

**Figure 67. Evolution of CDDI over time**

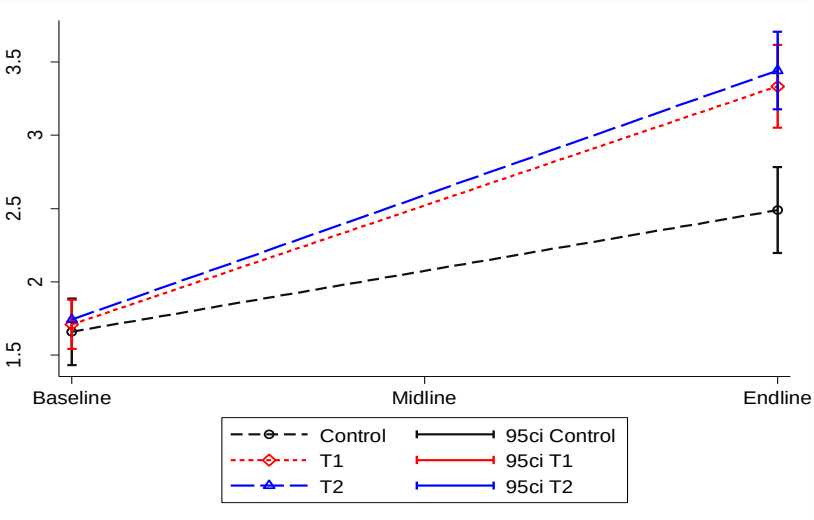


**Table 61. Treatment effect on CDDI**

| Cibitoke | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
|---|---|---|---|---|
| T1 vs C | - | 0.785** | | |
| T2 vs C | - | 1.077*** | | |
| Sig. Test T1 vs T2 | - | ns | - | - |
| **Kirundo** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | - | 0.839** | - | - |
| T2 vs C | - | 0.695** | - | - |
| Sig. Test T1 vs T2 | - | ns | - | - |
| **Total** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | - | 0.825*** | - | - |
| T2 vs C | - | 0.896*** | - | - |
| Sig. Test T1 vs T2 | - | ns | - | - |

Participants were well aware of these improvements in the quality of their diets, partly because of the messages they were given about the importance of dietary diversity and of eating vegetables from their kitchen gardens.

- *"Our diet has considerably improved"* [K-Ka-T2M]
- *"The quality of my diet has improved as well; we do not fall sick as much as we used to in the past. We are much healthier"* [C-Bu-T2F]
- *"We used to eat sweet potatoes and bananas but now we eat also rice and meat sometimes. The vegetables harvested from the kitchen garden have contributed to diversify our diet"* [C-Bu-T2M]
- *"The quality of the diet has considerably improved; we can eat whatever we want such as fish, beans, bananas to name a few but before Terintambwe starts we used to eat cassava dough and vegetables cooked without oil and salt or we would eat just vegetables on days we did not find work"* [K-Si-T1F]
- *"We used to eat cassava leaves cooked without oil but now we even eat meat"* [C-Mu-T2M].

## 12.4. Summary

In conclusion, Concern's programme significantly improved food security in treated households. The number of meals eaten in the past 24 hours increased for adults and children. Most of them were eating only one meal at baseline, the majority is now having two meals a day. Months of hunger decreased massively as well, by more than 4 months in treated groups. Finally, the dietary diversity of adults and children increased: adults added two food groups to their diets, children had almost one more food group by the end of the programme.

The different treatments had comparable impacts on all outcomes but two; months of hunger and adults' dietary diversity. The reduction of months of hunger was greater in T1 households in Kirundo (the worse-off province) than for T2 households.

# 13. COPING STRATEGIES

A series of questions about how households respond to having insufficient food or income was asked at baseline and endline. They referred to 15 'coping strategies' such as purchase food on credit' or 'send household members to beg' and respondents were asked to indicate how frequently they engaged in this strategy (from 'every day' to 'never'). The questions were framed as follows: 'In the past 30 days, if there have been times when you do not have enough food or money to buy food that you usually eat, how many times per week have you had to: […]?' The type of strategies a household adopts, as well as their frequency of use, provides information about the preferred methods used to cope with hunger in each household.

Some coping strategies were widely adopted at baseline: more than half of all households reduced the number of meals eaten in a day, every day of the week. More than half of the households also relied on less preferred and less expensive foods every day. Figure 68 shows the share of households having adopted a given coping strategy 'every day' at baseline. Table 62 indicates a general shift towards less frequent use of coping strategies for household participating in the programme.

**Figure 68. Prevalence of coping strategies at baseline, by treatment status**

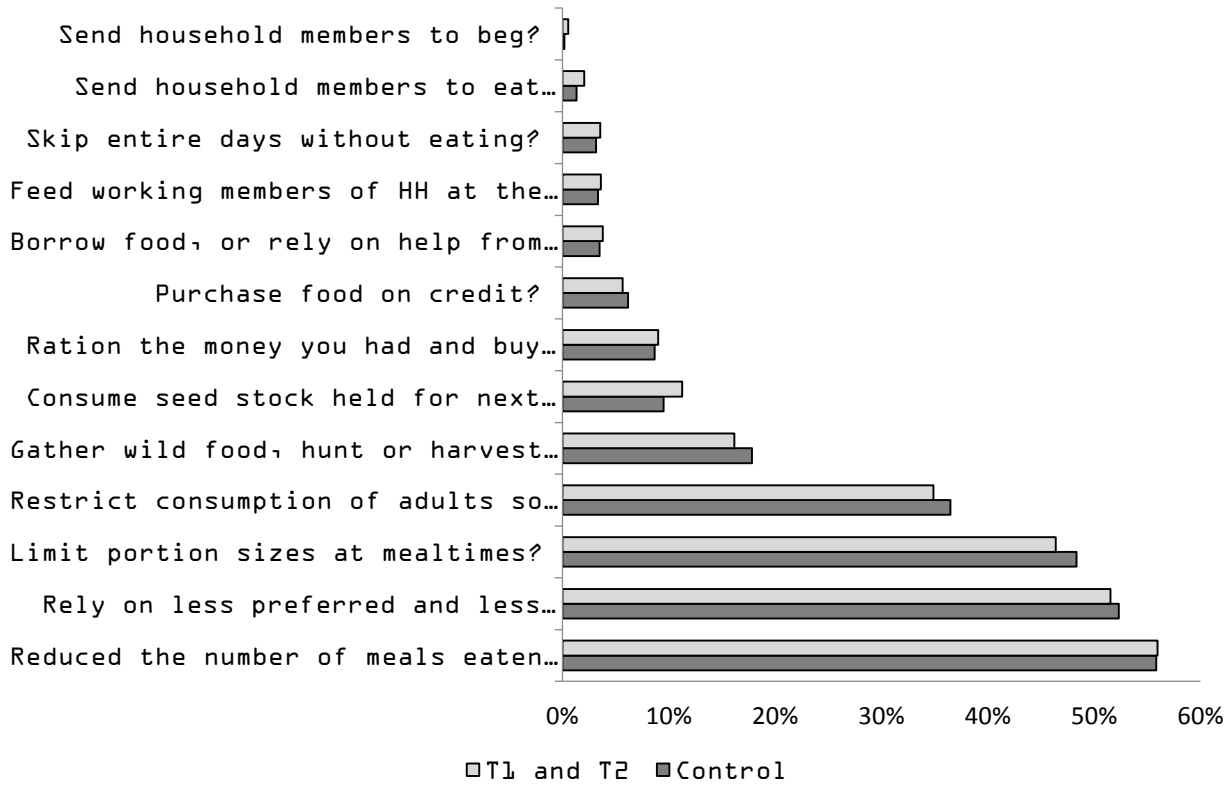


**Table 62. Uses of coping strategies, at baseline and endline**

| | | Baseline, all groups (%) | Endline, control group (%) | Endline, treatment groups (%) |
|---|---|---|---|---|
| Rely on less preferred and less expensive foods? | Everyday | 51.73 | 35.32 | 10.29 |
| | 3 to 6 times a week | 27.58 | 34.39 | 18.25 |
| | Twice per week | 11.96 | 14.5 | 24.94 |
| | Once a week | 5.85 | 11.34 | 24.23 |
| | Never | 2.88 | 4.46 | 22.29 |
| Borrow food, or rely on help from friends or relatives? | Everyday | 3.73 | 2.6 | 0.44 |
| | 3 to 6 times a week | 14.88 | 7.81 | 1.38 |
| | Twice per week | 23.58 | 19.14 | 3.98 |
| | Once a week | 19 | 22.49 | 18.25 |
| | Never | 38.81 | 47.96 | 75.94 |
| Purchase food on credit? | Everyday | 5.77 | 1.67 | 0.33 |
| | 3 to 6 times a week | 21.12 | 19.33 | 6.08 |
| | Twice per week | 28.04 | 34.76 | 23.95 |
| | Once a week | 20.69 | 21 | 33.57 |
| | Never | 24.38 | 23.23 | 36.06 |
| Gather wild food, hunt or harvest immature crops? | Everyday | 16.54 | 5.95 | 2.32 |
| | 3 to 6 times a week | 12.12 | 8.55 | 2.54 |
| | Twice per week | 11.77 | 14.31 | 4.09 |
| | Once a week | 10.88 | 16.91 | 9.85 |
| | Never | 48.69 | 54.28 | 81.19 |
| Consume seed stock held for next season? | Everyday | 10.85 | 6.13 | 3.48 |
| | 3 to 6 times a week | 4.38 | 9.67 | 3.6 |
| | Twice per week | 6.88 | 18.4 | 8.19 |
| | Once a week | 13.77 | 18.96 | 19.52 |
| | Never | 64.12 | 46.84 | 65.21 |
| Send household members to eat elsewhere? | Everyday | 1.88 | 0.74 | 0.06 |
| | 3 to 6 times a week | 6.27 | 4.83 | 0.44 |
| | Twice per week | 11.46 | 7.99 | 0.44 |
| | Once a week | 11.58 | 11.71 | 2.32 |
| | Never | 68.81 | 74.72 | 96.74 |
| Send household members to beg? | Everyday | 0.46 | 0.93 | 0.06 |
| | 3 to 6 times a week | 2.19 | 1.86 | 0.11 |
| | Twice per week | 5.46 | 3.72 | 0.33 |
| | Once a week | 5.38 | 7.25 | 0.55 |
| | Never | 86.5 | 86.25 | 98.95 |
| Limit portion sizes at mealtimes? | Everyday | 46.85 | 14.13 | 3.37 |
| | 3 to 6 times a week | 14.92 | 16.17 | 5.92 |
| | Twice per week | 15.62 | 19.52 | 10.84 |
| | Once a week | 8.69 | 17.47 | 19.25 |
| | Never | 13.92 | 32.71 | 60.62 |

| | | | | |
|---|---|---|---|---|
| Restrict consumption of adults so children can eat? | Everyday | 39.32 | 11.52 | 2.82 |
| | 3 to 6 times a week | 16.34 | 15.8 | 7.63 |
| | Twice per week | 15.09 | 20.07 | 10.34 |
| | Once a week | 7.12 | 11.15 | 15.21 |
| | Never | 22.13 | 41.45 | 63.99 |
| Feed working members of HH at the expense of non-working members? | Everyday | 3.54 | 0.37 | 0 |
| | 3 to 6 times a week | 0.96 | 0.19 | 0.22 |
| | Twice per week | 1.35 | 1.12 | 0.33 |
| | Once a week | 1.19 | 1.12 | 0.94 |
| | Never | 92.96 | 97.21 | 98.51 |
| Ration the money you had and buy prepared food? | Everyday | 8.92 | 0.37 | 0.17 |
| | 3 to 6 times a week | 3.73 | 1.86 | 0.22 |
| | Twice per week | 6.27 | 3.53 | 1.11 |
| | Once a week | 6.31 | 5.76 | 3.82 |
| | Never | 74.77 | 88.48 | 94.69 |
| Reduced the number of meals eaten in a day? | Everyday | 55.92 | 21.93 | 4.31 |
| | 3 to 6 times a week | 14.23 | 21.93 | 7.85 |
| | Twice per week | 15.77 | 27.7 | 15.49 |
| | Once a week | 6.85 | 15.06 | 23.67 |
| | Never | 7.23 | 13.38 | 48.67 |
| Skip entire days without eating? | Everyday | 3.46 | 0.74 | 0.11 |
| | 3 to 6 times a week | 14.96 | 9.67 | 0.33 |
| | Twice per week | 40.27 | 22.3 | 3.54 |
| | Once a week | 29.15 | 27.7 | 9.85 |
| | Never | 12.15 | 39.59 | 86.17 |
| n | | 2600 | 538 | 1808 |

We use the Coping Strategy Index (CSI) to assess whether the programme had an impact on overall use of coping strategies. The CSI summarises household coping behaviour in a single summary indicator by combining the number of strategies adopted by the intensity of their adoption. The following methodology was used to calculate the CSI for each surveyed household (derived from Maxwell and Caldwell, 2008).

1. Each coping strategy was assigned a score reflecting the number of days a week it was used: never adopted was given 0; once a week scored 1; twice a week scored 2; 3-6 times a week scored 4 and every day scored 7.

2. Severity weights were used to multiply the score for each coping strategy – e.g. “Rely on less preferred and less expensive foods” is not considered a severe adjustment so is weighted only 1; but “Send household members to beg” is a social disgrace so is weighted 4.[16]

3. The scores were then summed to produce an index value for the CSI for each household.

[16] Following the methodology used at baseline, “Gather wild food, hunt or harvest immature crops”, “Send household members to beg” and “Reduced the number of meals eaten in a day” were given a weight of 4. “Consume seed stock held for next season” was given a weight of 3. “Borrow food, or rely on help from friends or relatives”, “Purchase food on credit”, “Send household members to eat elsewhere”, “Restrict consumption of adults so children can eat”, “Feed working members of HH at the expense of non-working members” and “Ration the money you had and buy prepared food” were given weights of 2.

In line with the methodology used at baseline, three coping strategies were not included in the index: “Skipping entire days without eating”, “Selling household items to purchase food” and “Selling livestock or farm implements to purchase food)”. The resulting index can theoretically take values from 0 (no coping strategies adopted) to 189. It actually ranges from 0 to 173 in our data.

The *Terintambwe* programme had a significant and large impact on the CSI and therefore use coping strategies to purchase food. The programme decreased the CSI by 23 points for T2 households and by 25 points for T1 households. The difference in impact between T1 and T2 households is not significant.

**Figure 69. Evolution of CSI over time, by treatment status**

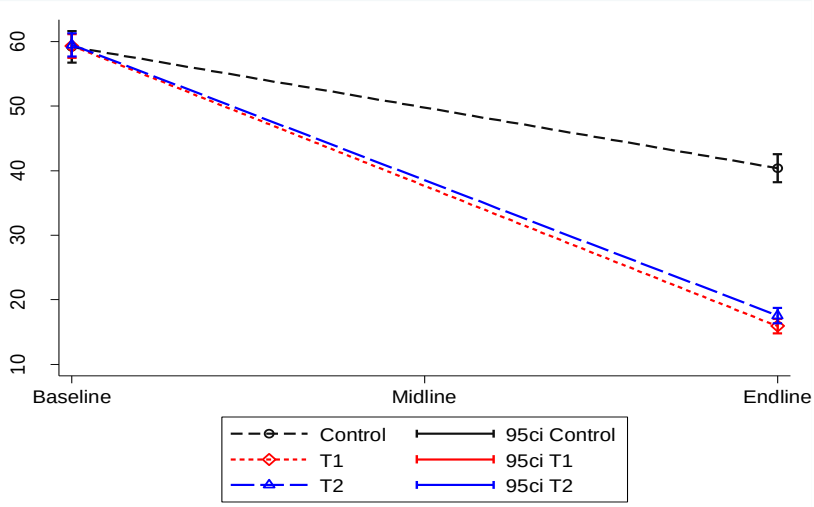



**Table 63. Average treatment effect on CSI**

| Cibitoke | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
|---|---|---|---|---|
| T1 vs C | - | -26.187*** | - | - |
| T2 vs C | - | -26.705*** | - | - |
| Sig. Test T1 vs T2 | - | ns | - | - |
| **Kirundo** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | - | -22.930*** | - | - |
| T2 vs C | - | -19.396*** | - | - |
| Sig. Test T1 vs T2 | - | ns | - | - |
| **Total** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | - | -24.720*** | - | - |
| T2 vs C | - | -23.318*** | - | - |
| Sig. Test T1 vs T2 | - | ns | - | - |

# 14. WOMEN'S DECISION-MAKING

Quantitative information about women's decision-making was obtained from a separate module of the questionnaire, administered to the senior woman in a sub-sample of households where a male adult making household decisions is also present. Indeed, women living without a male adult in the household indicated in the qualitative data that the programme had little impact on decision-making behaviour within the household. As indicated by women in T2 in Kirundo: *"There are no changes in decision making within our households. Most of us do not have husbands and we continued to be the ones deciding home"* [K-Ny-T2F]

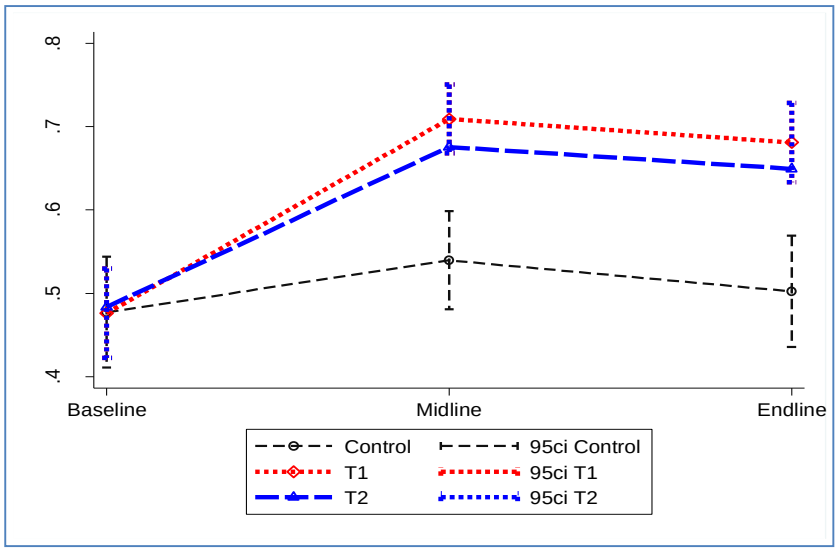
Women responding to this module in the quantitative survey were asked about household decision-making procedures in respect of control over income, children's wellbeing, farming, borrowing, and women's participation in community activities, and about who makes decisions on these matters: the women, the male adult or jointly. The qualitative component of the evaluation collected information on changes in household decision-making from both women and men.

Quantitative findings show that there has been a large shift from unilateral to joint decision-making across the board. When considering questions about decision-making regarding money earned by the male adult and woman in the household (the only questions in this module that were also included in the midline survey), we can see that these shifts primarily took place from baseline to midline with a small insignificant decrease in joint decision-making from midline to endline. It might therefore be somewhat surprising that we find limited programme impacts on joint decision-making about income earned by the male adult (see Table 64 and Figure 70), particularly in Kirundo. This lack of impact can be explained by the fact that control group households have also experienced a significant shift towards joint decision-making. There are no significant differences between T1 and T2.

**Table 64. Decisions on money earned by male adult are made jointly**

| **Cibitoke** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
|---|---|---|---|---|
| T1 vs C | 0.225*** | 0.230*** | 0.005 | sustained increase |
| T2 vs C | 0.187** | 0.108 | -0.079 | sustained increase |
| Significance test T1 vs T2 | ns | ns | ns | |
| **Kirundo** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | 0.095 | 0.105 | 0.010 | no impact |
| T2 vs C | 0.046 | 0.149* | 0.103 | sustained increase |
| Significance test T1 vs T2 | ns | ns | ns | |
| **Total** | **Baseline-Midline** | **Baseline-Endline** | **Midline-Endline** | **Trend** |
| T1 vs C | 0.164*** | 0.173*** | 0.011 | sustained increase |
| T2 vs C | 0.121** | 0.126** | 0.009 | sustained increase |
| Significance test T1 vs T2 | ns | ns | ns | |

**Figure 70. Decisions on money earned by male adult are made jointly**




The shift towards joint decision-making for treatment and control groups is not limited to income earned by the husband but can be observed in other areas of decision-making. In terms of deciding whether or not to take a sick child to the clinic, for example, the proportion of women deciding on this issue by herself was 53% at baseline and decreased to 12% at endline. This compares to 11% of cases at baseline in which men were the main decision-makers and 9% of cases at endline. As indicated by a male T2 participant in Kirundo: *"Now we make decisions together with my wife and we decide together about our children's education"* [K-Ny-T2M]. A shift from sole decision-making by women to joint decision-making in terms of child rearing suggests a reduction of the burden of care on women.

It has to be noted that shifts towards joint decision-making do not necessarily reflect a move towards sharing care or mean that women have gained greater autonomy. Particularly in areas of financial decision-making, women appear to have lost autonomy to men. With respect to decisions regarding credit, for example, at baseline 50% of women in treatment households indicated that decisions were made by women, 30% of women indicated that decisions were made jointly and 20% of women said that decisions were made by men. This compares to 8% decision-making by women, 60% joint decision-making and 32% decision-making by men at endline.

It should be noted that regardless of whether the observed impacts are desirable or not, this evidence of high impacts should be interpreted with caution: programme participants have been told by case managers that joint decision-making is preferred and as data collection was undertaken by case managers, there is a strong risk of response bias.

Analysis of qualitative information confirms the programme's impact on decision-making processes in households with male and female members and highlights the important role of case managers in supporting this message and solving any household tensions regarding decision-making. A male participant from Kirundo said: "*We used to dispute about who would go to work but since Terintambwe started we decide together about what we do. The case manager has provided us advice that helped us improve our relationship."* [K-Ny-CT2M] Some women also indicate that contributing to household resources has provided them with greater

leverage within household decision-making and has lessened tensions, such as this female participant from Cibitoke: *"Before the programme starts, we were so poor that it constantly caused tensions between my husband and me. Indeed, sometimes my husband would go to have a drink yet we did not have food at home and we would often fight. Since I started IGAs, there is better communication between us because I earn an income and contribute to providing for my family; even though he goes to drink we still have food at home. The case manager also helped us improve our relationship. Now we tell each other how much we make per day and make decisions together."* [C-Ma-T2F] In some cases of household tensions, women were made the primary recipients of the cash transfers as opposed to the men (see also Box 5).

**Box 5. Case managers' experiences with household tensions and decision-making**

Respondents indicated how case managers were vital in supporting changes in decision-making processes and helping to solve any tensions. Case managers themselves also shared their experiences regarding support to households:

*"'The husband of a beneficiary used to misbehave especially in regards to having a lot of women in his life. The beneficiary managed to build a house and the husband started to maltreat her so that she leaves and he brings in another woman but we intervened and provided them advice, the administration at the colline level helped as well to sort out the problems and now they are back together."* [K-Si-CM]

*"I have a beneficiary who has 2 wives; he was the one receiving the monthly cash transfers but he did not share it with the official wife, which caused tensions. I helped them sort out the problem and the first/official wife started being the one receiving the money. The tensions still arise once in a while, church leaders sometimes help in providing advice and some improvements were made."* [C-Mu-CM]

# 15. SOCIAL CAPITAL

This research attempted to measure programme impacts on social capital, using the household's engagement in various community institutions and social activities as a proxy for social capital. The baseline, midline and endline surveys focused on three institutions – school management committees (SMC), community health committees (COSA), and disaster risk reduction (DRR) meetings. For the baseline and endline surveys we also have information about membership of cooperatives or community associations, whether they attend meetings of cooperative or community associations, and attendance at weddings or other social ceremonies. The qualitative research component included more open-ended questions about feelings of social inclusion and respect within the community, participation in social events, informal support networks, reciprocal behaviour and changes in self-esteem.

For attendance to meetings, either SMC, COSA or DRR, individuals were asked to respond if they attend these meetings always, sometimes or never. We recoded this variable to capture the likelihood that individuals participate in these meetings always and measure the changes of time on the participation of beneficiaries relative to control group. Results indicate that:

- An increase in the likelihood to always participate in meetings from baseline to midline for beneficiaries in both Cibitoke and Kirundo relative to control group.
- Between midline and endline, there is no further increase in the likelihood to always participate in SMC for beneficiaries relative to control group in Kirundo or Cibitoke. Therefore, we found a sustained increasing trend.
- In terms of participation in COSA meetings, we found that, on average, the likelihood to always participate declined between midline and endline (see Figure 71). But beneficiaries remained at a higher likelihood to always participate relative to control group. In terms of differences in provinces, beneficiaries in Cibitoke from T1 actually increased their participation between midline and endline in COSA meetings, whereas beneficiaries from T1 in Kirundo decreased their participation in COSA meetings between midline and endline.
- For DRR meetings, beneficiaries actually increased their likelihood to always participate in these kinds of meetings between midline and endline, indicating an upward increasing trend (see Figure 72).

**Figure 71. Proportion of households that always participate in COSA meetings over time**

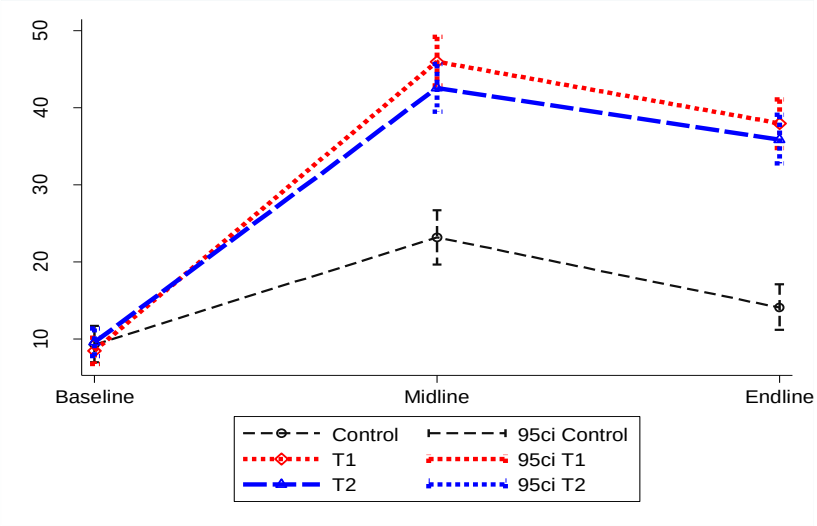
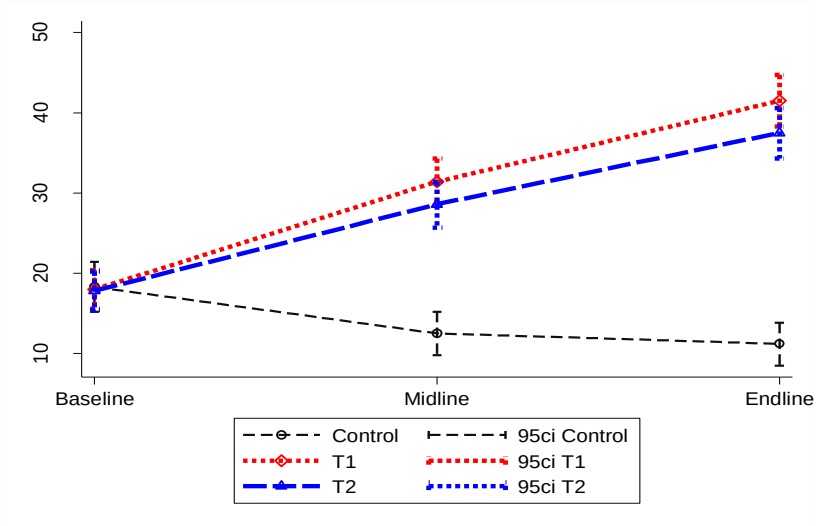



**Figure 72. Proportion of households that always participate in DRR meetings over time**




For attendance to ceremonies, cooperative membership and attending meetings organised by the cooperative, we only have two points in time, baseline and endline. For attendance to ceremonies, the variable for participation was recoded to capture the likelihood to always participate in these kinds of meetings. For attending meetings organised by cooperatives, the variable was also recoded to indicate “yes, attendance when a meeting is organised”. Results show that:

- The likelihood to always attend a ceremony or social event increased between baseline and endline for both beneficiaries relative to control group in both provinces. There are no differences in the likelihood to always participate between beneficiaries in T1 and T2 (see Table 65).
- Once beneficiaries and control group are members of cooperatives, we did not find an increasing likelihood to participate in meetings organised by cooperatives in favour of

beneficiaries. There is, though, as indicated by Figure 73, a slight increasing trend over time, which at the point of data collection during endline was not statistically significant.

**Table 65. Relative change in likelihood to participate in ceremonies and likelihood to be member of cooperatives over time**

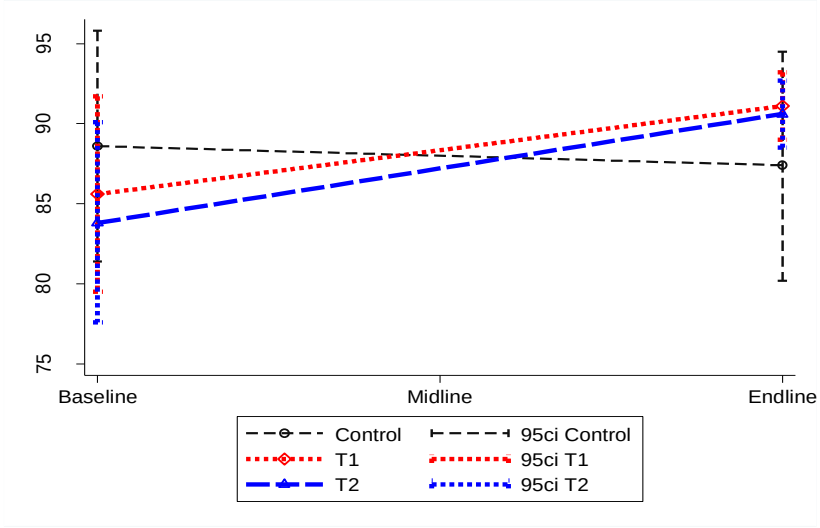
**Ceremonies:**

| | Treatment Effects | | | |
|---|---|---|---|---|
| Cibitoke | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | - | 0.218*** | - | Upward |
| T2 vs C | - | 0.251*** | - | Upward |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| Kirundo | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | - | 0.177*** | - | Upward |
| T2 vs C | - | 0.203*** | - | Upward |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| Total | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | - | 0.199*** | - | Upward |
| T2 vs C | - | 0.228*** | - | Upward |
| Sig. Test T1 vs T2 | ns | ns | ns | |

**Cooperative membership:**

| | Treatment Effects | | | |
|---|---|---|---|---|
| Cibitoke | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | - | 0.686*** | - | Upward |
| T2 vs C | - | 0.696*** | - | Upward |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| Kirundo | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | - | 0.598*** | - | Upward |
| T2 vs C | - | 0.605*** | - | Upward |
| Sig. Test T1 vs T2 | ns | ns | ns | |
| Total | Baseline-Midline | Baseline-Endline | Midline-Endline | Trend |
| T1 vs C | - | 0.643*** | - | Upward |
| T2 vs C | - | 0.651*** | - | Upward |
| Sig. Test T1 vs T2 | ns | ns | ns | |

**Figure 73. Proportion of households who participate in meetings organised by cooperatives over time**




The qualitative research asked respondents about changes since the start of the programme, thereby capturing changes across the entire programme period rather than differentiating between the periods from baseline to midline and from midline to endline surveys. The majority of control group members indicated that they experienced no changes in participation in meetings on their behalf, with most not participating in meetings. Some indicate to being invited but either not finding the meetings useful or too expensive to attend: *"I went once to their meetings but I found out that I will not be able to afford it"* [K-Ny-CG].

Respondents from high- and low-treatment groups as well as Concern case managers indicate that programme participants are now being invited to meetings and more confident to attend meetings due to having better clothing to wear but also feeling more respect and having greater awareness of the importance of meetings following programme participation. A female T2 participant in Cibitoke said: *"I was recently chosen to be part of the women committee of the commune level because of my level of education compared to my peers, which enabled me to become an active person in the community. Terintambwe has also helped me dare to speak up in public confidently which was the other reason I was selected in the committee. I am also the leader of our SILC group*" [C-Bu-CT2M]. Some respondents indicated to have become chefs of their sous-collines (Nyambakumi), although they weren't sure whether this could be attributed to programme participation: *"I am Nyumbakumi now although I am not sure whether or not it is related to the fact that I am in Terintambwe. However I do not think I would have been chosen if I had the same clothes as before Terintambwe started*" [K-Si-T1F].

One case manager also indicated that programme participants are sometimes excluded from community meetings or processes because they are receiving programme support: *"Sometimes* [programme participants*] are refused to participate because they are beneficiaries. But we sensitise the administration to treat fairly the beneficiaries whenever we have an occasion to do so*" [K-Si-CM].

The qualitative data confirm the strong positive impact of the programme on participation in social events, both due to participants receiving more invitations and being more proactive in joining meetings. Various reasons were put forward, including the ability to make financial

contributions to social events, receiving more respect within the community, being able to wear nicer clothing, and having more time given the shift away from agricultural day labour. The shift in the ability to make contributions is illustrated by a male participant from Cibitoke: *"In regards to social events, before Terintambwe starts I would go to social events only because I was helping someone to carry heavy cans of banana juice. Now, I am not only invited but I also take a can of banana juice that I bring as my family's contribution."* [C-Bu-T1M] and female participant from Kirundo: *"We are now more invited in meetings and social events however we used to not attend such events because we were ashamed of our appearance; we had dirty clothes. Today we attend more events."* [K-Si-T2F]

In terms of broader social cohesion, respondents generally indicated how the programme improved social status of participants as a result of improved living conditions and appearance, as illustrated by examples from two female participants: *"People used to mock me because I lived in a house covered with grass but since I built a better house they stopped and respect me."* [C-Bu-T2F] and "*One of my neighbour used to laugh at my children saying that she is the one who feeds them however since the start of Terintambwe she has stopped and my children are well regarded because our living standards have significantly improved."* [K-Ny-T2F] The level of respect also appears to depend on the extent to which the participant made visible progress, with community members considering the participant to be more respectable when having made considerable progress. *("Now, even respected people come to my house"* [C-Bu-TiM].)

Some participants indicated not to have experienced a change while others indicated that programme participation may have led to jealousy on behalf of other community members, undermining the level of respect. A male participant from Kirundo says: *"People do not regard me well because according to them I receive a salary from Terintambwe"* [K-Ka-CT1M]. A Concern supervisor remarked: *"There are some jealousies from some community members who are angry that they were not involved in Terintambwe – this showed through unpleasant comments they make"* [C-Ma-CS]. Jealousy appears to have been most substantial at the start of the programme and that participants and case managers have found strategies to address such jealousy. A few respondents shared specific experiences, including a male participant from Cibitoke:

*"There are some jealousies among other community members. I have been threatened once because I am the treasurer of our SILC group. The group is planning to change the location of where we put the box containing the savings in cash but also we decided to give loans to members who request it so that only a small amount remains in the box. As for those who make unpleasant comments, we remain silent as the case manager advised us."* [C-Bu-T2M]

Findings with respect to changes in informal support mechanisms are mixed with some respondents indicating that the programme has promoted more informal sharing. This refers mostly to programme participants supporting each other but also to participants lending to or sharing with members of the control group. Others indicate that people have always helped each other informally and that this has remained the same.

Positive effects on social cohesion included a reported decrease in crime within communities, and less suspicion between neighbours. *("There were people who used to steal from others but because of Terintambwe they do not anymore; non-participants will no longer be worried of thieves thanks to the programme"* [K-Si-T2M].)

Indirect beneficiaries were created by participants becoming less dependent on others for assistance than before the programme. *("We used to bother our neighbours by borrowing from them what we did not have, but we do not anymore since we took part in the programme. They live more peacefully"* [C-Bu-T2F]; *"My children and I were living at my brother's house but since I participate in Terintambwe, we have moved to our place and so we are less of a burden to him"* [K-Ny-T2F].)

Instead, participants became more able to support others, creating a set of secondary beneficiaries. *("Some of the non-participants borrow money from us"* [K-Si-T1F]; *"My brother was able to pursue his studies because I pay school fees for him, due to Terintambwe that helped me"* [K-Ka-T2F].)

Overall the participants indicate to feel more confident as a result of the programme. The improved living standards, newly gained knowledge and skills, improved appearance, participation in SILCs and other groups and overall greater levels of respect within the community has fostered feelings of confidence and self-esteem.

# 16. PROGRAMME COMPONENTS AND IMPACTS

The 'graduation model' package is complex, but *Terintambwe* introduced additional components (such as the mobile phones and kitchen gardens) that made it even more complex, but potentially more effective. This chapter reviews the contribution made by each component of the package towards achieving the many positive impacts presented in earlier chapters of this report – while recognising that the interactions and synergies between several components are just as important as each component in itself.

## 16.1 Cash transfers

The cash transfers that Concern provided were used to finance many things, from daily needs such as food and groceries to household utensils and clothes *("The monthly cash transfers were very important for us, as we were able to acquire the basic items we were lacking for so long, such as pots and plates"* [C-Bu-T1F]; *"Now I wear nice clothes. Before the programme started, I looked like someone who lives in a bush"* [C-Mu-T2F]); to large expenditures such as housing. *("Terintambwe, through the cash transfers, enabled me to build my own house"* [C-Ma-T2M]; *"I did not have a house before Terintambwe starts and when it was raining we had to look for a shelter with my child. When we started receiving the monthly cash transfers, I was able to save money and I bought metal sheets and doors and now we have a home. I do not fear rain anymore"* [C-Mu-T1F]).

Note that purchases of consumer goods like kitchen utensils and clothes should not be dismissed as wasteful spending, as they also enhance participants' wellbeing in various ways. *("I do not have my hands and fingers burnt anymore, because I have purchased plates and pots at home"* [K-Si-T1F]; *"Terintambwe has given me back my dignity. We were very poor but now we have nice clothes like others; people do not laugh at me anymore"* [C-Ma-T2M].)

Cash transfers were also invested: in children's education *("I had two children in school and it was very hard for me to pay for their school fees, but I was able to do so because of the cash transfers"* [K-Ny-T2F]); in acquiring productive assets *("Cash transfers were the most important for me as they enabled me to buy a land"* [K-Ka-T1F]; *"I bought pigs and rented land that I cultivate using the cash transfers"* [C-Mu-T2F]); and in micro-enterprises *("The monthly cash transfers were very useful as I was able to make savings that I used to start my business of bananas"* [C-Bu-T1M]).

The injection of cash transfers and other resources into rural communities had positive multiplier effects on local economies. *("We do purchase products we need from non-participants; we have become their clients but before Terintambwe we could not afford some of the items they sell"* [C-Bu-T2M]; *"Some of the non-participants we hire to help with our agricultural activities"* [K-Si-T1M].) One ambivalent effect was reported on local casual labour markets. *("Those whom we used to work for sometimes have shortage of labour since we are not available anymore"* [K-Si-T1F].) However, similar effects in other countries – e.g. following the introduction of the 'employment guarantee scheme' in India – have been interpreted as poor agricultural labourers gaining more bargaining power *vis-à-vis* their employers, with positive implications for rural poverty and inequality.

## 16.2. Asset transfers/ income-generating activities

A core component of 'graduation model' programmes is the transfer of a productive asset such as livestock or land to participants, which is intended to generate sustainable flows of future income. *Terintambwe* deviated from the general model by giving participants a sum of money in three instalments instead of a physical asset, to be invested in an income-generating activity (IGA) selected from a list of livelihood activities that were supported by Concern.

Before *Terintambwe*, many participants mentioned "working on other people's fields" as their main livelihood activity, though several already had small businesses, such as selling maize, fish or banana juice. The 'asset transfer' component enabled a significant proportion of participants to stop doing agricultural labour for a living and to develop their own livelihood activities, or start new businesses, instead. *("I was cultivating for others but not anymore because Terintambwe has enabled me to have other sources of income"* [K-Ny-T1F]. This shift towards self-employment was welcomed by *Terintambwe* participants in Burundi. *("I am very happy that I do not work for others anymore"* [C-Bu-T1M]; *"Before Terintambwe, if I needed anything such as shoes or clothes I had to work for someone, but now my business enables me to buy what I need anytime"* [C-Bu-T1F].)

An 'employment multiplier' effect was observed, with many participants hiring other people, either to work with them in their *Terintambwe*-supported income-generating activity *("We both hire labour, especially for transporting bananas and for making banana juice. We started when we were given the first asset transfer"* [C-Bu-T2M]); or to work on their farms while the participants conduct their business activities *("We also hire labour to help my wife and I cultivate; I have a small land so I rent a bigger one that we exploit. We started hiring labour since the beginning of the programme"* [K-Si-T2M]). These participants have not only achieved self-reliance, they have shifted from being net sellers to net employers of labour.

## 16.3. Training, coaching and support

The training, coaching and support that are provided to participants on 'graduation model' programmes, both in groups but especially at the household and individual levels, have often been characterised as the 'X-factor' that is responsible for achieving the impressive and sustainable results in Bangladesh and elsewhere. Accordingly, Concern Burundi invested a great deal of staff time and effort in developing and delivering training sessions and in building personal relationships between Concern case managers and each participating household.

Training sessions were undertaken at community level and involved all high (T1) and low (T2) treatment group participants at the same time. According to monitoring survey data, most formal training sessions ran for 1-2 hours while some ran for longer than 2 hours. Participants' feedback was very positive.[17] The trainers received 99% approval ratings for providing "clear explanations". In almost all cases the trainers were praised for being "very knowledgeable" (69%) or "knowledgeable" (31%) on the training topics. The training objectives were assessed by all participants as either "very clear" (69%) or "clear" (31%). All participants said that they

[17] Note that this information was collected in the monitoring surveys, which was administered by Concern case managers. These findings may therefore be subject to response bias.

understood the information provided “very well” (64%) or “well” (34%), and they all agreed that the training was “very relevant” (67%) or “relevant” (33%). Overall, participants valued the range of learning they acquired. *(“I have also gained a diversity of knowledge because of Concern”* [K-Si-T2M].)

It is important to emphasise that the training sessions did not only provide ‘regular’ training on livelihood-related topics such as financial literacy and how to run a small business. There were also awareness raising sessions around ‘life skills’ topics such as nutrition and hygiene *(“Trainings on how to have a balanced meal and why we should wash hands before eating so that we remain healthy”* [C-Mu-T1M]). Moreover, there were sessions that discouraged anti-social behaviour, such as gender-based violence and drinking. Sometimes called ‘behaviour change communication’ (BCC), these sessions also appear to have had significant impacts on some participants’ lives. *(“I also used to drink a lot and the meetings we had in Terintambwe helped me realize that my drinking habits are not good and that they prevented my family from becoming well off. Today I rarely drink”* [K-Si-T1M].)

The training modules delivered show a clear progression or sequencing over time. In Table 66, training sessions are ranked by the number of participants reporting that they received this training in the month preceding the monitoring survey. In August 2013, for instance, 76% of respondents reported receiving adult literacy training, but only 17% recalled receiving training on managing their cash transfers. In the early stages, most sessions were conventional training and information sharing (adult literacy, health access, managing cash transfers, disaster risk reduction). Then ‘BCC’ sessions were introduced (WASH/ hygiene, HIV and AIDS, gender-based violence). Before and after the IGAs were launched in mid-2014, attention shifted towards livelihood-promoting trainings (savings and financial literacy, running the IGAs, business training – these are highlighted in Table 66).

The fact that participants valued appreciated the training they received was evident in requests for more training. *(“It would be better if we were provided with more training sessions; they are very useful”* [K-Ny-T1M]; *“Concern should insist on providing more trainings as it enables participants to gain knowledge on a diversity of things”* [K-Ka-T1M].)

A particular focus of the *Terintambwe* programme was to consider the impact of coaching and support in the form of home visits by *Terintambwe* case managers. For this reason the programme includes high (T1) and low (T2) treatment groups, with participants in the high treatment group receiving three home visits per month and participants in the low treatment group receiving one home visit per month. During these visits the case managers would follow up on issues discussed during the training sessions, on how households were using the cash and asset transfers, on progress with setting up IGAs and any other challenges with respect to the programme or of more personal nature. The home visits were also used to administer the monitoring surveys.

**Table 66. Training sessions provided to *Terintambwe* participants, August 2013 – January 2015**

| Month | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| **August 2013** | Adult literacy | Health access | WASH/ hygiene | Cash transfer | |
| **September 2013** | WASH/ hygiene | Adult literacy | Disaster risk reduction (DRR) | | |
| **October 2013** | Adult literacy | Disaster risk reduction (DRR) | WASH/ hygiene | HIV and AIDS | |
| **December 2013** | HIV and AIDS | Sexual + gender-based violence | Savings | | |
| **January 2014** | Savings | WASH/ hygiene | Adult literacy | Disaster risk reduction (DRR) | |
| **February 2014** | Savings | Adult literacy | Selected IGA/ asset transfer | WASH/ hygiene | Business training |
| **September 2014** | Selected IGA/ asset transfer | Business training | WASH/ hygiene | Savings | Education access |
| **November 2014** | HIV and AIDS | Business training | Disaster risk reduction (DRR) | WASH/ hygiene | |
| **January 2015** | Disaster risk reduction (DRR) | WASH/ hygiene | Business training | Savings | Kitchen gardens |

*Source: Compiled from monitoring survey data*

*Note: Numbers '1' to '5' reflect the topics of training delivered each month ranked by frequency of response*

*Terintambwe* participants greatly appreciated the advice and support provided during home visits. Participants indicated that they will miss the visits by the case manager when they come to an end but many also emphasised that they will be able to support themselves given the awareness and knowledge acquired: *"We will miss his pleasant visits but we have learned a lot from him and we will keep up the good work"* [C-Bu-T1M]. Others indicated that they fear moving backwards without the advice from case managers provided during home visits: *"The case manager's advices were very useful to myself and my husband and I am afraid that if the visits stops we may go backward"* [K-Ka-T2F]. Despite the smaller number of home visits provided to T2 participants, answers did not point towards a systematic difference in experiences with home visits between T1 and T2 participants, offering an explanation for why we find no systematic differences in programme impact between T1 and T2 households.

## 16.4. SILC

The SILCs were established in April-July 2014, and almost immediately had major beneficial impacts on participants' lives and livelihoods. According to the monitoring data, 98% of participants had joined a SILC by July 2014. The few who did not join, or who later dropped out, mostly gave their inability to save because of poverty as the reason. *("I am not a member of SILC because I do not have enough money to keep saving"* [K-Ny-T1F].) The average size

of a SILC group seems to be about 18 members. Most SILC groups meet every week and almost all members (95%) contribute to their SILC every week, while a few (5%) contribute once every two weeks. The average contribution is around 4,000 BiF, of which about 3,000 BiF goes to the 'credit pot' and a smaller amount goes to the 'solidarity pot'. The habit of regular savings led to the accumulation of relatively substantial sums of money. *("I had never owned BiF 50,000 in my entire life but because of Terintambwe now I do"* [C-Bu-T1M].)

Borrowing from the SILC rapidly replaced borrowing from individuals as the main source of loans, mainly because of the lower interest rates and more flexible repayment terms offered by the SILCs. *("Before we participate in Terintambwe, we used to borrow money from individuals but we had to pay enormous interests. For instance when we were given BIF 10,000 we had to repay BIF 15,000 within a month, yet in SILC we only pay BIF 11,000 within the same period. In addition we also share interests we generate at the end of the cycle"* [K-Si-T1M]; *"Before SILC, we used to borrow money from individuals and we had to cultivate for them until the work done is worth the loans acquired' say the participants. Sometimes we had to mortgage a piece of land to get the loan"* [C-Ma-T1F].)

By the end of 2014, all participants had received a loan through their SILC's 'credit pot', and just over half (53%) had taken a loan in the previous two months. Average loan sizes ranged from 45,000 BiF for T1 participants in Cibitoke down to 22,000 BiF for T1 and T2 participants in Kirundo. The main reason given for requesting a loan was to invest in income-generating activities (87% of cases: *"We used the loans to increase capital and expand our business, or restart them in case we encountered challenges"* [C-Bu-T1M]; *"I received BiF 10,000 that I used to run my business of fish. I already repaid it"* [K-Si-T2F]). Other reasons included to purchase inputs for farming, to buy food or to pay for health issues (5-7% each). In a few cases each, the loan was used to pay for school fees, for social events (weddings, funerals), for house repairs, to pay off a debt, or to buy clothes.

Two in three loans (68%) were repaid to the SILC within two months, and most SILC members reported that they experienced little difficulty in making the repayments. In a few cases, however, businesses failed, leaving the SILC member indebted and struggling to repay. *("I requested BiF 10,000 and gave it to my wife to run a business, but it failed and now the interest has increased. I have to pay BIF 20,000. I am repaying it slowly"* [K-Ka-T1M].) A related challenge arises when the business fails to generate enough profit to repay the loan within the SILC cycle. *("SILC beneficiaries who sell bananas or banana juice often need more time for the business to generate profits and the time to reimburse often arrives before they have money to repay. We have advised them to pay back the loans in tranches so that they do not accumulate more interests"* [K-Ka-CM].)

Defaulting members was also given as the main challenge facing some SILC groups, though in most cases peer pressure and interventions by Concern staff seem to have been sufficient to manage the situation without the group collapsing. *("The only issue we complained about was people who were not repaying properly in SILC. The case manager advised us to find a way to make them pay. As a group we have agreed on measures to put in place, we have given them fines and now those people are paying slowly"* [C-Bu-T2M].)

There was a general consensus that the SILCs were one of the most important components of *Terintambwe* – as will be seen below, the main complaint raised is why they were not introduced earlier in the programme cycle. *("SILC is one of the most important components of*

*Terintambwe; it should always be included in the programme"* [C-Ma-T1M].) SILC members especially appreciated the borrowing facility, which gave them the reassurance that they would have access to cash for either business investments or personal crises whenever needed. *("Now I live without having to constantly worry about my finances, because of Terintambwe. In case I need anything I can borrow money in SILC"* [C-Bu-T1M].)

The 'solidarity pot' also provided useful support to SILC members through times of financial stress or personal trauma. *("I was sick and I did not have enough money to pay for hospitalization. I was given BiF 5,000 from the solidarity pot"* [C-Bu-T1F]; *"I received support from the solidarity pot. I had a miscarriage and the group gave me BiF 5,000"* [K-Ka-T2F].) These disbursement were made by the SILC groups either as an interest-free loan or as a gift (no repayment was required). So the SILCs promoted a form of financial inclusion and were also a source of social assistance in emergencies.

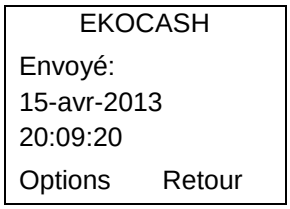
## 16.5. Mobile phone

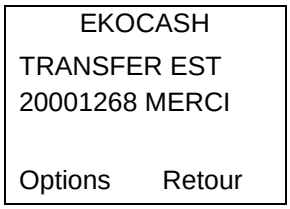
Mobile phones were provided to all participants, primarily to support the payment mechanism. When monthly cash transfer payments were made, participants received a text message informing them of how much money had been deposited into their Post Office accounts. Several concerns were raised about the use of mobile phones for this purpose, including the following:

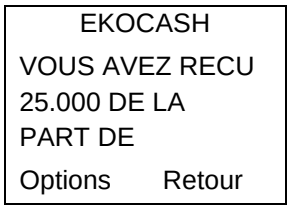
1. *The phones were redundant as payment mechanisms:* Since payments were made around the same time every month, and because news travels fast in local communities, and also because there were regular meetings between Concern staff and participants, there was no real need for each participant to be given a personal phone. Case managers could simply have informed participants when they should go to the Post Office to collect their money.
2. *Participants could not read the text messages:* Given the high levels of illiteracy among the programme participants, the written messages that appeared on the phone's screen could not be understood by most owners of these phones.
3. *Network coverage is erratic and patchy:* In several rural communities participants struggled to get a signal from the mobile phone network while at home, and in several cases they had to walk to specific spots where it was known that the signal was relatively strong.
4. *There is no electricity supply to charge the phones:* Participants needed to keep their phones charged, ready to receive the notification that their money had arrived at the Post Office, but there was no electricity supply and often no generators in the rural communities where most of them live.
5. *Operating the phones cost money:* Two costs were associated with operating the mobile phones: charging them and airtime. Charging the phones cost money (typically, 300 BiF per charge) that effectively reduced the net value of the cash transfers by this amount. Also, using the phones to send messages or make phone calls required buying airtime, which also cost money. (In Kirundo, selling airtime was even offered as one livelihood option under the 'asset transfer' component.)
6. *Participants feared their phones would be lost or stolen:* Giving relatively valuable items of technology to people who owned very little and living in communities

surrounded by poor neighbours, could be criticised as imposing quite an onerous burden of responsibility on them. Although payments were not made directly 'through' the phone – this was not a 'mobile money' payment mechanism – participants associated the phone with the cash transfers, and feared that they would be denied their cash if they did not bring the phone to the Post Office every month.

In practise, pragmatic solutions were found to most of these problems. Participants quickly learned what the text messages meant, and those who could not make sense of the words and numbers on the screen asked a friend or relative to explain these to them. One participant interviewed during the qualitative fieldwork received the following messages on her phone, which her son helped her to understand:




Generators at community meeting places such as local markets were used to charge phones. The cost was not prohibitive, and many participants only charged them once a month, just before they knew the next payment was due. Many participants hung the phone around their neck to keep it close to them at all times (even, in some cases, while sleeping). Nonetheless, some phones were lost or stolen, and others stopped functioning – they were broken or their batteries died and were not replaced.

Once these practical challenges had been overcome, the phones became seen by many recipients as a valuable part of the package of support in their own right. At least two participants who lost their phone bought a replacement, having learned the value of owning one. Several used their phones to make personal calls to family members and friends. *("I call friends who live in further places"* [C-Mu-T2F]; *"When you are sick you call them and let them know"* [K-Si-T1F].) Phones are recognised as an efficient and time-saving device. *("Mobile phones have helped us reach our people quickly, without having to walk for long distances"* [C-Bu-T2F].)

Some used the phone's other functions, such as the calculator (for calculating IGA costs and profits, or for children to do their maths homework) and the torch *("I bought another phone and gave my old one to my wife. She uses the torch when she is cooking"* [C-Ma-T2M].)

The phones also became important tools for conducting business. One case manager explained: *"Beneficiaries use phones in their business activities, especially those selling fishes because their clients are not from the neighbourhood and so they communicate by phone to make the deals"* [K-Si-CM]. Several participants gave examples of how their phone has facilitated their micro-enterprises and respond to business opportunities:

- *"I use my phone in my business activities. I order bananas from my supplier, which is easier for me to run my IGA"* [K-Ka-T1F]
- *"People call me to go and shave their hair at their places"* [K-Ka-T1M]

- *"When there is a job opportunity people can reach me easily to inform me about the work"* [K-Ka-T2M]
- *"I use my phone to locate where I can find goats to run my business of meat"* [K-Ka-T2M]
- *"I use my mobile phone in my business. Indeed I call my petrol providers in Tanzania, we make the deal and meet half-way, make the exchange and I come back and run my business. I also order other products from different providers using my phone"* [K-Si-T1M]

## 16.6. Kitchen garden

During 2014 Concern introduced kitchen gardens as an extra component of the *Terintambwe* programme. By the end of 2014 most participating households had set up a kitchen garden, almost universally in Cibitoke (96%) but with slower uptake in Kirundo (60%). The explanations given for not setting up a kitchen garden were mainly lack of appropriate tools and construction materials, while a few respondents said that they did not feel competent to do this, implying that more support with inputs and training might have been needed, especially in Kirundo.

About one in four kitchen gardens that had been established in Kirundo were no longer functional by November 2014, mostly because of lack of seeds. Almost all households planted amaranthus in their kitchen gardens (94%), more than half planted onions (57%), and smaller numbers planted cabbage (9%) and carrots (6%). Often the seeds came from friends, relatives or neighbours (58%), but often the participant purchased seeds (26%). The Red Cross also provided seeds in some cases (14%).

Vegetables are typically harvested once or twice a week, but sometimes even more frequently. Most respondents cooked and eat all of the vegetables harvested (92%), but in a few cases some of the harvest is sold to generate supplementary cash income (8%).

Participants recognised the value of the kitchen gardens, which appear to have impacted positively on their households' food security. *("The kitchen garden helps us to have easy access to food when we come home late."* [C-Bu-T2F]. *"We eat more vegetables because of the kitchen gardens and our children are healthier"* [K-Ny-T1F].)

## 16.7. Synergies and interactions

As noted above, *Terintambwe* achieved many positive impacts, not only through single components operating in isolation but through the combination of programme components working together, as one case manager explained: *"If they were given money without a supplement of coaching services and trainings they would have not achieved much. The latter two have therefore played an essential role in improving beneficiaries' incomes. Cash and asset transfers were as much important"* [K-Ny-CM].

For example, one behavioural change that the programme sought to achieve was improved hygiene and sanitation practices. This required a combination of group training, personal coaching, and cash transfers to pay for building latrines and buying soap. *("Trainings on*

*hygiene were vital to help us change behaviours and improve on sanitation and hygiene, and cash transfers enabled us afford soap whenever we need it"* [C-Mu-T1M].)

Chapter 11 revealed that *Terintambwe* has contributed to substantial improvements in food security among participating households. How have different elements of the programme contributed to this change?

- Cash transfers contributed to food security directly, through financing food purchases. *("Cash transfers helped us to have enough food"* [C-Bu-1M].) Cash transfers also contributed to household food security indirectly, by financing investment in farming (e.g. renting fields) to grow food for home consumption. *("Cash transfers played an important role because we used this money to buy or rent fields where we grow food"* [K-Si-T2M].)
- Asset transfers supported income-generating activities that generated income to buy extra food. *("Asset transfers helped us to earn an income and afford the food we need"* [C-Bu-T2F].)
- SILCs contributed to accumulating savings that could be drawn on to buy food, by providing loans for food purchases when needed. *("SILC provided loans to participants that they utilised to buy food at times when they did not want to use their capital for that purpose"* [K-Ny-CM].)
- Kitchen gardens allow easy access to food, especially vegetables, and support more diversified and healthier food consumption. The interaction between increased availability of nutritious vegetables and messaging about good nutrition in training sessions led to these improved diets. *("Kitchen gardens provide us with vegetables that enrich our daily meal"* [K-Ny-T2F].)
- Training on diet and nutrition also improved food security by encouraging participants to prepare balanced meals and diversified diets, also by advising participants on the importance of eating vegetables. *("Trainings on nutrition were very important because we were taught about how to prepare a balanced meal"* [C-Bu-T2F]. *"We learned about the importance of diversifying our diet through trainings we received"* [C-Bu-1M].)
- Coaching in money management caused some participants to reorient their spending priorities towards food security for their families. *("The coaching were very useful as I learned to use money more wisely. I do not waste it in bars but I have to ensure first that the family has enough food"* [C-Ma-T1M].)
- In turn, improvements in food security enabled improvements in other outcomes of interest, such as children's access to education. *("We used to have dinner only on days we were able to earn an income, otherwise we would spend the whole day without eating which often prevented children to go to school. However now we eat three times a day and my children are healthier and they attend school every day"* [K-Si-T1F].) Children who are well nourished are likely to perform better in school and have a better chance of growing up to escape poverty and food insecurity.

This example shows how different aspects of the *Terintambwe* combined to produce improved food security outcomes for participating households, both immediately and (hopefully) in the future.

## 16.8. Sustainability

By definition, giving money, assets and access to services to poor people makes them less poor. This is a programme effect, but the real test of programme impact is what happens after programme support is withdrawn. Will participants retain the benefits or will they dissipate over time? We can draw some preliminary conclusions on which benefits are more or less likely to be sustainable, from the feedback we collected during the qualitative fieldwork.

1. Housing: Many participants bought land and built their own house on it, or improved their housing, using resources received or income earned through participating in *Terintambwe*. *("I was able to build my own house because of Terintambwe"* [C-Ma-T1F].) This improvement in wellbeing is unlikely to be reversed.

2. Adult literacy: Some participants commented on the skills they had acquired through training sessions, such as literacy and numeracy. *("I will always remember Terintambwe because I was also able to learn to read and write. When I go somewhere now I cannot get lost because I can read the indication"* [C-Ma-T1F]; *"I learned to read and write. I used to take letters to somebody else to read them for me, but now I do not"* [C-Bu-T1F].) Although literacy and numeracy were not tested in the evaluation and are likely to be rudimentary at best, these are valuable skills with a range of applications that will probably not be lost.

3. Businesses: Through the asset transfer or IGA component, participants learned how to run a micro-enterprise, or how to run it more effectively, a skill which translates into higher and more reliable income. *("I have gained skills that I use to carry on projects and make money"* [K-Ny-T2F]; *"My IGA functions well and I will continue running the business even after the programme ends. The trainings we were provided were very useful; I will continue apply them to run my business"* [C-Ma-T2F].)

4. Education: Many children enjoyed improved access to schooling because of *Terintambwe*, which translates into improved attendance and performance. *("Beneficiaries' children are now educated"* [C-Ma-CS].) Education is an irreversible asset that will be beneficial to these children in adult life, and is arguably the most sustainable impact of all.

5. Health insurance: Community members learned the value of having a *mutuelle de santé* card thanks to *Terintambwe*. *("Sickness is unpredictable. I fell severely sick unexpectedly recently and because of the health card, I was taken to hospital where I spent few days. If I did not have it, I could have died"* [C-Ma-T1M].) Many will continue to buy it even without being encouraged by Concern to do so. *("We all have health cards and will continue purchasing them whenever necessary, as we know their importance"* [C-Bu-T1F].) This conclusion is supported by the fact that even control group households are now purchasing the health insurance cards. *("I have a health card. I made savings slowly until I bought it because I know how very useful it is – I pay less at hospital. I learned that through my interactions with the case manager"* [K-Si-CG].)

6. Income-generating activities (IGAs): Most participants insisted that they will continue to pursue their livelihood activities even after support from Concern ends. *("We acquired skills that we will continue to use and sustain the new livelihoods activities"* [K-Ka-T1F].) However, others recognised that their enterprises face challenges which

they might not be able to overcome on their own, without continued support. *("There is a probability that we will not continue our activities if the sun continues to be intense, because most of the profit we make is invested in agriculture and so the current situation is affecting our crops"* [K-Si-T2F].) Some Concern staff were cautious in their predictions about the sustainability of the livelihood impacts of *Terintambwe*. *("For some beneficiaries, incomes will be sustained but not for others, especially when coaching will stop, because of their attitudes – particularly those with a tendency to not listen to advice we give them"* [K-Ka-CM].)

7. SILCs: Financial inclusion (the habit of saving and the ability to borrow on reasonable terms) is expected to support resilience by increasing the ability of households to cope with shocks and life-cycle events. The enthusiasm reported for SILCs gives hope that they will continue to function even in the absence of encouragement and advice from Concern staff. *("In many cases I have found SILC to be the driver of programme sustainability. SILC is likely to lead to the sustainability of the changes. Indeed it creates a space for beneficiaries to stay together, and in the future they will keep reminding each other what changes they need to do"* [K-Ka-CS].) Participants themselves expressed their intention to continue their SILC. *("SILC will continue after Terintambwe ends. We will continue with the second cycle and if there are members who do not want to pursue the activity we will continue without them"* [K-Ka-T1M]; *"We are saving for a brighter future"* [K-Ka-T1F].)

# 17. PROGRAMME DESIGN AND IMPLEMENTATION

The *Terintambwe* programme was well designed and effectively implemented. Nonetheless, it faced challenges, some related to decisions taken at the design stage, others to how it was implemented – overall, or by individual case managers. This chapter reviews some of these challenges and lessons learned, drawing on the experiences and ideas of programme participants and Concern staff.

## 17.1. Design: Spillovers

*Terintambwe* households and control group households were drawn from the same communities: poor households were identified and then randomly assigned to either the 'high treatment' (T1), 'low treatment' (T2) or 'control' group. For impact evaluation purposes, this had the methodological advantage of ensuring that there were few significant differences between participants and non-participants at baseline on key indicators of interest. On the other hand, it had the methodological disadvantage that it created a context where 'spillovers' were inevitable.

Spillovers manifest in evaluation reports as reduced attributable impacts. For example, if 'treatment' households increase their use of soap when washing hands from 40% to 80% between baseline and endline, this looks like a major improvement – a doubling in hygienic practices, thanks to the programme. But if control households also increased their use of soap from 40% to 80% over the same period because they overheard what was said during the training sessions or spoke to programme participants (*"I have learned good hygiene practices from Terintambwe participants"* [K-Si-CG]), this is also equivalent to a doubling in access, so the attributable impact on treatment households falls from 100% to 0%. Spillovers may also occur as a result of a 'demonstration effect', for example with respect to building latrines: *"Some of my neighbours have also imitated me in building latrines"* [K-Ny-T2M]; *"I know three non-participants who have set up kitchen gardens, built latrines and they have also put in place the mechanism that facilitates to wash hands after using the toilet"* [K-Ny-T1M]. So a very positive finding becomes a disappointing one. There are many indicators in this report where a large improvement for treatment households must be 'discounted' to the extent that control households also registered improvements during the period of *Terintambwe* implementation. But in both these cases the actual programme impact is more than 100%, because the spillovers are also positive impacts attributable to the programme (i.e. actual beneficiaries exceeded intended beneficiaries).

Findings may also be subject to 'contamination', leading to changes in outcomes indicators for the treatment or control group members following an intervention external to the *Terintambwe* programme. For example, if the Ministry of Health had handed out soap or installed toilets in the community during the programme period, any improvements reported by the control group would not be due to the programme but to an external intervention instead.[18] Then again, the fact that all households in the communities have improved their access to hygienic sanitation facilities should be applauded, no matter which agency induced or facilitated this positive outcome.

[18] Note that this is a theoretical example; our qualitative data do not point towards large-scale external interventions or other factors that led to systematic contamination.

Respondents interviewed for this evaluation were well aware of the pervasive extent of spillover effects. All Concern case managers and supervisors agreed that the fact that the high treatment, low treatment and control group households were neighbours made these spillovers unavoidable:

- *"The difference in impact might not be very noticeable because T1 and T2 beneficiaries are neighbours and are friends. So they exchange information. In addition, whenever T2 households notice a positive change from T1 participants they imitate them"* [C-Bu-CS]
- *"T1 and T2 beneficiaries are neighbours and they share information. Hence coaching services provided to T1 beneficiaries are spread to T2 participants as well who then they apply the same changes"* [K-Ny-CS].
- *"Some control groups members are often with other beneficiaries in SILC groups for instance so they feel part of Terintambwe and learn from the programme participants"* [K-Ka-CS].
- *"There are non-participants who ask beneficiaries about what they learned in meetings and they put it into practice as well"* [C-Mu-CM].

An unintended consequence of separating *Terintambwe* participants into 'high' and 'low' treatment is that it might have caused competition between the two groups, while control group households also intensified their efforts to keep pace with the progress occurring among their neighbours. This 'healthy competition' effect (also referred to as the 'John Henry effect') was observed by Concern supervisors in both provinces:

- *"When T2 participants notice that they are only visited once they become more competitive and want to demonstrate that they are as good as T1 participants who are visited twice. T2 beneficiaries are afraid of being removed from the programme if they do not perform well."* [C-Ma-CS].
- *"Although T1 beneficiaries are more advanced in regards to knowledge, there are cases where T1 beneficiaries are far behind from T2 participants, yet the latter did not benefit from coaching services. Especially due to competition, T2 beneficiaries sometimes work harder to prove that they can do better despite that they were not coached"* [K-Ka-CS].
- *"People imitate each other and when a neighbour who used to be like you evolves, you do all you can to not stay behind. That is what is happening with the control group"* [C-Ma-CS].
- *"Non-participants have imitated beneficiaries in hygiene as they have seen how participants who used to be like them have changed in that regard and they do not want people to make fun of them anymore because of their appearance, and so a number of non-beneficiaries have adopted good hygiene practices as well"* [K-Ny-CM].

Another unintended source of bias might have been the very process of being observed through monitoring surveys themselves (also referred to as the 'Hawthorne effect'). According to one Concern supervisor, this gave respondents 'clues' about what behavioural changes the project was hoping to engineer:

- *"The questions asked during home visits sometimes make respondents realise changes they need to make thus T2 participants also put it into practice. Surveys*

*conducted on control group members also push them to learn about the changes they should make, through questions they are asked"* [K-Ka-CS].

Some control group members confirmed this:

- *"My health card is expired but I had bought it because my family members fall sick quite often and I learned from the questions I was asked that a health card would enable me to pay less fees for healthcare"* [K-Si-CG].

Another way of interpreting positive changes among control group and other non-participating households within *Terintambwe* communities is as 'wider impacts' on 'secondary beneficiaries'. Many such impacts were reported, including the following:

- *"Non-participants benefit from our kitchen gardens, as we share with them vegetables we harvest. Some of them have set up kitchen gardens themselves and others are in SILC"* [K-Ka-T2M]
- *"Non-participants have imitated us in doing business because they wanted to be well off like us; some of them are SILC members and others have set up kitchen gardens"* [K-Ka-T2F]
- *"Non-participants have learned from us how to build kitchen gardens; we have helped them to make the gardens. They have also improved on hygiene behaviours like us, such as washing hands after using the toilet, washing dishes and putting them on a shelf to dry"* [C-Ma-T1F].

Non-participants in the *Terintambwe* programme were allowed to join SILC groups, and many did so. *("Membership is not limited to Terintambwe programme participants only but both beneficiaries and non-participants form SILC groups"* [K-Ny-CS]; *"They are members of SILC groups we have formed"* [C-Mu-T2M].) Others formed SILC groups of their own – a positive 'demonstration effect'. *("There are three other SILCs that were formed by non-beneficiaries"* [C-Ma-T1F].) There is no doubt that *Terintambwe* participants shared the knowledge and advice they received from Concern staff about everything from good hygiene practices to how to run a small business, and this almost certainly explains some of the improvements in incomes and other indicators recorded among control group households in the quantitative survey.

These impacts might be challenging for impact evaluation purposes, but they are positive not only in terms of spreading good practices to a wider group but also in maintaining social cohesion in a potentially tricky context where some households were being single out for receiving benefits while other households – many of them equally poor and vulnerable as participants – were left out. This 'social cohesion' outcome can even be interpreted as another positive spillover effect.

## 17.2. Design: Case management and scaling up

Graduation programmes combine cash transfers with livelihood support, but they have an added ingredient, which is the case management role performed by programme staff, a hybrid role that combines project administration with social worker functions, since the staff members offer support for personal matters (e.g. life skills coaching) as well as support to livelihoods

(e.g. business skills training). There is no doubt that the individual attention given by Concern case managers to each participant played a substantial part in achieving the positive outcomes recorded in this report. Several stories were recorded in the qualitative fieldwork where an intervention by Concern staff helped to stabilise a household that was experiencing difficulties of various kinds. This is one case:

> *"There is a Twa woman who made a complaint about her husband. They had issues in the household and the complaint went straight to Bujumbura. With the case manager we have supported the household with coaching sessions and we helped them restore the relationship"* [K-Ny-CS].

Such stories are doubly encouraging, because they constitute an improvement in wellbeing for the specific household, and because they validate the 'graduation model' claims that individual attention and coaching is the 'X-factor' that makes other improvements in material wellbeing possible and sustainable. On the other hand, this also represents a challenge to scaling up the graduation model approach to national level, since governments do not have the staff capacity to dedicate personal attention to all poor households in the country. This is confounded by the fact that case managers of the *Terintambwe* programme were full-time salaried staff receiving training and supervision throughout the programme. Case managers appeared motivated as a result of being formally employed and receiving continuous support from senior staff: *"My supervisor helps me a lot. […] he helps me in finding solutions for any arising issues"* [C-Bu-CM]. As a result the team experienced little staff turnover during the time of programme implementation.

## 17.3. Implementation: Complaints

The qualitative fieldwork included several open-ended questions that were intended to identify any challenges in the design and implementation of *Terintambwe*, as well as eliciting any ideas for how the programme might be amended and improved for future cycles. The questions were addressed to *Terintambwe* participants and non-participants as well as programme staff – Concern case managers and case supervisors. Specific questions were as follows:

> *"Has anybody raised any problems with the Terintambwe programme directly to with you? If yes, what was the problem? How did you handle it?"*
>
> *"Do you know if any formal complaints have been made in your colline through the formal complaints procedure? If yes, what were they about and how were they resolved?"*
>
> *"Do you have any suggestions for how to improve the Terintambwe programme when a new cycle starts?"*

For such a complex programme, relatively few serious challenges were reported in terms of delivery and implementation. Most beneficiaries responded that *"None of us has ever made a complaint",* while most case managers and supervisors responded: *"Not that I am aware of".* Instead of complaining, one beneficiary wrote a 'thank you' letter: *"I wrote a letter to thank Concern for what it has done for me, and I received an answer telling me that they will visit me to see the steps I have made"* [K-Ny-T2M].

Most problems that were reported appeared to be isolated incidents rather than evidence of systematic mismanagement or corruption. In serious cases, appropriate action was taken.

In terms of formal complaints laid against programme staff, a supervisor told of one case manager who took money from participants to purchase airtime or repair their mobile phones, but the case manager kept the money for his personal use. This was reported to the supervisor: *"We conducted investigations and found out that the case manager was guilty. We therefore paid for the beneficiaries' phones from that case manager's salary"* [C-Bu-CS]. Later another complaint was made about the same case manager:

> *"During the screening process, there was a beneficiary who was identified to be part of Terintambwe and he travelled to Rwanda. The case manager with the help of the selection committee replaced that beneficiary by a wealthier person – probably he gave them money. They then looked for documents of the person who left and gave them to the impostor (they could not change the names because the lists were already with Concern). When the beneficiary came back from Rwanda he found out that there was another person under his name and he complained to Concern. Investigations were made and it was found that the story was right. The case manager was fired, the impostor was removed from the programme and the beneficiary was put back in the programme"* [C-Mu-CS].

Despite the bad behaviour of the case manager involved, this story ends with a positive outcome about programme accountability. It demonstrates that *Terintambwe* participants felt confident to complain, that they had channels to lay their complaints, and that Concern implemented appropriate remedial actions in favour of beneficiaries and took punitive action against their staff member. (Of course, we do not know how many other cases of fraud and corruption went undetected or unreported, but this is a challenge facing crime statistics across the world.)

Some letters submitted to Concern through the complaint response mechanism (CRM) reflected issues in programme implementation that were addressed by explaining decisions taken by project managers directly to the complainant. One complaint concerned the withholding of the second tranche of asset transfer cash, due to poor performance by the beneficiary with the first tranche. This issue was resolved through effective case management:

> *"A beneficiary wrote a complaint to Concern, which was about delays in receiving asset transfers. Concern replied and explained the reason for the delays – I delivered the letter – it was due to the fact that the beneficiary had not used the cash transfers effectively, and when came the time to provide asset transfers Concern prioritised those who had demonstrated some achievements they made in the first stage of the programme. Later on this beneficiary also received the asset transfer"* [K-Ny-CM].

## 17.4. Implementation: Suggestions

Many participants expressed the view that they would not change anything about the programme (*"No need to change anything"*), and that they would prefer to share their positive experiences than think of things to complain about or suggestions for improvement. There is a possibility that this reflects 'confirmation bias' or 'pro-project bias' (the tendency for

beneficiaries to give positive feedback during programme evaluations, believing that this will enhance their chances of securing further benefits).[19] However, many *Terintambwe* participants and Concern staff offered their ideas and insights for how to modify the programme design and delivery to achieve enhanced outcomes.

### 1. Targeting should prioritise people with income-earning potential

Some participants and programme staff expressed the view that people selected into *Terintambwe* should be those who have the potential to earn income and move into higher wealth categories. *("The targeting process should be revised, because there are old people who are part of the programme but who are not capable of accomplishing much"* [C-Ma-T1M]; *"The targeting process should be done carefully; selection criteria should be elaborated in a way that people with enough capacity to evolve and make a step forward towards a different wealth category be the ones who participate"* [C-Ma-CM].) This issue refers to an ongoing debate within the social protection and 'graduation' literature, whether programmes that promote livelihoods should target the 'poorest of the poor' or those with the productive capacity to make most effective use of resource transfers.

Several participants and programme staff argued that local communities should be fully involved in validating the selection of participants, not only to ensure that they meet the eligibility criteria in terms of their wealth status, but also to ensure that people of good character are selected.

- *"People who are Ntaho Nikora but with a willingness to change should be those involved in the programme"* [C-Mu-CM]
- *"In regards to the targeting, people with positive conduct and behaviour within the community should be among the beneficiaries, rather than those with negative behaviours – especially with drinking habits"* [C-Mu-CM]
- *"Criteria selection should be ameliorated. They did not take into account people's behaviours yet they constitute a hindrance to making considerable progress in some cases: beneficiaries creating tensions in households through polygamy, for instance"* [K-Ny-CS]
- *"The targeting process should ensure that people who have the will to fully participate in the programme should be the ones to benefit from the programme, and not those with bad behaviours like wasting money in bars"* [K-Ny-CM].

A public validation process would also ensure acceptance by the community of the targeting criteria, strategy and outcomes. *("There should be a community validation of beneficiaries so that there are less complaints from other community members"* [C-Ma-CS].)

Not surprisingly, many households in the control group articulated their desire to be included in the programme. *("Concern should also support us as they did for the beneficiaries"* [K-Ny-CG].) If resources permitted or if the programme was rights-based rather than budget-constrained, then all eligible households could have been reached. More broadly, this

[19] James Copestake and Fiona Remnant (2015), *Assessing rural transformations: piloting a qualitative impact protocol in Malawi and Ethiopia,* chapter 6 in K. Roelen and L. Camfield (editors), **Mixed Methods Research in Poverty and Vulnerability: Sharing Ideas and Learning Lessons**. Houndmills: Palgrave Macmillan, p.121.

response could be seen as an endorsement of the programme and a call for it to scale up and expand its coverage. *("Terintambwe should continue its good work, because the number of poor people is increasing"* [C-Mu-CG]; *"There are still a number of Ntaho Nikora in the area, and Concern should increase the number of beneficiaries"* [K-Ny-CM].)

### 2. Offer more IGA options

Some Concern staff argued that the range of income-generating options for participants to pursue should be expanded, or should be completely open for participants to choose, based on their own preferences and expertise.

- *"Concern should not impose on beneficiaries what business to do but they should be given an option to choose what business to do"* [K-Si-CM]
- *"Concern should have not limited beneficiaries in which IGAs to undertake, because some of them had different ideas and if they were allowed to implement them they could have been more successful"* [K-Ka-CM]
- *"Proposals of IGAs to run should come directly from beneficiaries and not from us. A more participative approach should be used: asking beneficiaries what IGAs are undertaken in their area, which ones are successful than others, etc. The market research should not be conducted in areas other than where the participants are already operating"* [K-Ka-CS].

### 3. Change the sequencing of programme components

Several suggestions were made about changing the sequence of programme components. These focused mainly on introducing the livelihood-related activities earlier in the cycle – asset transfers or IGAs, SILCs, and training – before or alongside the cash transfers:

- *"The IGAs and SILCs components should come right after the monthly cash transfers start"*
  [C-Bu-CS]
- *"Trainings on IGAs and SILC should start with the programme followed immediately by the formation of SILC groups and delivery of cash transfers so that beneficiaries start saving with the cash transfers. IGAs should then come next"* [K-Ka-CS]
- *"The programme should start with trainings delivery before giving cash to beneficiaries. SILC should then follow, in the beginning of the programme"* [C-Bu-CM]
- *"Asset transfers should have started at the same time with cash transfers. There was a long period between cash and asset transfers and when the latter were provided people first withdrawn money they used to buy food. In my opinion it would have been better if cash transfers were given followed right after by trainings in business and then asset transfers should have been provided at the time people still had money to cover their basic needs so that they do not use money dedicated to IGAs"* [K-Ka-CM].

The popularity of the SILCs was evident in the number of respondents who suggested that they should have been introduced earlier in the project cycle, even at the beginning of the programme. This was repeated many times by project participants in both Cibitoke and Kirundo, and was by far the most common suggestion made. *("SILC should start earlier, at the same time cash transfers started"* [C-Bu-T2F]; *"If SILC had started with the programme*

*we would be wealthier by now"* [C-Mu-T2F]; *"SILC should have started at the beginning of the programme so that we start saving with cash transfers"* [K-Ka-T1F].)

Concern case managers and supervisors explained why, in their opinion, it would have been preferable to start the SILCs earlier. *("SILC should have started earlier. If it was the case beneficiaries would reach the phase of asset transfers with a clearer idea of what business they want to run"* [C-Ma-CS]; *"SILC should have started during the cash transfer period so that beneficiaries start saving earlier and by the time asset transfers would have been provided, people would have made significant savings that would have enabled beneficiaries to run larger businesses"* [K-Ka-CM].)

# 18. CONCLUSIONS

The *Terintambwe* programme has generated a number of findings that have wider implications, both for policy (how to implement similar programmes in Burundi and elsewhere) and for research (how to design the programme and the M&E differently, to evaluate impacts with greater precision).

## 18.1. Policy implications

In terms of material impacts, the improvements in most key outcome indicators are impressive, but they should be discounted by the substantial value of cash and services transferred to participants in order to separate out programme effects from programme impacts and to calculate net benefits derived by participants. Some of the material impacts are indirect and not immediately obvious. For instance, the programme had only limited impact on income from the household's main occupations but larger impacts in terms of shifts away from day labour and towards livelihood diversification.

In terms of behavioural impacts, the programme's achievements were also substantial, but these impacts were largely obtained from baseline to midline, with many impacts levelling off or declining from midline to endline. As programme efforts focused on IGAs and business skills during the second period, continued coaching and support on these areas might be needed, to reinforce the messages. Without such reinforcement, there is a concern that behavioural impacts might not be sustainable.

With respect to social impacts, *Terintambwe* played an important role in enabling participants to take part in community activities, both by increasing their self-confidence and by improving their level of respect within the communities. The support provided by case managers was also crucial for supporting individuals, resolving intra-household conflicts and providing tailored mentoring and advice. While the increased levels of confidence and respect may lead to sustainable change for some, others might face renewed challenges without continued support.

This leads to a final lesson for policy, namely the crucial role of programme staff in interventions as complex as *Terintambwe*, when so much depends on the personal interactions between staff and participants. The work by a well-trained, engaged and adequately remunerated cadre of case managers and supervisors has been essential to the success of the programme.

## 18.2. Research implications

A striking feature of the midline and endline survey findings is the negligible differences recorded between high-treatment (T1) and low-treatment (T2) groups on almost all key outcome indicators evaluated. This is a product of research design rather than actual impacts, for at least two reasons. Firstly, the differences in support received by the high- and low-treatment groups were too small for capturing differential impacts. Secondly, contrary to assumptions made during the research design phase, there were substantial 'spillover' and 'contamination' effects between households in high-treatment, low-treatment and control

groups, as they were all living as neighbours in the same villages. These effects are likely to underestimate programme impacts.

One Concern supervisor made the point that the only way to avoid spillovers would be to separate the groups of households for which differences in outcomes were being assessed: *"T1 and T2 beneficiaries are neighbours and friends; there is a fluid communication between the two groups. An analysis of any difference would be possible for groups who live far from each other"* [C-Ma-CS]

This is correct. From a research perspective, a rigorously designed randomised control trial (RCT) to isolate the effects of the training and coaching component would require (1) one treatment group a second receiving all the training and BCC support and treatment receiving all the other programme components but no training and BCC support; and (2) isolating these two groups by selecting them from different communities far apart, to minimise the interactions between them.

Finally, the endline survey was implemented at the end of the project cycle, so a large part of the positive findings reported here are programme effects. A follow-up survey should be conducted after some time has passed, to identify which improvements in participants' wellbeing have been sustained and which have eroded or disappeared.

# Annex 1. Sample size calculations

Sample size calculations are based on the indicator of school attendance rate for girls. The following formula for the calculation of sample size requirements is used (from Adamchak et al. 2000, Appendix 2, p.265):

$$n = D\,[Z_{\alpha}\,(2P\,(1-P))^{1/2} + Z_{\beta}\,(P_1\,(1-P_1) + P_2\,(1-P_2))^{1/2}]^2 / (P_2 - P_1)^2$$

The attendance rate for girls is assumed to be 70% at baseline level (P1) (2005-2010, http://www.unicef.org/infobycountry/burundi_statistics.html). Based on different assumed values for the expected outcome in the endline survey (P2), the desired significance level for one- or two-sided tests with which we would be able that a change in outcome did not occur by chance (α), the desired degree of confidence/power with which we are able to detect a change if one actually occurred (β) and the design effect (D), the required sample sizes are presented in Table A1.1.

**Table A1.1. Scenarios for sample size calculations**

| Scenario | P1 | P2 | A | β | D | N |
|---|---|---|---|---|---|---|
| *1* | 0.7 | 0.8 | 0.05 (one-sided) | 0.80 | 1 | 230 |
| *2* | 0.7 | 0.8 | 0.05 (two-sided) | 0.90 | 1 | 399 |
| *3* | 0.7 | 0.75 | 0.05 (two-sided) | 0.80 | 1 | 1933 |
| *4* | 0.7 | 0.8 | 0.05 (one-sided) | 0.80 | 2 | 270 |
| *5* | 0.7 | 0.8 | 0.05 (two-sided) | 0.90 | 2 | 798 |
| *6* | 0.7 | 0.75 | 0.05 (two-sided) | 0.80 | 2 | 3867 |

The numbers for Scenario 1 in Table A1.1 stipulate that to observe the minimum of a 10 percentage point change in the attendance rate of girls that is significant at a 5% level (using a one-sided test) with 80% certainty to pick up on that change if it occurred, a sample size of 230 clients would be required (no design effects are assumed). This is the sample size of one of three groups, not the overall sample size of the evaluation.

It is obvious that greater levels of significance and certainty to observe change require large samples. In addition, the smaller the degree of change in outcomes that we wish to observe, the larger the samples need to be.

The size of the design effect is difficult to determine. The design effect refers to the loss of variation in a sample due to the fact that it is not a perfectly random sample and that as a result members of clusters within a sample are homogenous. The more homogenous the sample, the more difficult it will be to pick up on changes in outcomes. There is likely to be a substantial degree of homogeneity in the overall sample of this evaluation, as well as within the three different treatment groups, as all respondents are eligible clients.

*Sampling*

Within the parameters provided by the programme design and on the basis of sample size calculations, the following sample sizes have been decided:

| | |
|---|---|
| T1 | 1000 |
| T2 | 1000 |
| C | 600 |

Within the parameters of the programme design, 600 was the maximum number of clients to be allocated to the control group receiving no treatment at all. The calculations above indicate that this allows for reasonable power when wishing to observe a minimum change in outcomes of 10 percentage points.

The sample sizes of these three different groups ensure that the control group is as large as possible within the programme design parameters. In terms of school attendance rate for girls, assuming a design effect of 2, this sample should be able to pick up a minimum change of 10 percentage points at a 5% significance level (one-sided) with a certainty of 80%.

Note of caution:
The exact sample size calculations to determine the appropriate sample size for this quantitative evaluation are hampered by a number of factors:

1) The calculation of sample sizes is guided by indicators in which we aim to observe changes in outcomes. This evaluation aims to consider changes in outcomes for many indicators and it will not be feasible to include all indicators in such calculations.

2) The calculation of sample sizes requires the determination of a starting or baseline level of the indicators that are included in that calculation. Such a baseline level might be available for some indicators (school attendance rate) but not for others (% of women having control over assets).

3) The calculation of sample sizes requires assumptions about the minimum change that is to be observed from the first to the second round of data collection. As minimum baseline levels of indicators are not always available and target levels cannot be provided for all indicators, such minimum change can only be considered for a restricted number of indicators.

# Annex 2. Calculating the Dietary Diversity Index

**Table A2.1. Calculating the household dietary diversity index (HDDI)**

| | |
|---|---|
| 1 | **Cereals**: Maize, wheat, sorghum, rice, bread, biscuits |
| 2 | **Tubers and roots**: Sweet potato, potato, yam, cassava, Irish potatoes |
| 3 | **Legumes, nuts and seeds**: Beans, soy beans, lentils, chick peas, peanuts |
| 4 | **Milk and milk products**: Milk, cheese, yogurt, or other milk products |
| 5 | **Eggs** |
| 6 | **Fish** |
| 7 | **Meat**: Beef, goat, mutton, chicken, pig, rabbit |
| 8 | **Sweets**: Sugar or honey |
| 9 | **Oils and fats**: Foods made with oil fat or butter |
| 10 | **Vegetables**: Banana, cabbage, amaranth, aubergine, carrot, pumpkin, tomatoes, onions |
| 11 | **Fruit**: Orange, pineapple, lemon, avocado, mango, papaya, tree tomato, passion fruit |
| 12 | **Spices, condiments and beverages**: Any other foods such as condiments, coffee, tea, non-alcoholic drinks |

**Table A2.2. Calculating the child dietary diversity index (CDDI)**

| | |
|---|---|
| 1 | Starchy staples [cereals/staples + roots and tubers] |
| 2 | Beans, pulses, legumes or nuts |
| 3 | Dairy and dairy products |
| 4 | Eggs |
| 5 | Meat + fish |
| 6 | Vitamin A-rich plant foods [carrot, pumpkin, tomatoes, sweet potatoes or vegetables that are yellow or orange inside] + dark green leafy vegetables |
| 7 | Other fruits and vegetables [banana, cabbage, amaranth, aubergine] + [mango, papaya, tree tomato] + [orange, pineapple, lemon, avocado, passion fruit] |
| 8 | Any foods made with oil fat or butter |