March 2016

FINAL EVALUATION REPORT

ENHANCING THE PRODUCTIVE CAPACITY OF EXTREMELY POOR PEOPLE IN RWANDA

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Acknowledgements

This report was written by Stephen Devereux and Ricardo Sabates, drawing on several outputs from the monitoring and evaluation component of the 'Graduation Programme' in Rwanda, including a baseline report, two reports on data quality, six interim impact evaluation reports and a qualitative evaluation report. Many individuals contributed to these outputs, so their work is also reflected in this report, notably Pamela Abbott, Aleston Kyanga, Godfrey Ngoboka and Rachel Sabates-Wheeler (from the external M&E team), and Alice Simington, Odette Kampirwa Kweli, Donna Ajambo Akaliza (Concern Worldwide Rwanda); Chris Pain, Lucia Ennis, Irina Ignatieva, Rosaleen Martin and Jenny Swatton (Concern Worldwide Dublin). Concern Worldwide staff in Rwanda and Dublin also contributed to the monitoring and evaluation work in various ways, and we are grateful to all of them, as well as the programme participants and non-participants who patiently answered our questions. We also wish to acknowledge the invaluable contribution of Services au Développement des Associations (SDA) Iriba Management (Callixte Gatsimbanyi and Theodose Mbonigaba) and staff who were responsible for direct implementation of the Graduation Programme. Financial support for this research was provided by Irish Aid and Concern Worldwide. We would also like to thank the respondents in the participant and comparison groups who agreed to participate in the survey.

Key Impact Indicators

The table below summarises the quantitative findings from both cohorts of beneficiaries as well as control group households, for 12 key impact indicators – at baseline, after 12 months, after 36 months, and (for the first cohort only) after 48 months. For most indicators the findings are directly comparable across both cohorts, but for some indicators the definition and measurement were changed for cohort 2.

Key impact indicators for the Graduation Programme in Rwanda (cohort 1 and cohort 2)

#	Hypothesis	Baseline		+12 months		+36 months		+48 months	
		Control	Participants	Control	Participants	Control	Participants	Control	Participants
1	Participating households will register lower levels of deprivation than at baseline, in comparison to control group. (*The deprivation index is inverse, so a higher value represents lower levels of deprivation.*)	2.26 2.54	1.94 2.48	2.51 2.87	6.96 4.35	3.75 3.00	5.89 4.20	2.71	4.64
2	Participating households will register higher levels of productive assets than at baseline, in comparison to control group. (*Value represents an index of productive assets for cohort 1; and the value of productive assets in USD for cohort 2.*)	3.10 $6.0	2.43 $9.7	3.27 $9.4	4.59 $14.0	2.82 $5.8	4.48 $13.2	2.58	4.54
3	Participating households will register higher levels of consumption assets than at baseline, in comparison to control group. (*Value represents an index of consumption*	4.45 $11.0	3.44 $13.9	3.71 $11.1	6.87 $25.8	4.77 $12.7	7.98 $26.5	3.87	7.09

	assets for cohort 1; and the value of consumption assets in USD for cohort 2.)								
4	More participating households will have savings than at baseline, in comparison to control group. (*Value represents proportion of households who saved.*)	9% 25%	12% 36%	16% 30%	96% 93%	31% 24%	76% 68%	37%	84%
5	More participating households will send some or all of their primary school-age children to primary school than at baseline, in comparison to control group. (*Value represents the proportion of children.*)	64% 85%	63% 80%	75% 87%	80% 84%	81% 79%	84% 77%	83%	84%
6	More participating households will send some or all of their secondary school-age children to secondary school than at baseline, in comparison to control group. (*Value represents the proportion of children*.)	11% 18%	10% 8%	15% 11%	23% 11%	n.a. 10%	n.a. 9%	n.a.	n.a.
7	More participating households will be eating meat than at baseline, in comparison to control group. (*Value represents proportion of households who eat meat at least once a month.*)	18%	8%	5%	41%	24%	39%	3%	21%
8	Fewer participants will perceive that members of their household are malnourished than at baseline, in	42%	25%	31%	12%	8%	2%	7%	1.5%

	comparison to control group. (*Value represents the proportion of households.*)								
9	More participating households will be using <u>mosquito nets</u> than at baseline, in comparison to control group. (*Value represents proportion of households who have at least some members sleeping under mosquito nets for cohort 1; and the number of household members sleeping under mosquito nets for cohort 2.*)	60% 1.6	76% 1.9	57% 3.0	64% 3.4	67% 1.7	89% 2.7	50%	68%
10	More participating households will be <u>changing their clothes at least every 2 to 3 days</u> than at baseline, in comparison to control group. (*Value represents the proportion of households.*)	24%	11%	19%	64%	26%	60%	30%	55%
11	More members of participating households will be <u>attending women's meetings</u> than at baseline, in comparison to control group. (*Value represents the proportion of households for cohort 1; and the average number of meetings in last 3 months for cohort 2.*)	69% 4.6	62% 3.8	64% 2.7	80% 3.0	67% 2.6	79% 2.9	58%	72%
12	More participating households will be <u>members of cooperatives</u> than at baseline, in comparison to control group. (*Value represents proportion of households.*)	26% 25%	18% 29%	18% 42%	75% 92%	32% 30%	75% 76%	28%	65%

Note: For each indicator, cohort 1 results are shown on top and cohort 2 results are shown below, within each row.

For the second cohort an additional eight indicators were monitored; these results are summarised in the table below.

Additional impact indicators for the Graduation Programme in Rwanda (cohort 2 only)

#	Hypothesis	Baseline		+12 months		+36 months	
		Control	Participants	Control	Participants	Control	Participants
13	Participating households will register more livestock than at baseline, in comparison to control group. (*Value of livestock in USD.*)	$55.0	$49.7	$60.1	$87.5	$77.3	$111.5
14	Participating households will register higher income than at baseline, in comparison to control group. (*Weekly earnings in USD.*)	$2.3	$2.3	$3.3	$4.5	$1.9	$3.9
15	More participating households will be able to repay loans than at baseline, in comparison to control group. (*Value represents the proportion of households who had loans and have managed to repay.*)	10%	11%	30%	38%	23%	29%
16	More participating households will be able to afford health insurance than at baseline, in comparison to control group. (*Value represents the proportion of households with health insurance.*)	64%	59%	73%	98%	75%	85%

17	Participating households will eat more meals a day than at baseline, in comparison to control group. (*Value represents the number of meals per day.*)	1.2	1.2	1.3	1.8	1.2	1.6
18	Participating households will diversify their diet more than at baseline, in comparison to control group. (*Value represents the adult dietary diversity index.*)	2.4	2.2	2.5	4.4	2.2	3.8
19	Participating households will face fewer risks than at baseline, in comparison to control group. (*Value represents the average number of risks.*)	1.6	2.3	1.3	1.8	2.5	2.8
20	Participants will have more coping strategies than at baseline, in comparison to control group. (*Value represents average number of coping strategies.*)	1.0	1.1	0.7	1.0	1.2	1.4

1. INTRODUCTION

Since 2011 Concern Worldwide-Rwanda and Services au Développement des Associations (SDA-IRIBA) with financial support from Irish Aid, have implemented a project called 'Enhancing the Productive Capacity of Extremely Poor People', also known as the 'Graduation Programme', in the Southern Province of Rwanda. The programme targets extremely poor households – defined as those who are unable to meet their basic needs for food, health care, shelter, and education. The programme delivers a package of support that includes cash transfers to meet basic needs – averaging RwF.18,000 (about €22) per household per month – skills development and resources to improve livelihoods, and improved savings to increase resilience to shocks. In addition, intensive coaching is provided by volunteer Community Development Animators (CDAs) who each visit approximately 15 beneficiaries twice every month. This package is similar but not identical to the support delivered by 'graduation model' programmes in Bangladesh and several other countries, and it shares the same objective of enabling sustainable exits from extreme poverty. By the end of the project cycle, beneficiaries are expected to have 'graduated' into self-reliant livelihoods.

The programme started in two rural sectors, Kibeho in Nyaruguru District and Rusatira in Huye District. The first cohort of 400 households received income support (cash transfers) for 18 months between August 2011 and January 2013, and livelihood support (asset transfers, in two instalments) over a period of 28 months between November 2012 and March 2015. The second cohort of 800 households received income support for 16 months between September 2012 and December 2013, and asset transfers (in two instalments) over a period of 15 months between December 2013 and March 2015. A third cohort of 800 households was added in Nyamagabe district in late 2013 and a fourth cohort of 600 households was added in Gisagara district in late 2014. Finally, an additional 600 households were added in late 2015 across Gisagara and Huye. More than 15,800 beneficiaries (based on an average household size in rural areas of 4.93) in 3,200 households in 4 districts have been reached by the programme. Only the first and second cohorts were considered for this evaluation study.

A comprehensive monitoring and evaluation (M&E) component was integrated into the programme design, attached to the first two cohorts. As elaborated in the methodology chapter (below), this included a quantitative baseline survey, '12-month' surveys towards the end of the cash transfer phase, '36-month' surveys towards the end of the asset transfer phase, and a '48-month' follow-up survey of cohort 1 to assess the sustainability of programme impacts after all support was terminated (see Annex 1 for a complete list of evaluation reports and other M&E outputs).

This final report aims to identify trends in participants' human, social and financial wellbeing over time, to quantify any changes that are attributable to the Graduation Programme, and to identify factors that either enable or constrain sustained improvements in key outcome indicators. Specifically, the evaluation tested several hypotheses around a set of indicators that were monitored before, during and after the programme was implemented. Participants were expected to increase their asset ownership, food security, spending on basic needs, savings, ability to borrow and repay loans, investment in education, investment in health and preventative health care, hygiene practices, empowerment over household decision-making, and engagement in social activities and community institutions, in comparison to control group households. Participating households were also expected to diversify their income sources, and to reduce their levels of deprivation and adoption of damaging coping strategies, thanks to their participation in the Graduation Programme.

This final evaluation report summarises and compares the findings from several rounds of surveys of cohort 1 and cohort 2 households, as well as qualitative fieldwork that added explanatory depth to the quantitative data. This report is structured as follows. A brief review of the literature on graduation programmes follows this chapter. Then the evaluation methodology is described. The main section of the report analyses the results under the key indicators listed above. The final chapter consists of a discussion of the implications of the findings, with recommendations for future programming.

2. LITERATURE REVIEW

'Graduation model' programmes originated in Bangladesh in the early 2000s, when the NGO BRAC realised that there was a category of extremely poor people who have productive capacity but are too poor and risk-averse to take microfinance loans, and need a boost to lift them out of extreme poverty. BRAC devised a sequenced package of support for these people, which included regular cash transfers every month for up to two years, access to savings, selection of livelihood activities and productive asset transfers to generate sustainable flows of income, livelihood training, and intensive coaching and mentoring on life skills ranging from financial literacy to good hygiene and nutrition practices.

BRAC has achieved impressive success rates with their graduation programme – called 'Challenging the Frontiers of Poverty Reduction – Targeting the Ultra-Poor' (CFPR-TUP) – in Bangladesh. When the programme started in 2002, 85% of selected households were 'extremely poor' – they earned less than the PPP adjusted extreme poverty line of 50 US cents a day per person. In 2005, half (51%) of these 'ultra-poor' households had crossed the extreme poverty line, and by 2008 – three years after programme support ended – most of the rest (an additional 41%) had done so. In six years, therefore, 92% of CFPR-TUP households graduated out of extreme poverty

(Hashemi and Umaira 2010). There were many other indicators of improvement over time. Between 2002 and 2008:

- household incomes rose from Taka 293 less to Taka 1,510 more than the comparison group;
- CFPR-TUP households reporting chronic food deficits fell from 60% to 20%;
- participating households owning goats or sheep increased from 6% to 34%, and they held Taka 8,000 more in assets than the comparison group;
- participating households with cash savings increased from 8% to 98% (Hashemi and Umaira 2010).

Encouraged by the success of BRAC's 'graduation model' programme, the Ford Foundation and the Consultative Group to Assist the Poor (CGAP) supported 10 pilot projects in 8 countries to test if the approach was replicable outside Bangladesh. For 6 of these pilots (in Ethiopia, Ghana, Honduras, India, Pakistan and Peru), rigorous impact evaluations were conducted using a randomised control trial (RCT) methodology. Surveys were conducted at baseline, at endline (two years later) and one year after programme support ended (three years after baseline). The findings were impressive and consistent. Participants recorded statistically significant improvements across a range of material indicators – income, consumption, food security, assets and self-employment – both in absolute terms and relative to a control group. Most of these gains were sustained – and some continued to improve – even after participants 'graduated' out of the programme. However, initial improvements in non-material indicators – physical and mental health and women's empowerment – were no longer significant after three years (Banerjee *et al.* 2015).

Sustainability of impacts can only be demonstrated with longitudinal surveys, but is a follow-up survey one year after participants graduate long enough to prove sustainability? A graduation project in Haiti, implemented by the local NGO Fonkoze with support from Concern Worldwide, found that almost all participants improved their indicator scores on a poverty scorecard between entering and leaving the programme. Four years later almost one-third had continued on their upward trajectory, more than one-third had maintained their position, but one-third had fallen back significantly (Pain *et al.* 2015). Clearly, post-graduation support, including complementary social protection interventions, is needed for those households that will inevitably face setbacks after exiting or have limited labour capacity.

One common critique of the graduation model is that it operates well at the small-scale project level when implemented by NGOs, because NGOs have the grassroots presence needed to give participants the individual coaching and mentoring they need, but the model is not feasible at national level, because governments do not have the capacity to deliver such intensive 'case management' support. Two rare examples of

national graduation-oriented programmes in Africa are the Productive Safety Net Programme (PSNP) in Ethiopia and the Vision 2020 Umurenge Programme (VUP) in Rwanda.

Graduation can be defined and measured in several ways. 'Endogenous graduation' occurs when a programme participant reaches predetermined thresholds on indicators such as income and assets – so this is also called 'threshold graduation' – and participants continue receiving support for as long as it takes them to achieve these benchmarks. 'Exogenous graduation' occurs when a programme has a fixed duration – so participants exit the programme when the programme cycle ends, and they receive no more support even if they have not yet achieved graduation benchmarks (Samson 2015).

Large numbers of PSNP participants in Ethiopia have 'graduated', based on an assessment of whether they have surpassed an asset threshold. Given the harsh environment and frequent weather shocks in rural Ethiopia, it is doubtful whether the majority of graduates have actually achieved food security and sustainable livelihoods. The PSNP has arguably been more effective in its 'safety net' role than in its 'productive' ambitions, mainly because its livelihood support component has lagged behind Public Works and Direct Support, and asset packages have reached relatively few participating households.

In Rwanda, an evaluation found that the VUP improved beneficiaries' food security, consumption and assets. Specifically, most VUP households accumulated livestock while they were receiving benefits. However, much of this investment was lost fairly soon after they stopped receiving Direct Support or Public Works wages when they were classified into a higher wealth category that made them ineligible to receive further benefits (Gahamanyi and Kettlewell 2015). One implication is that continuous support or complementary interventions are needed to ensure that the benefits derived from graduation programmes are sustained, otherwise there is a risk that 'threshold graduation' will see many households reverting to their previous situation.

The emerging consensus seems to be that 'graduation model' programmes, by offering a coherent and sequenced package of support to extremely poor households, have the potential to achieve more substantial poverty-reducing impacts compared to single interventions such as social cash transfers. However, questions remain about their affordability, whether the 'case management' components are scalable, and the long-term sustainability of programme impacts.

3. METHODOLOGY

A difference-in-differences methodology was designed for this evaluation, following standard impact evaluation protocols. Difference-in-differences means that changes are assessed both over time and between beneficiaries and comparable non-beneficiaries, to quantify impacts that can be attributed to the programme. For the first cohort a 100% census of all 400 beneficiary households (200 in each district) was tracked over time for changes in key indicators, and the findings were compared to changes in the same indicators among 200 control group households (100 in each district), to estimate the attributable impacts of the Graduation Programme. For the second cohort a 50% sample of 400 randomly selected beneficiaries (200 from each district) and 200 control group households (100 from each district – the same as those in the first cohort) were surveyed. The control groups were selected from different communities in non-adjacent sector or cells, to minimise the risk of spillover effects.

Attrition rates (the number of individuals leaving a group over a period of time) were relatively low. For the first cohort, 10 households dropped out of the programme during the first year, so the sample size fell from 400 beneficiaries at baseline to 390 after 12 months. At 36 months 372 beneficiary households were re-interviewed and at 48 months, 375 households were re-interviewed, an attrition rate of only 6%. The control group fell from 200 households to 187, 192 and 177 households over the four survey rounds, an attrition rate of 12%. For the second cohort 395 beneficiaries and 161 control group households were interviewed for the 12-month survey and 363 beneficiaries and 178 control group households were interviewed for the 36-month survey, an attrition rate of 9% among the beneficiary sample and 11% in the control group sample.

For both cohorts of beneficiaries, quantitative household surveys were conducted at baseline, at 12 months and after 36 months. The baseline survey was conducted shortly before the first cash transfers were disbursed. The second survey was conducted one year later and aimed to assess the impacts of the cash transfers. The third survey was conducted 36 months after the programme started: 22 months after the cash transfers ended and 18 months after all support was withdrawn. For the first cohort households, a fourth follow-up survey round was conducted 48 months after the programme started, 2½ years after all support was withdrawn.

Each round of surveys had different objectives. The baseline survey aimed (a) to establish the situation of households in terms of all indicators that would be monitored for expected impacts, and (b) to confirm that there were no significant differences between households selected as beneficiaries and those selected into the control group, before the programme started. The 12-month survey coincided with the end of the cash transfer period and was intended to isolate the impacts of the cash transfers from other forms of support. The 36-month survey captured the impacts of the livelihoods support, including training and coaching, and was conducted after all forms

of support ended, as a kind of endline survey. The 48-month survey was designed to determine whether any positive impacts had persisted and were sustainable.

Questionnaires were designed to collect consistent information on the same set of outcome indicators across all beneficiary and control group households surveyed. The basic questionnaire had several modules, including: household demographics; assets; income; financial management; housing; food security; education; health; social capital; coping strategies; household decision-making processes. On each indicator, 4 outcomes are possible in the trend analysis and are reported in the impact reports:

1. **No change**: no significant difference between beneficiary and control households over time
2. **Sustained**: improvement from baseline to 12 months, maintained to 36 and/or 48 months
3. **Disappeared**: improvement from baseline to 12 months which was lost by 36 or 48 months
4. **Declined**: beneficiaries are relatively worse off than the control group after 36 or 48 months.

This report draws on 15 documents that have been generated by the monitoring and evaluation component of Concern's Graduation Programme in Rwanda. These include a baseline report, 2 reports on data quality, 6 impact evaluation reports, a Working Paper, 3 Briefing Papers, a conference paper, and a journal article (see Annex 1 for a complete list).

Limitations of the research design included: (1) programme beneficiaries were purposively rather than randomly selected; (2) it is impossible to isolate the effects of each component of the integrated package of support delivered by the Graduation Programme; (3) control group households were compensated for their participation in the surveys. (Compensation included hoes, soap and other small items.) None of these limitations severely compromises the credibility of the evaluation findings.

4. RESULTS AND ANALYSIS

This section presents findings on a range of outcome indicators from multiple rounds of evaluation surveys. Having four data points from cohort 1 and three data points from cohort 2 allows trends to be identified over time, for beneficiaries as well as control group households, and for comparisons to be drawn across the two cohorts. The multi-round panel dataset also allows conclusions to be drawn on whether the impacts were sustained even after support from the programme ended.

4.1. Deprivation index

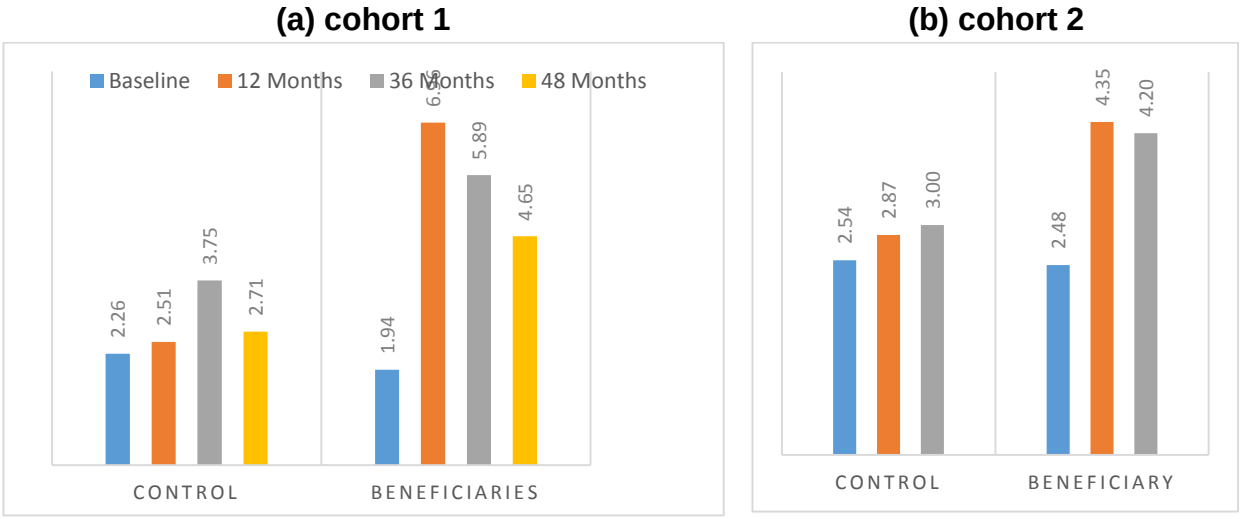
***Hypothesis**: Graduation Programme participants will register lower levels of deprivation over time, relative to the control group.*

A 'deprivation index' was compiled from three indicators: ability to afford enough food, ability to pay for the government's health insurance scheme, and ability to purchase medicines. The scale ranges from 0 (only eats a few times a week, can never afford health care or essential medicines), to 8 (eats three times a day, can always afford health care and medicines).

Cohort 1 households were worse off than control group households at baseline, but during the first year of the programme beneficiaries improved their score on the deprivation index substantially, from just under 2 to close to 7 (where 8 signifies no deprivation), while control group households showed no significant change. In the next two periods – 12-36 months and 36-48 months – beneficiary scores fell back, but still ended much higher than at baseline (Figure 1a). Control group households improved their average score, however, especially in the 12-36 month period, which reduced the significance of the programme's attributable impact on the deprivation index.

Figure 1b reveals a sustained and attributable reduction in deprivation among cohort 2 households, who improved their index score substantially during the first 12 months and effectively sustained this improvement after 36 months, while control households recorded small but statistically insignificant improvements in their deprivation index over the same period. The likely explanation is that cash transfers financed purchases of food, health insurance and medicines during the first year, and higher incomes facilitated by the programme allowed these purchases to be sustained over time. However, the slight decline among cohort 2 households between 12 and 36 months, and the sustained but declining trend in the deprivation index observed for cohort 1 households, both point to a reversal of the substantial positive impacts of the programme caused by the income support provided during the initial cash transfer period. One plausible explanation, confirmed by both the quantitative and qualitative fieldwork, is that the profits earned from most supported income-generating activities were lower than the cash transfer payments, so total average household income was lower in years 2 and 3 than in year 1, though still higher than before the Graduation Programme started. It would be instructive to monitor the deprivation index again after more years have elapsed, to track the trajectory of this indicator over the longer-term.

Figure 1. Deprivation index



Note: The deprivation index ranges from 0 to 8, where 0 is worst and 8 is best.

4.2. Asset ownership

***Hypothesis**: Graduation Programme participants will register higher levels of asset ownership over time, relative to the control group.*

Asset ownership is a robust indicator of material wellbeing, since productive assets generate flows of income, and wealth allows people to accumulate consumer goods. Beneficiaries and control group households were asked about their ownership of a range of assets including land, livestock, farm tools, house, bicycles, kitchen utensils, furniture and electronic goods.

4.2.1. Productive assets

Productive assets, defined as those that have the potential to generate future streams of income, were analysed differently for each cohort. Cohort 1 households were asked if they own and/or use eight productive assets, and an index was constructed by assigning the same weight (1 or 0) to each asset. Cohort 2 households were asked how many of each productive asset they own, and total assets owned by each household were converted to a monetary value using local market prices. Also, during the fieldwork it was discovered that some assets such as mobile phones were being used for business purposes, so these were reclassified as productive assets in cohort 1 rather than consumption assets as in cohort 1. This means that the productive assets indicator is not directly comparable across cohorts, but it does allow two different ways of analysing productive assets to be compared.

For cohort 1 households a 'productive asset index' was constructed from eight indicators: lives on own land; land is used for agriculture; number of plots used for agriculture; uses improved seed; owns a bicycle; owns a cow; owns other animals; owns at least one hoe. While the control group recorded a slight decline in this index

over the survey period, beneficiaries increased their index value by two assets, from 2.4 to 4.6 within 12 months, and maintained this level for the next 36 months (Figure 2a). This is a statistically significant and sustained positive programme impact.

The findings for individual indicators in the productive asset index are illuminating. The programme resulted in a significant increase in land registration. The proportion of cohort 1 beneficiaries living on registered land trebled (from 25% to 78%) between the baseline and 48-month surveys, while remaining constant (at 47%) among control group households, which is not an unexpected finding, since the government's villagisation programme was being actively implemented during this period. The cash transfers and IGA profits enabled participants to purchase land for both house construction and crop cultivation, and this was identified as an enabler of graduation in the qualitative research. "Households who lived in their own dwelling showed greater reductions in deprivation over time compared with beneficiaries who rented or who were hosted for free" (Ajambo Akaliza *et al.* 2016: 5).

There is indirect evidence that the Graduation Programme has stimulated agricultural production, in communities where livelihoods are dominated by farming. The proportion of beneficiaries using more than one plot for farming increased from less than one in four (23%) at baseline to almost all households (91%) within four years. Control group households stayed at around two-thirds (from 64% to 69%) over this period. It seems likely that beneficiaries used some of their cash transfers and incremental incomes to purchase or rent more land for farming. Also, there was a significant and steady rise in the proportion of beneficiaries using improved seeds, from virtually 0% at baseline to 35% after 48 months, but a slight fall among the control group, from 14% to 11% over the same period.

For cohort 2 households the value of productive assets owned by households surveyed was estimated using local market prices for hoes, bicycles, mobile phones and radios.[1] Figure 2b reveals that the average value of productive assets owned by cohort 2 beneficiaries increased from RwF.6,051 (€7.6) at baseline to RwF.8,660 (€10.8) one year later, and fell only marginally after a further two years.[2] Control group households experienced a comparable increase during the first year from a lower baseline value – from RwF.3,747 (€4.7) to RwF.5,825 (€7.3), but fell back to below baseline two years later – to RwF.3,601 (€4.5). The initial increase in control group assets can be explained by the fact that these households were given two hoes worth RwF.2,500 (€3.1) as an incentive to participate in the survey, but it is not clear why their asset-holdings declined during the next two years. Overall, beneficiaries displayed a sustained increase in their productive assets, especially hoes, radios and mobile phones, and the improvement in productive asset values is statistically

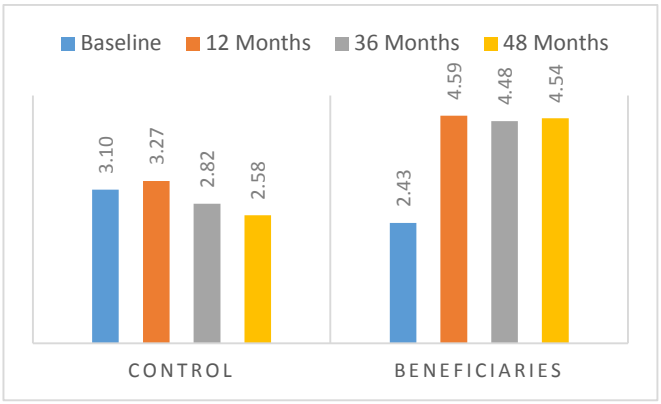
[1] Outliers (households with asset values > RwF 60,000 and households owning zero assets) were removed from the analysis, and prices were held constant over time.

[2] 1 Euro = RwF.800 at December 2015 exchange rates.

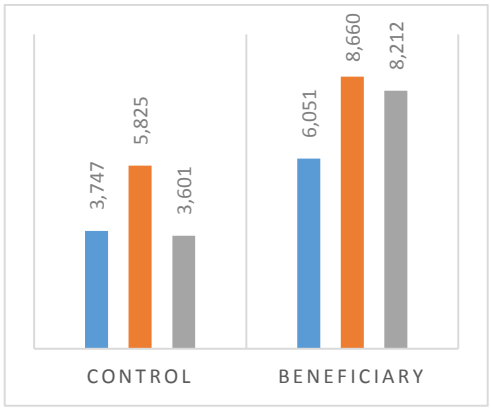
significant because the productive assets owned by control group households did not increase over the 3-year period.

Figure 2. Productive assets

(a) cohort 1 – productive asset index



(b) cohort 2 – value of productive assets



Note: The productive asset index ranges from 0 to 8, where 0 is asset poor and 8 is asset rich

4.2.2. Livestock

Two complementary indicators of livestock ownership were used. For cohort 1 households, ownership of different animals (cows, goats, sheep, pigs, chickens, rabbits) was tracked over time, whereas for cohort 2 households the value of all livestock owned was estimated.

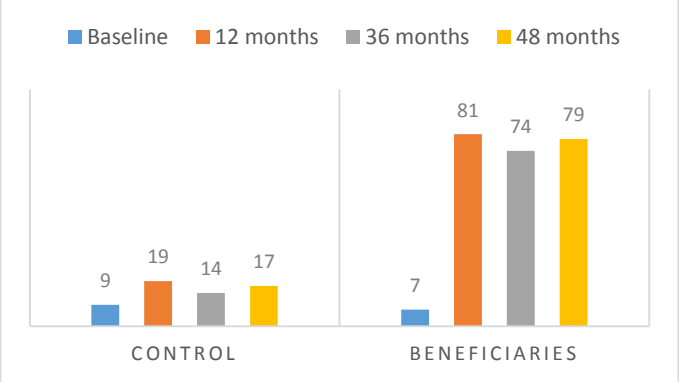
The proportion of cohort 1 beneficiaries owning any domesticated animals increased dramatically within 12 months of the baseline survey, from 7% to 81% of households, then declined slightly to 74% but returned to 79% after 48 months (Figure 3a). Most of the livestock acquired were small animals – goats, pigs, chickens, rabbits – but the percentage of beneficiaries owning a cow reached 19% after 48 months, whereas not one owned a cow at baseline. This is most likely an immediate income effect: cash transfers in year 1 of the programme were used to finance livestock purchases. A smaller increase was recorded for control group households, from 9% to 17%, which means that four times as many beneficiaries as control group households owned livestock by the time of the 48-month survey, making this a significant attributable programme impact.

Livestock ownership by cohort 2 beneficiaries increased substantially during the first year of the programme, and continued to rise during the following two years. These increases occurred across all types of animals – cows, goats, sheep, pigs, chickens – except rabbits, both in absolute numbers and relative to the control group, who also increased their livestock ownership but not to the same extent. For example, almost 10% of beneficiaries acquired a cow during the first 12 months, while the average number of goats owned increased from almost none to more than one per beneficiary household. Cohort 2 households more than doubled their average livestock value

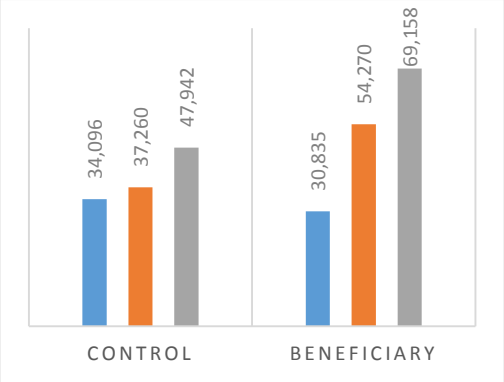
within three years – by 76% in the first 12 months, and by a further 27% in the next 24 months – from RwF.31,000 (€39) at baseline to RwF.69,000 (€86) 36 months later (Figure3b). Conversely, control group households increased their livestock value only by 9% in the first 12 months, but by a further 29% in the next 24 months, or by 41% overall – from RwF.34,000 (€43) at baseline to RwF.48,000 (€60) 36 months later.[3]

Figure 3. Livestock ownership

(a) cohort 1 – owns domesticated animals (% households)



(b) cohort 2 – value of livestock (RwF)

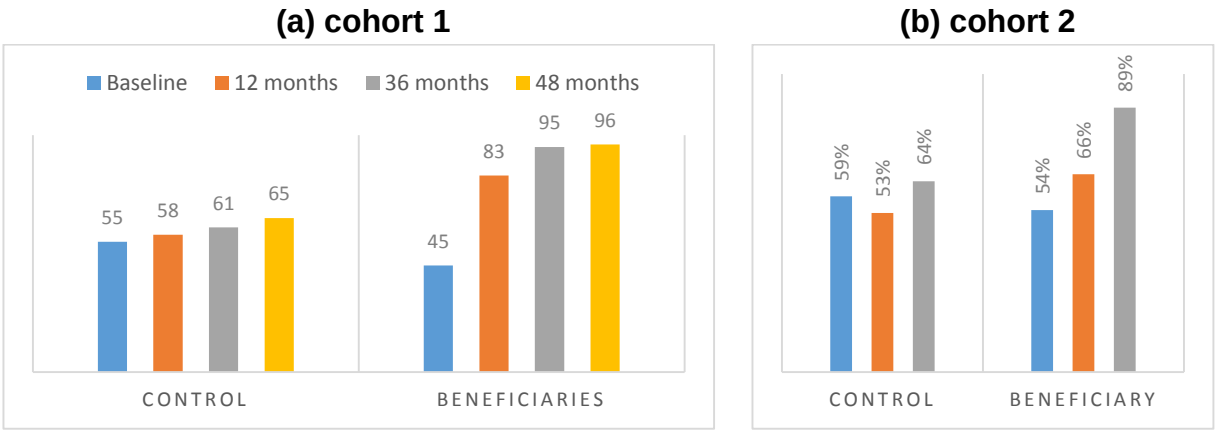


4.2.3. Houses

A very visible impact of the Graduation Programme has been on home ownership. At baseline, more than half of cohort 1 and slightly less than half of cohort 2 households were homeless, mostly living with relatives, partly because of land pressure but partly because of the government's campaign to eradicate thatched roofing and its villagisation programme. Cash transfers and complementary support from Concern Rwanda enabled large numbers of beneficiaries to construct their own homes, and home ownership was almost universal among cohort 1 beneficiaries within 48 months, rising from 45% to 96% (Figure 4a). There was a smaller rise among control group households, from 55% to 65%, but the programme impact remains significant. For cohort 2 households, the increase of 35 percentage points, from 54% to 89% in 36 months (Figure 4b), was slightly lower than for cohort 1, but is still a significant positive outcome that is attributable to the Graduation Programme.

[3] Outliers (households owning no livestock and those whose livestock value exceeded RwF.300,000, equivalent to two cows) were removed from this analysis.

Figure 4. House ownership



4.2.4. Consumption assets

Ownership of consumption assets was calculated based on a number of small domestic items including kitchen utensils (plates, saucepans, spoons, forks), furniture and household equipment (chairs, basins, jerry-cans) and electronic goods (radios, mobile phones). For cohort 1 households a 'consumption asset index' was constructed, with values ranging from 0 (asset-poor – no consumption assets owned) to 9 (asset rich – at least one of each of these 9 assets owned). Beneficiaries doubled the diversity of their consumption asset portfolio in the first year of the programme, from 3.4 to 6.9 distinct assets, and this continued to rise to over 7 assets in the 36-month and 48-month surveys. Over the same period, distinct assets owned by control group households fell from 4.5 to 3.9 (Figure 5a). This implies a sustained and significant increase in consumption asset ownership that is attributable to the Graduation Programme.

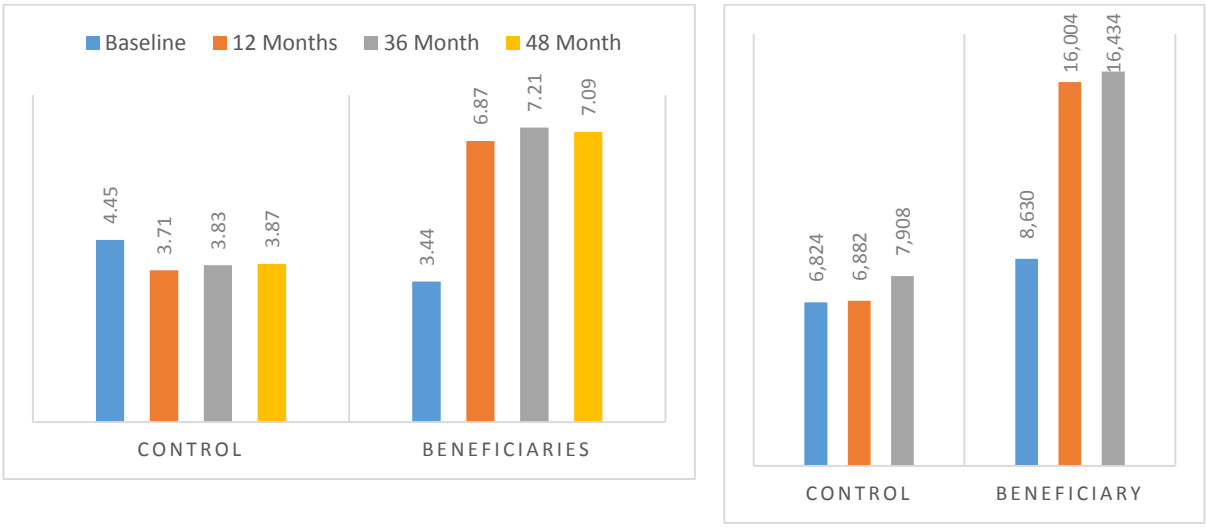
For most consumption assets there is a 'leapfrog' effect, with beneficiaries less likely than control households to own the asset at baseline but more likely to do so at the end of the evaluation period. For example, 25% of cohort 1 beneficiaries owned a mobile phone after 48 months, up from only 1% at baseline, while radio ownership increased from 15% to 42%. For control households, by contrast, mobile phone ownership increased from 3% to only 7%, but radio ownership fell from 21% to 7%. The most dramatic improvements are for kitchen utensils: cohort 1 households owning spoons/forks or plates increased from 25-28% to 89%, while control households owning spoons/forks fell from 51% to 46% and those owning plates fell from 45% to 38%. One possible explanation for the surge in domestic assets is that cohort 1 households purchased these when they moved into their newly constructed houses – as seen above, home ownership doubled thanks to the Graduation Programme.

The same consumption assets were tracked for cohort 2 households. There were small increases in ownership of these assets by control group households. Conversely, between baseline and 36 months later, beneficiary households more than

doubled their consumption assets ownership – for example, from 2.4 to 4.9 plates, 0.9 to 2.1 saucepans, and from 0.5 to 1.3 jerry-cans. Figure 5b shows the average value of consumption assets owned by cohort 2 beneficiaries and control group households over time, based on the number of assets owned by each household and their prices in local markets.[4] Since the number of most consumption assets owned by beneficiaries doubled during the evaluation period, the value of these assets would be expected to double, and this is the case –from RwF.8,630 (€11) to RwF.16,434 (€21). Over the same 36 months, control households experienced a much smaller increase of just 16%. These findings represent a significant and sustained improvement over time for beneficiaries relative to control group households.

Figure 5. Consumption assets

(a) cohort 1 – consumption asset index **(b) cohort 2 – value of consumption assets**



Note: The consumption asset index ranges from 0 to 9, where 0 is asset poor and 9 is asset rich

4.3. Housing and living conditions

The Graduation Programme enabled many poor households to improve their living environment, by investing in house maintenance or upgrading housing materials, building hygienic toilets and bathing facilities, acquiring beds or mattresses to replace grass mats for sleeping, and improving their sources of energy and lighting.

A large number of cohort 2 households upgraded their roofs, mainly by switching from tiles to iron sheets, during the first 3 years of the Graduation Programme, with support from Concern Rwanda. There were also factors external to the programme that drove this behaviour, notably the housing policy which required rural homes to have iron sheeting rather than grass-thatched roofs, and the government supported this by

[4] Prices were collected at baseline and were held constant over time for the empirical analysis.

distributing iron sheets in some areas, including Huye. The proportion of beneficiaries with iron sheets instead of tiles or thatch or other roofing materials increased from 28% at baseline to 68% by the 36-month survey. There was no comparable shift among control group households (see figure 6b), so this is a sustained and attributable programme impact. The proportion of cohort 2 households with no toilet fell from 27% to under 10% during this period, and also fell for control group households but by a smaller percentage, from 39% to 30%. There was also a doubling in cohort 2 households with bathing facilities from 40% to 78%, but this was matched by control group households, which increased from 47% to 87%.

The proportion of cohort 2 households whose adults were sleeping on grass mats (rather than on a mattress or in a bed) almost halved between the baseline and 36-month surveys, from 65% to 34%, while remaining constant among control group adults (Figure 6b). Many households switched away from using field waste for fuel, but there is no significant difference in those using firewood between beneficiaries (from 55% at baseline to 90% after 36 months) and control group (from 51% to 81%). The proportion of beneficiaries with no light at night fell from 48% to just 8% over this period, and fell by less for control group households, from 52% to 27%. Over 80% of beneficiaries and 50% of control group households were using candles for lighting at night, up from 41% and 27% respectively.

Figure 6. Housing conditions (cohort 2)

(a) iron sheet roofs **(b) adults sleep on grass mats**

4.4. Income, spending and livelihoods

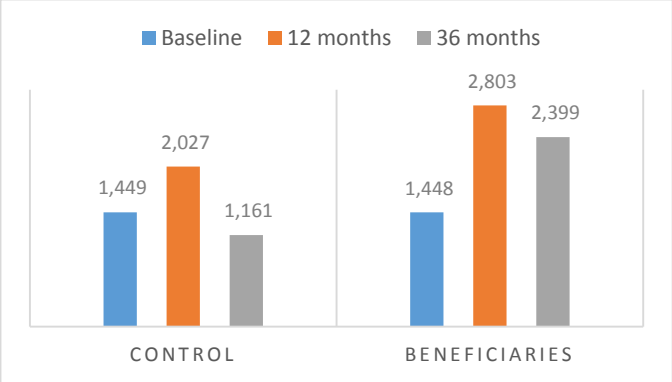
***Hypothesis**: Graduation Programme participants will have higher incomes, higher spending and more diversified livelihoods over time, relative to the control group.*

The Graduation Programme is expected to raise household income, not only because of cash transfers and other support provided during the programme cycle itself (this is a programme effect), but after support ends, as beneficiaries are expected to diversify their livelihoods and earn sustainably higher incomes than before (this is a programme impact).

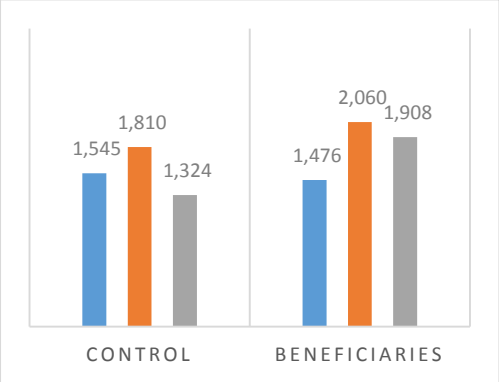
During the period of the cash transfer, total average weekly earnings of cohort 2 households almost doubled (Figure 7a). After 36 months average earnings fell by 15% from this level, but remained 62% higher than baseline level. Income of control group households followed the same cyclical trend, first rising, but only by 40%, and then falling dramatically to below baseline level after 36 months. Despite the slight decline in average income of beneficiaries in the second and third years of the programme, the precipitous decline in average income of the control group makes this a highly significant impact. Even if these figures reflect mainly the programme effect of cash transfers during the first year, the programme impact can be clearly seen by comparing incomes at baseline and three years later. The average weekly income of all households was RwF.1,448 (€1.8) at baseline, but 36 months later beneficiaries had weekly incomes that were RwF.1,238 (€1.5) higher than the control group.

Figure 7. Household income and food expenditure (cohort 2)

(a) income



(b) expenditure on food



At baseline, control group households spent slightly more on food than beneficiaries. One year later, beneficiaries and control group households had increased their weekly spending on food by 40% and 17% respectively. The difference of 23 percentage points is attributable to the programme. Three years after the programme started, spending on food remained 29% higher than at baseline for beneficiaries but was actually 14% lower than at baseline among the control group (Figure 7b). It is also interesting to compare the ratio of expenditure on food to total income. At baseline, average weekly spending on food was slightly higher than average weekly income across all households. (Income is typically under-reported in household surveys, but the relative trends are likely to be robust.) After 36 months beneficiaries were spending 80% of their income on food, while control group households were spending 114% – i.e. more than their reported income. Since the ratio of food expenditure to income is predicted to fall as income rises, this is an indicator of improving wellbeing for programme beneficiaries over time.

Information on sources of income was collected only from cohort 2 households. At baseline, almost all beneficiaries reported earning their income primarily as daily wage

labourers in agriculture (93%). After 12 months of cash transfers, many beneficiaries had diversified their livelihoods into selling harvested produce (15%), selling homemade beer (13%), receiving assistance from NGOs (10%), and trading agricultural products (9%). Only 1–2% of control group households were engaged in each of these activities after 12 months.

Three years (36 months) after the initial cash transfer, this income diversification was sustained. Only 64% of beneficiaries still earned income as agricultural day labourers, while 40% worked as other daily labourers, 16% received assistance from NGOs, and between 1% and 10% were engaged in agricultural trading; services; crafts; and selling harvested produce, livestock, animal products, homemade beer, other homemade drinks, or firewood. Apart from agricultural labour, which was a source of income for 75% of control group households, more beneficiaries earned income from every other livelihood activity, confirming that beneficiaries had significantly more diversified livelihoods, even after support from the Graduation Programme terminated. This would appear to be a positive indicator that the programme enabled beneficiaries to generate more resilient and sustainable livelihoods.

However, the qualitative research found that diversifying livelihood activities did not necessarily lead to higher incomes, and might even have been counter-productive. Most of the 36 livelihood activities pursued by participants were small-scale and generated low and erratic returns rather than a regular income. For instance, livestock rearing was one of the most popular income-generating activities (IGA) supported by the Graduation Programme, but livestock sales were irregular and costs of livestock production (feed, insemination, etc.) often exceeded the income earned from sales. Animals are also prone to disease and theft (Ajambo Akaliza *et al.* 2016: 6). Without investment in appropriate business skills training and a conducive environment – veterinary services, training in livestock husbandry, and so on – IGAs based on livestock could push programme participants deeper into poverty.

Beneficiaries that performed well attributed their success to investing some resources they received from the Graduation Programme in land for farming, thereby increasing their crop production and income from selling produce. Mixed farming – using animal manure to fertilise crops – also raised farm productivity. Conversely, beneficiaries that performed poorly cited constraints such as inability to buy a plot, and inability to invest because of accumulated debts that had to be paid off. ‘Slow movers’ were often households that had no access to land because of land scarcity in Rwanda , or had unfinished houses because of high construction costs and no external support in the form of iron sheets or doors and windows (Ajambo Akaliza *et al.* 2016: 8).

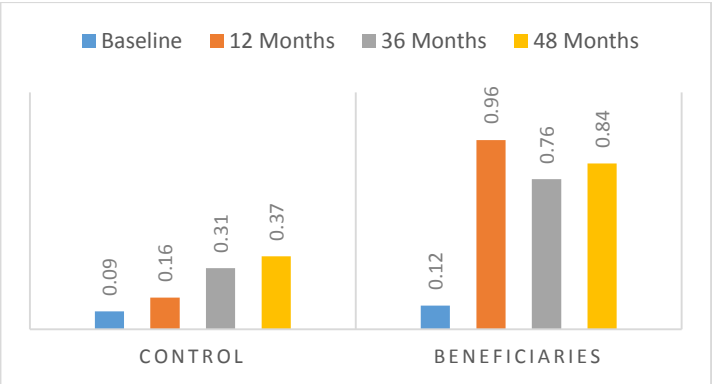
4.5. Financial inclusion

***Hypothesis**: Graduation Programme participants will <u>improve their capacity to save, borrow and repay loans</u> over time, relative to the control group.*

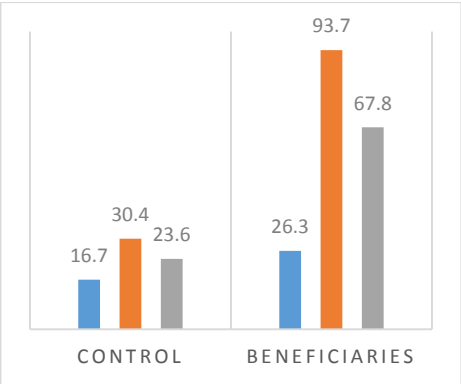
All Graduation Programme beneficiaries were required to open Savings and Credit Co-operative (SACCO) accounts, so that cash transfers could be paid into their accounts. Beneficiaries were also encouraged not to withdraw all their cash transfers but to save some, either in formal (microfinance) institutions like SACCOs or in informal savings groups like village savings and lending groups (SILCs). This messaging was very effective. Cohort 1 beneficiaries reporting they had savings increased from just 12% at baseline to 96% one year later. This fell back slightly to 84% after 48 months (Figure 8a), which still implies that the majority of cohort 1 beneficiaries acquired the savings habit thanks to the programme. This is a positive and sustained programme impact, but it declined relative to the control group over time, because a steadily rising number of control group households also started saving, from just 9% at baseline to 37% after 48 months (Figure 8a). The difference of 80 percentage points after 12 months narrowed to 47 percentage points after 48 months, possibly because of a requirement by local authorities for people to belong to tontines or other savings groups. Cohort 2 households display a similar trend, but with a smaller increase of control group households starting to save and a larger drop in beneficiaries saving between 12 and 36 months (Figure 8b). For both cohorts, therefore, the impact of the programme on savings behaviour can be summed up as sustained but declining.

Figure 8. Households with savings

(a) cohort 1



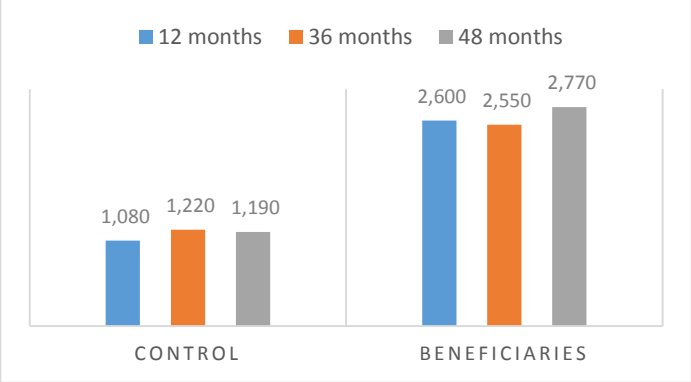
(b) cohort 2



One probable reason for the observed drop in savers after 12 months is that participants had less disposable income, as returns to IGAs were generally less than the income transferred during the cash transfer phase. There is also a seasonal pattern to savings, as farmers tend to have more disposable income – and therefore more capacity for saving – around harvest time in mid-year.

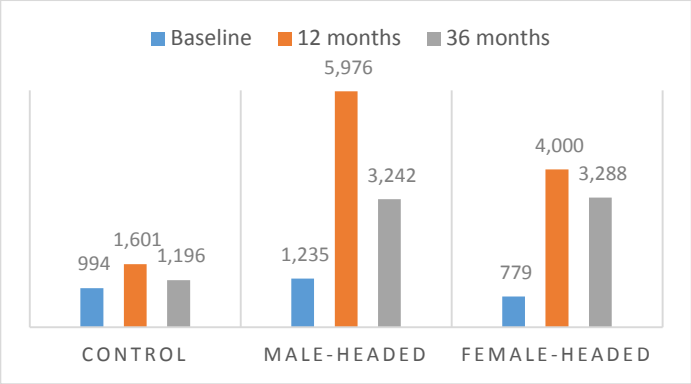
Among those households that saved, the average amount saved by cohort 1 beneficiaries was consistently more than twice the average amount saved by the control group, at 12 months, 36 months and 48 months, and remained more or less constant over time. Actual amounts saved were not insignificant. Over the three survey rounds cohort 1 households saved, on average, RwF.2,640 (€3.3) per month while control households saved RwF.1,160 (€1.5) per month (Figure 9).

Figure 9. Average amount saved (RwF, cohort 1)



Cohort 2 beneficiaries saved more than cohort 1. During the cash transfer phase, average savings rose four times, by both male- and female-headed households. 18 months later (18 months after the cash transfers ended) average monthly savings had fallen back, but remained more than twice the baseline level for male-headed and four times higher for female-headed households (Figure 10). Since there was only a small increase in savings by control households, this is a sustained but declining positive trend.

Figure 10. Average amount saved (RwF, cohort 2)



The cohort 1 survey started collecting data on borrowing only after 12 months, so there is no baseline, only three data points at 12, 36 and 48 months after the programme started. The proportion of cohort 1 beneficiaries who took a loan during the previous year increased from 20% to 39% and fell to 30%, which was significantly higher than the control group each round, at 10%, 13% and 15% respectively. For cohort 2 households, beneficiaries had consistently higher access to loans than the control group, from baseline (31% *versus* 14%) to 12 months (41% *versus* 19%) to 36 months (40% *versus* 21%). This suggests that beneficiaries had a greater propensity to borrow and were increasingly able to borrow after they joined the Graduation Programme, arguably because they were seen as more creditworthy than before.

The amounts borrowed by beneficiaries were also higher than those taken by the control group. For cohort 1 households, the average loan taken during the first year of the programme was RwF.5,800 and RwF.3,100 respectively. During the fourth year of the programme, the average loan size had risen substantially, to RwF.9,448 and RwF.5,666. The average loan taken by cohort 2 beneficiaries increased from just over RwF.4,000 at baseline to over RwF.7,000 after 12 months and after 36 months. Loans taken by the cohort 2 control group also increased during each survey round, and were slightly less on average than beneficiary loans.

Although the increase in savings and borrowing by programme beneficiaries is positive, most deposits and loans were not taken with formal financial institutions such as banks, but with semi-formal institutions such as cooperatives, SACCOs or *tontines,* and informal mechanisms such as traders and friends. This implies that rural households in Rwanda continue to face barriers to financial inclusion. On the other hand, qualitative research found that focus group respondents had generally positive attitudes towards saving and borrowing with *tontines* and cooperatives because they are simple to use, funds are easy to access, and interest rates and transactions costs are low. Belonging to more than one microfinance institution, to access low-interest credit for investment or to accumulate assets, was seen by many as a factor enabling graduation (Ajambo Akaliza *et al.* 2016: 9).

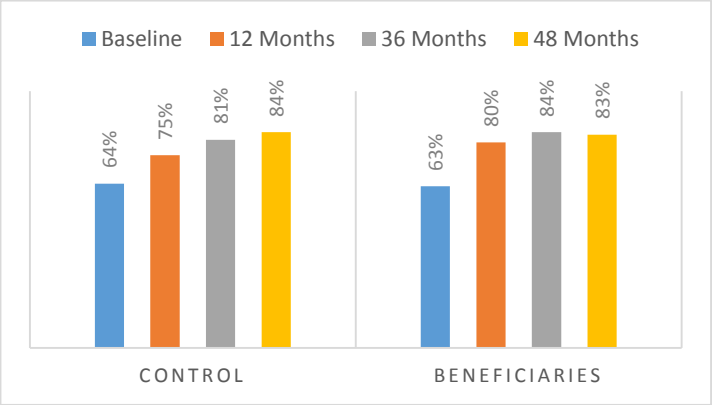
4.6. Education

***Hypothesis**: More households will send their children to school during and after participating in the Graduation Programme, relative to the control group.*

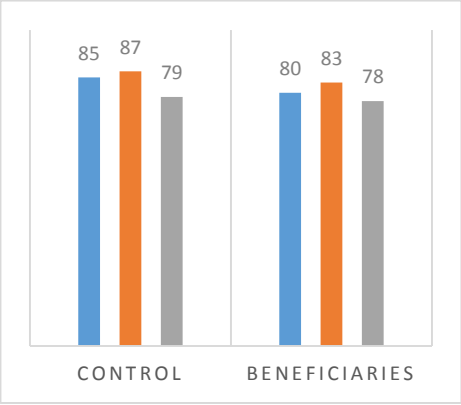
The analysis of children's access to education was conducted by establishing whether each child aged 7 to 16 was attending school, at home, out working, or begging. Although primary school enrolment improved in cohort 1 beneficiary households, from 63% to 83% between baseline and 48 months later, this is not an attributable impact of the Graduation Programme because the improvement was precisely matched in control group households – from 64% to 84% (Figure 11a). In the cohort 2 district, a reverse trend was observed: primary enrolment started above 80% for beneficiaries and control group children, but fell to below 80% after 36 months (Figure 11b). This reversal is a smaller absolute change over time than the progress recorded in the cohort 1 district, but again it is not attributable to the programme.

Figure 11. Primary school enrolment

(a) cohort 1



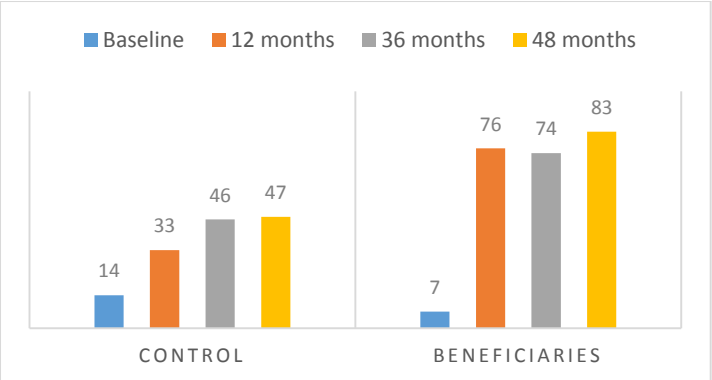
(b) cohort 2



Because these shifts were not large and because trends in beneficiary and control households mirrored each other, no significant impact on children's participation in education can be discerned and attributed to the Graduation Programme. One reason could be that the government provides nine years of free basic education, and this effect explains the high levels of enrolment and is likely to be much larger than the income effect of the Graduation Programme.

Although primary education is free in Rwanda, there are associated costs such as uniforms which are financial access barriers for poor parents. Affordability of school uniforms was therefore added as an indicator of access to education for cohort 1 households. There was a rapid and sustained rise in the proportion of cohort 1 beneficiaries who could afford uniforms for most or all of their children, from just 7% at baseline to 76% after 12 months and 83% after 48 months (Figure 12). This can be attributed to rising incomes due to the programme. However, the impact is partially offset by an improvement in the same indicator among control group households, from 14% at baseline to 47% after 48 months. This reduced the attributable impact of the programme from 76 to 43 percentage points.

Figure 12. Children with school uniforms (cohort 1)



4.7. Health and hygiene

***Hypothesis**: Households that participate in the Graduation Programme will increase their access to formal health care, and will improve hygiene and health prevention behaviours over time, relative to the control group.*

4.7.1. Access to health care

Ill-health was identified as a constraint to graduation in the qualitative research (Ajambo Akaliza *et al.* 2016), because it prevents adults from working and because costs of treatment are high and can push poor people deeper into poverty.

Several indicators of the affordability and use of heath care were investigated, including whether households have health insurance, who paid for this insurance, whether they can afford to pay for fees and medicines, and their health-seeking behaviour when they have a sick adult or child.

The proportion of cohort 2 households with health insurance increased dramatically during the first year of the programme, from 59% to 98%, but this was mainly a programme effect, since purchase of the *mutuelle de santé* card was a requirement of participation in the programme. During the same period, control group households with health insurance also increased but by much less, from 64% to 73%. There was a slight decline in the next two years, with 85% of beneficiaries and 75% of control group households still having health insurance after 36 months (Figure 13a). Since buying a *mutuelle de santé* card was no longer compulsory after beneficiaries stopped receiving programme support, this indicates that many recognised the advantages of continuing to purchase health insurance. This is confirmed by a doubling in the proportion of beneficiaries who reported paying for their own health insurance – rather than the local authority, an NGO, or someone else buying it for them – from 15% at baseline to 30% one year later and also three years later. There was no increase among control households buying their health insurance, which started at 9% and stood at 7% three years later.

These findings must be interpreted with caution. Health insurance is heavily promoted by the government, and *mutuelle de santé* cards are provided for free to extremely poor individuals. The differences between beneficiary and control households probably reflect the fact that Graduation Programme households no longer receive government support and have to buy their health cards as they are now considered better off, while control households are still considered to need the subsidy.

Another indicator of access to health care is health-seeking behaviour. Respondents were asked whether, when a child in their household is sick, they do nothing, self-medicate or consult informal health-care providers, on the one hand, or take the child to a formal health-care provider – health workers or health centres. The proportion of

cohort 2 households that consulted health workers or health centres increased from baseline to 3 years later, from 53% to 82% for sick adults and from 62% to 84% for sick children. There was a corresponding decline in beneficiary households doing nothing, consulting a healer, or self-medicating in response to illness. For control group households, smaller increases were recorded in their use of formal health services, from 56% to 68% for adults and from 53% to 60% for children (Figure 13b).

Figure 13. Health insurance and health-seeking behaviour (cohort 2)

(a) households with health insurance **(b) sick child gets formal health care**

Another indicator of access to health care is ability to pay the cost of fees and medicines. Even with health insurance, patients have to make a contribution equivalent to 15% of the cost of consultations or treatment, and they have to buy any medicines prescribed. The proportion of cohort 2 beneficiaries who reported that they can afford to pay their contribution of health fees increased from 62% at baseline to 85% after 36 months, but increased only from 60% to 65% among the control group over the same period. Households that could afford medicines increased from 12% to 54% of beneficiaries and 10% to 24% of the control group. Both these findings represent a significant difference-in-differences programme impact.

4.7.2. Hygienic behaviours

Indicators of good hygiene and health prevention practices include using soap for washing, changing clothes, and sleeping under mosquito nets. All three indicators followed a similar trend in cohort 2: beneficiaries improved dramatically in the first 12 months but then lost some of these gains in the subsequent 24 months, but ended the evaluation period better off than at baseline and better off than control group households, who also improved but to a lesser extent. The overall programme impact was therefore positive and sustained in the medium term, though the erosion over time raised concerns about long-term sustainability.

There was a substantial surge in beneficiary households using soap, from 15% at baseline to 74% after 12 months, presumably in response to behavioural change messages and resources delivered by the Graduation Programme, but this fell back

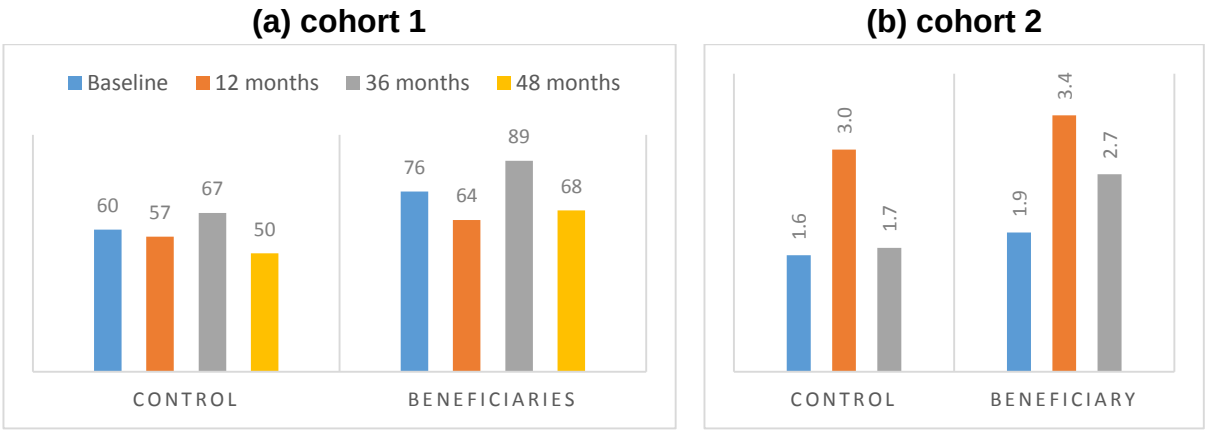
to 50% by 24 months later, after the cash transfers stopped. Nonetheless, this remains significantly higher than at baseline and also significantly higher than control group households, whose use of soap increased from 8% to 23% and then to 27%, which is possibly a spillover effect – learning from beneficiary households – but only to a limited extent, because these households reside in different communities.

Similar results were found for changing clothes. Very few individuals surveyed changed their clothes daily at baseline (12% of beneficiaries and 7% of the control group), but this increased dramatically during the first 12 months of the programme for beneficiaries (to 54%) but by much less for control group households (to 16%). After 36 months there was a partial fall-back among beneficiaries (to 43%) but no shift among the control group (which remained at 16%).

The proportion of cohort 1 households using mosquito nets as a protection against malaria is consistently higher than control group households, but has fluctuated between 64% and 89% from baseline to four years later (Figure 14a). Similarly, cohort 2 households have consistently reported more family members sleeping under mosquito nets than control group households, but again this has fluctuated between 1.9 and 3.4 individuals from baseline to three years later (Figure 14b). For both these indicators, a positive but declining impact is recorded, and it is not clear that these gains will be sustained into the future.

The relatively high proportion of control group households using mosquito nets in both cohorts could be explained by government interventions unrelated to the Graduation Programme. Because of the high prevalence of malaria in Rwanda, the government has been distributing mosquito nets for free to all households for some years, and runs information campaigns about the importance of sleeping under mosquito nets. The graduation programme complemented these efforts.

Figure 14. Use of mosquito nets



Note: (a) proportion of cohort 1 beneficiaries with household members sleeping under mosquito nets
(b) average number of cohort 2 household members sleeping under mosquito nets

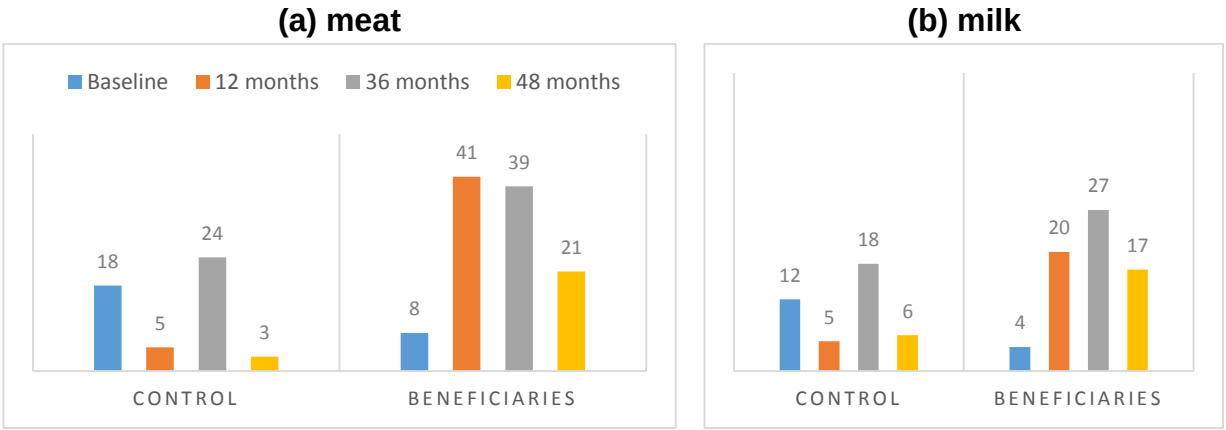
4.8. Food security

***Hypothesis**: Graduation Programme participants will improve their food security over time, relative to the control group.*

Different indicators of food security were collected from cohort 1 and cohort 2 households, which means that findings are not comparable across cohorts, but allows a more diverse set of impacts to be reported.

Cohort 1 households were asked about their consumption of meat and milk, as these non-staple foods are associated with a rising standard of living. For both the proportion of beneficiary households eating meat at least once a months and the proportion drinking milk at least once a week, there was a significant increase in the first 12 months, from 8% to 41% and 4% to 20%, respectively. Thereafter, meat consumption held steady while milk consumption continued to rise between 12 and 36 months since baseline, but both fell back by 48 months, though remaining significantly higher than baseline levels (Figure 15). This implies that the income effect dominated initially, with cash transfers financing improved food consumption, but that this effect dissipated after the cash transfers stopped. Control group households display no clear pattern, but were consuming meat and milk less frequently in the final survey round than at baseline. We conclude that the overall programme impact on meat and milk consumption was significantly positive and sustained, but declining over time.

Figure 15. Households consuming meat and milk (cohort 1)

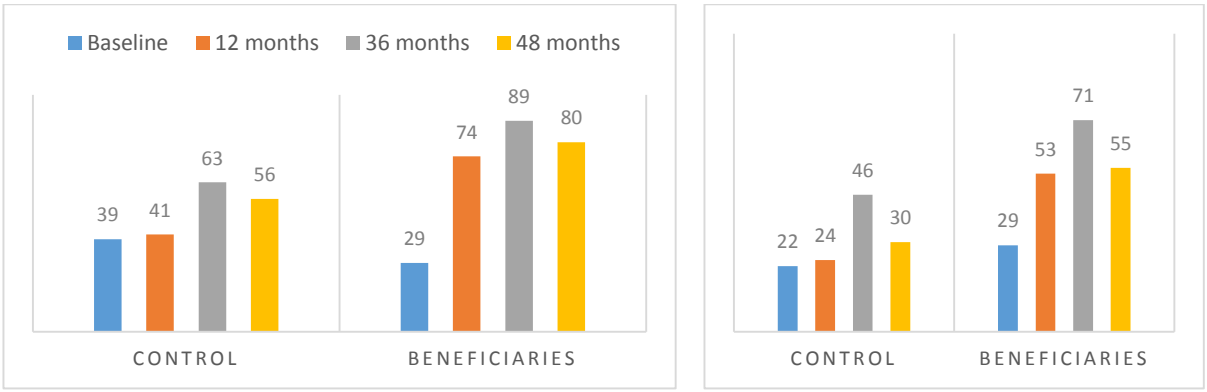


Cohort 1 households were also asked about whether they were growing their own vegetables and fruit, as this was encouraged by the programme for improved diets. Beneficiaries were significantly more likely to grow their own vegetables and fruit after joining the Graduation Programme than before. An initial surge during the first year of the programme (from 29% to 74% of households growing vegetables and from 29% to 53% growing fruit) continued for the next two years (to 89% and 71% respectively), before falling back slightly in the final survey period. The significance of this impact

was reduced by a similar trend among control group households, which were also more likely to grow vegetables and fruit over the evaluation period (up from 39% to 56%, and 22% to 30%, from baseline to 48 months later) (Figure 16). The increase among beneficiary households is most likely due to the promotion of kitchen gardens by the Graduation Programme, while the rise among control group households could be due to a 'demonstration effect', if they learned from beneficiaries and adopted the same practices.

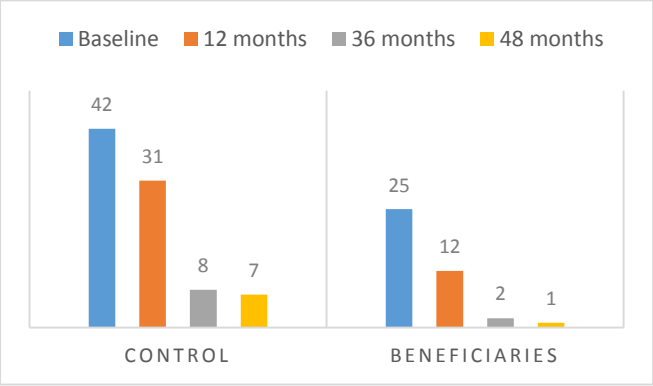
Figure 16. Households growing vegetables and fruit (cohort 1)

(a) vegetables **(b) fruit**



A subjective indicator of perceived nutrition status was applied, in the absence of anthropometric measurement of individual heights and weights. There was a steady decline each survey round in the proportion of respondents that reported perceived symptoms of malnutrition among their household members, both for beneficiaries and control group households (Figure 17). This is a sustained positive outcome, but it is not an attributable impact of the programme, because there is no significant difference in trends in perceived malnutrition between beneficiaries and the control group.

Figure 17. Perceived malnutrition (cohort 1)



For cohort 2, two different indicators for food security were estimated: meals per day, and dietary diversity. The number of meals eaten by adults and children in the household each day is a common indicator of food insecurity. The majority of adults (beneficiaries =70%, control group =75%) ate only one meal on the day before they

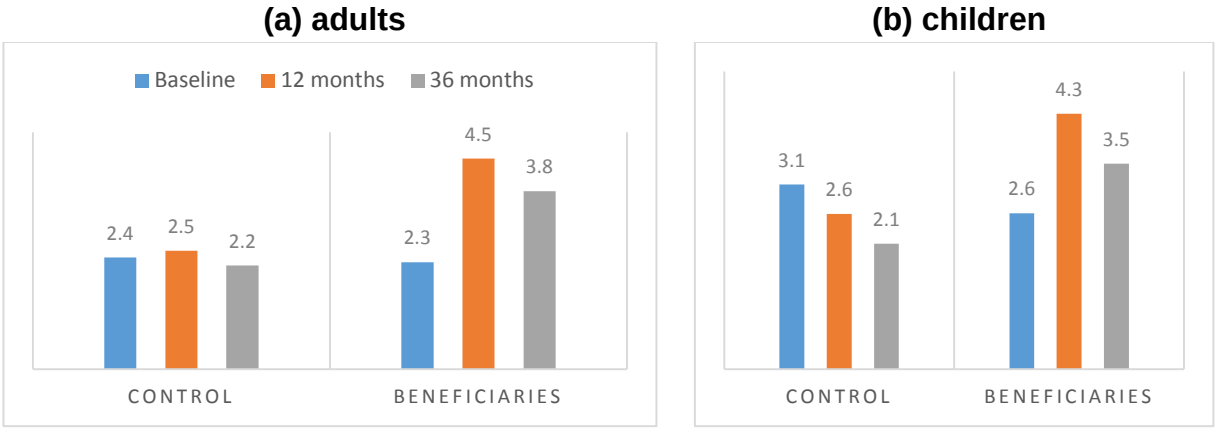
were interviewed. For both adults and children in beneficiary households, a similar trend is observed: meals per day increased during the first year of the Graduation Programme, but much of the gains were lost in the next two years. Adults went up from 1.3 to 1.8 and down to 1.6 meals, while children went up from 1.6 to 2.5 and down to 2.1 meals per day (Figure 18). Control group households showed no significant change during this period, so the programme impact is significant and sustained but declining.

Figure 18. Meals per day (cohort 2)

Dietary diversity is a simple but robust proxy of food insecurity. The greater the number of distinct food groups (cereals, meat, vegetables, etc.) consumed in a day, the more food secure the individual is.[5] The pattern observed for cohort 2 households is similar as that for meals per day. For both adults and children, the number of food groups eaten first rises (from 2.3 to 4.5 and 2.6 to 4.3 respectively), then falls (from 4.5 to 3.8 and from 4.3 to 3.5 respectively). For control group adults there is no change over time, but for control group children the number of food groups fell from 3.1 to 2.1 between baseline and 36 months later, leaving beneficiaries significantly better off. The trend for adult and child dietary diversity is thus positive but declining after the cash transfer phase of the programme.

[5] The dietary diversity index includes 12 food groups for adults – cereals; tubers and roots; legumes, nuts and seeds; milk and milk products; eggs; fish; meat; sweets; oils and fats; vegetables; fruit; spices, condiments and beverages – and 8 food groups for children, since some groups are combined.

Figure 19. Dietary diversity index (cohort 2)



Note: The dietary diversity index ranges from 0 to 12 for adults and 0 to 8 for children.

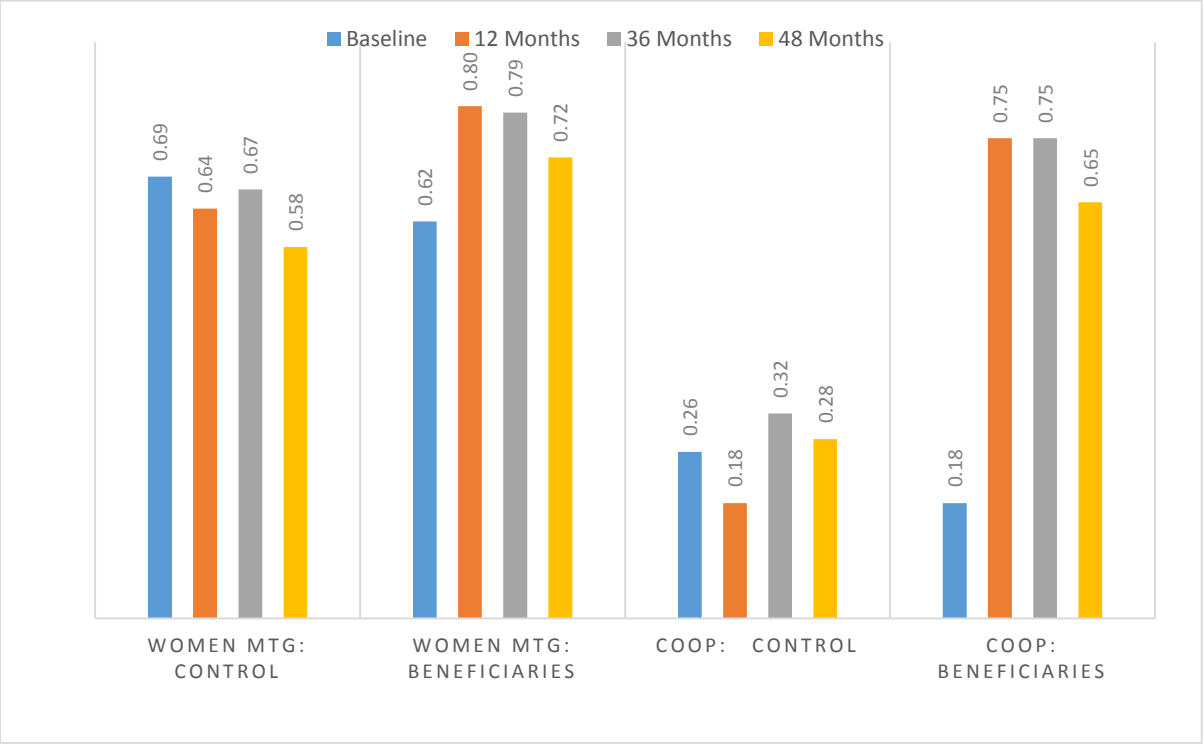
4.9. Social inclusion

***Hypothesis**: Households that participate in the Graduation Programme will be more engaged in community activities than before, relative to the control group.*

Social inclusion, measured by individuals' social networks and engagement in communal activities, is known to be important for both material and relational wellbeing. Poor and vulnerable individuals often withdraw or are excluded from social activities, either because poverty reduces the time and money they have available for social events and commitments – all their resources have to be allocated to securing their basic needs – or because they have feelings of shame (for example if they do not have good enough clothes to attend meetings). The Graduation Programme is expected to help individuals to engage more in social activities, by empowering them both economically and socially. Indicators of social inclusion that were tracked in the Graduation Programme evaluation include women's participation in women's meetings, household membership of cooperatives, and whether respondents feel respected by their communities.

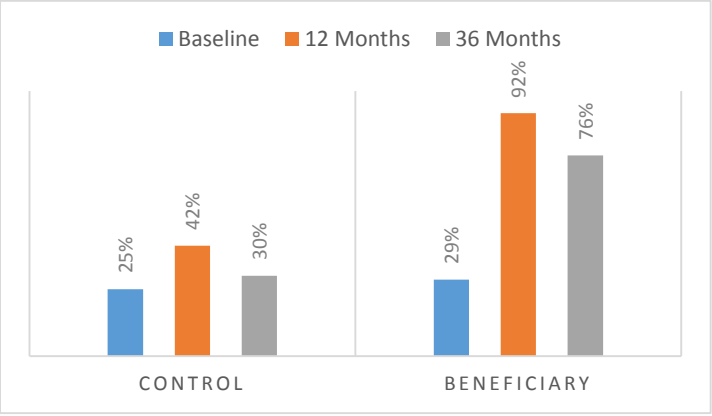
There was an immediate rise in participation by cohort 1 women in women's meetings after the Graduation Programme started, from 62% to 80% of households, falling back to 72% after 48 months (Figure 20). Over the same period participation by women from control group households fell from 69% to 58%, so the programme's impact is assessed as significant and sustained. There was a more substantial surge in cohort 1 membership of cooperatives, up from 18% to 75% of households within 12 months, which held steady after 36 months but dropped back to 65% after 48 months. Control group households fluctuated in cooperative membership, from 26% of households at baseline to 28% after 48 months, so this impact is also positive, significant and sustained.

Figure 20. Attendance at women's meetings and membership of cooperatives (cohort 1)



Membership of cooperatives by cohort 2 households also surged between baseline and 12 months, from 29% to 92% of beneficiaries, but fell back to 76% after 36 months. Over this period, control group households that were members of cooperatives increased from 25% to 42% and fell back to 30%, so the large significant improvement in this indicator among beneficiaries was sustained (Figure 21). For women's participation in women's meetings there are no significant differences in the cohort 2 survey.

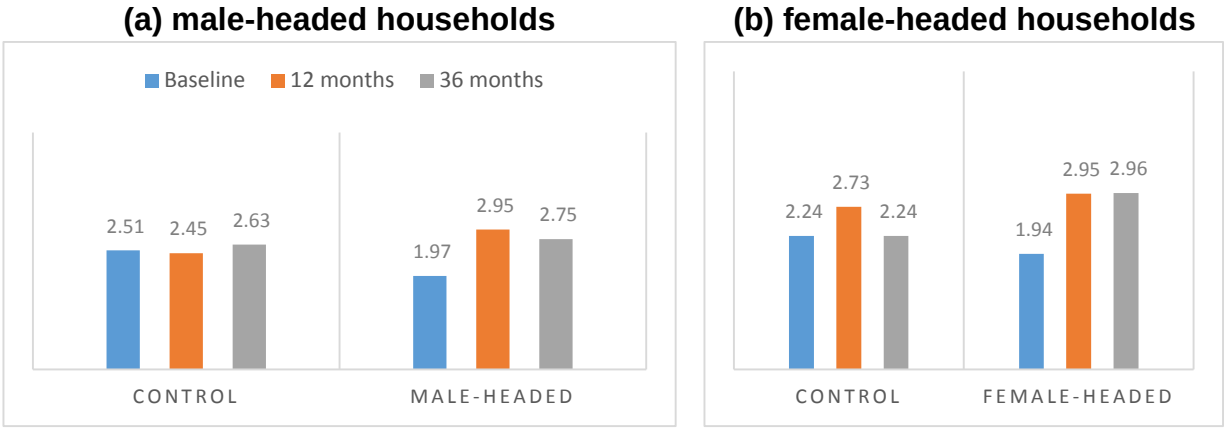
Figure 21. Membership of cooperatives (cohort 2)



A subjective indicator of social inclusion or 'relational wellbeing' was included in the cohort 2 surveys. Respondents were asked if they feel well respected by their communities, on a Likert scale ranging from 1 (not respected at all) to 5 (highly

respected). This indicator was disaggregated by male- and female-headed households. Control group households felt more respected at baseline than both male- and female-headed beneficiary households, implying that the programme targeted households that were extremely poor as well as socially excluded – i.e. both economically and socially poor. Male and female respondents reported almost identical improvements during the first year, from an average score of just under 2 to close to 3. This level was sustained by female respondents after 36 months but dropped slightly for male respondents. Control households displayed no change over this period, so they were 'leap-frogged' by beneficiaries.

Figure 22. Feeling respected in the community (cohort 2)



Note: The indicator for self-reported respect from the community ranges from 1 to 5.

The qualitative research confirmed the importance of personal relationships in securing livelihoods, and also in terms of psycho-social impacts such as self-respect and empowerment. Belonging to a savings group or cooperative was identified as an enabler or potential enabler of graduation. The qualitative report drew a distinction between two forms of social cohesion which have both improved. 'Horizontal cohesion' has been enhanced because participants interact more positively with their neighbours than before the graduation programme. Women in focus groups affirmed that they were previously embarrassed to go to community events, but this has changed: "Whenever I passed by my neighbours' houses they abused me because I was poor, but they no longer insult me because of what I have" (female participant, quoted in Ajambo Akaliza *et al.* 2016: 14).

'Vertical cohesion' also improved, meaning that programme participants and were less intimidated by people in authority because their confidence had improved: "participants felt increasingly able to approach cell and sector level officials directly (meso-level) compared to before the programme, when participants reported feeling reluctant to approach people in positions of power or to enter a SACCO" (Ajambo Akaliza *et al.* 2016: 14). Some 'fast mover' households reported having a stronger

voice in their community now, with some even having been voted into positions of leadership.

Some negative social impacts were also uncovered by the qualitative research. Firstly, resentment by non-participants led to loss of friendships, withholding of social assistance, and theft of assets. Secondly, some 'slow mover' households reported intra-household conflict, even domestic violence, around control and decision-making over cash. Thirdly, some participants who did not 'graduate' from the programme were stigmatised for failing to capitalise on the resources they received.

4.10. Graduation

Earlier we drew a distinction between 'endogenous graduation' (where each participant must reach a threshold level of income or assets to exit from poverty and then stops receiving programme support), and 'exogenous graduation' (where the programme cycle runs for a fixed time-period after which all participants exit the programme simultaneously).

Concern Rwanda's Graduation Programme follows the 'exogenous graduation' model – beneficiaries receive support only for a defined period, after which they exit the programme. However, it also aims to facilitate sustained 'developmental graduation', whereby programmes "provide comprehensive and integrated benefits that create opportunities for human capital and other productive investment, livelihoods activities and employment" (Samson 2015: 14). One implication of 'exogenous exit' is that there are no pre-defined criteria for assessing whether households have 'graduated' out of extreme poverty or not. However, it is possible to estimate the percentage of households that have graduated by applying graduation criteria retrospectively. In this section we present sensitivity analysis based on different thresholds for multiple indicators of poverty and deprivation. Thereafter, we present data from the quantitative surveys on factors that are correlated with positive trajectories in key indicators, and qualitative evidence on household characteristics that are associated with being a 'fast moving' or 'slow moving' beneficiary.

4.10.1. Graduation sensitivity analysis

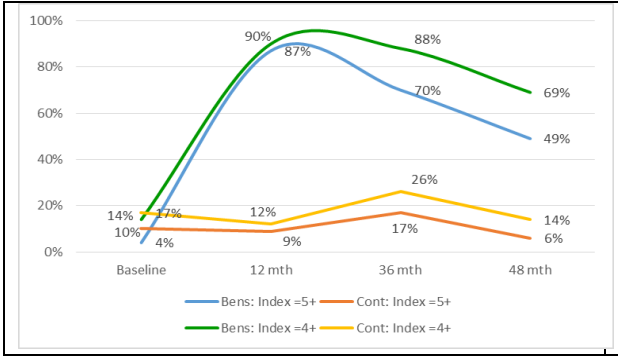
Several proxy indicators were selected to perform an analysis of the number of participants who 'graduated' out of extreme poverty, during and after the programme period. Given the range and complexity of indicators that were monitored at several points in time, presenting a single figure for the number of graduates would be misleading. Examining different indicators and setting different thresholds for each allows a sensitivity analysis to be conducted. For cohort 1 households, results are reported for deprivation and ownership of productive assets and consumption assets. For cohort 2 households, results are reported for income, savings, food security and respect from the community.

Deprivation (cohort 1)

As explained earlier, a deprivation index was compiled from three indicators relating to food security and health. The index takes a value ranging from 0 (extreme deprivation) to 8 (food secure with good access to health care and medicines). Setting a higher threshold score of 5 on this index, Figure 23 reveals that only 4% of cohort 1 beneficiaries achieved this at baseline, but an impressive 87% had graduated after just 12 months, falling back to 70% and 49% after 36 and 48 months. 'Net graduation'[6] rates were 84, 59 and 49 percentage points respectively. If a lower bar is set of only 4 for this index, greater numbers of beneficiaries graduated – 90%, 88% and 69% in each survey round, from a slightly higher baseline of 14%.

Figure 23. Deprivation index

Threshold value 4 or 5, % of households graduated (cohort 1)



Deprivation index	Baseline	12 mth	36 mth	48 mth
Bens: Index =5+	4%	87%	70%	49%
Cont: Index =5+	10%	9%	17%	6%
Bens: Index =4+	14%	90%	88%	69%
Cont: Index =4+	17%	12%	26%	14%

D-i-d	Baseline	12 mth	36 mth	48 mth
Deprivation index =5+	-6	+84	+59	+49
Deprivation index =4+	-3	+81	+65	+58

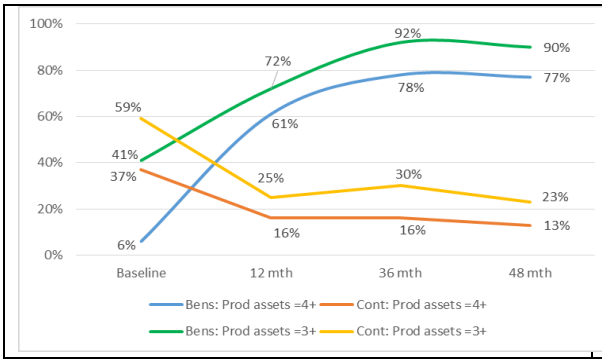
Productive assets (cohort 1)

Cohort 1 households were monitored for ownership of 8 productive assets, including land, livestock, farm tools and bicycles. A threshold value of 3 out of 8 is robust because only 6% of beneficiaries owned 3 discrete productive assets at baseline. The graduation rate – using ownership of at least 3 discrete productive assets as the criterion – was 61% at 12 months and actually increased thereafter, to 78% and 77%. Graduation rates for ownership of at least 4 productive assets were 72%, 92% and 90% respectively (Figure 24). So graduation rates are sustained between 36 and 48 months, and 'net graduation' rates continue to rise – from 65 to 80 to 85 percentage points for at least 3 assets, and from 76 to 93 to 95 percentage points for at least 4 assets – mainly because control group households lost some productive assets relative to baseline.

[6] 'Net graduation' is calculated using difference-in-differences (d-i-d). For instance, after 36 months the net graduation rate of 59 percentage points for a poverty threshold of 5 indicators is calculated as the change in beneficiaries who achieved 5 indicators between baseline and 36 months (=70%–4%) minus the change in control group households who achieved 5 indicators between baseline and 36 months (=17%–10%).

Figure 24. Productive assets

Threshold value 3 or 4, % of households graduated (cohort 1)



Productive assets	Baseline	12 mth	36 mth	48 mth
Bens: Prod assets =4+	6%	61%	78%	77%
Cont: Prod assets =4+	37%	16%	16%	13%
Bens: Prod assets =3+	41%	72%	92%	90%
Cont: Prod assets =3+	59%	25%	30%	23%

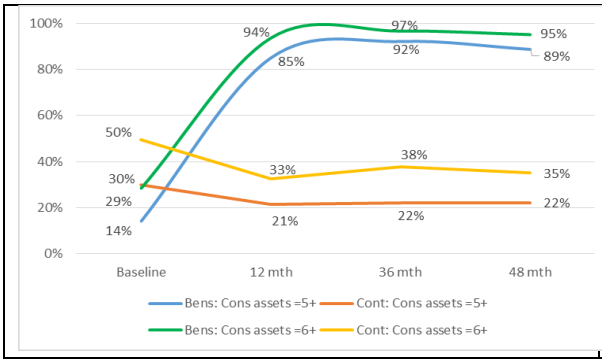
D-i-d	Baseline	12 mth	36 mth	48 mth
Productive assets = 4+	-31	+76	+93	+95
Productive assets = 3+	-18	+65	+80	+85

Consumption assets (cohort 1)

Cohort 1 households were monitored for their ownership of 9 consumption assets, including kitchen utensils, furniture and electronic goods. At baseline, only 14% of beneficiaries owned 5 or more of these 9 assets. Figure 25 illustrates a rapid escalation in the proportion of beneficiaries who achieved this asset threshold, to 85% within 12 months, an improvement which was maintained after 36 and 48 months, which is an indicator of sustained graduation. 'Net graduation' rates are also extremely high, exceeding 80% at 36 and 48 months for both asset thresholds, driven by a decline in consumption asset ownership among control group households.

Figure 25. Consumption assets

Threshold value 5 or 6, % of households graduated (cohort 1)



Consumption assets	Baseline	12 mth	36 mth	48 mth
Bens: Cons assets =5+	14%	85%	92%	89%
Cont: Cons assets =5+	30%	21%	22%	22%
Bens: Cons assets =6+	29%	94%	97%	95%
Cont: Cons assets =6+	50%	33%	38%	35%

D-i-d	Baseline	12 mth	36 mth	48 mth
Cons assets = 5+	-16	+79	+86	+82
Cons assets = 6+	-21	+82	+80	+81

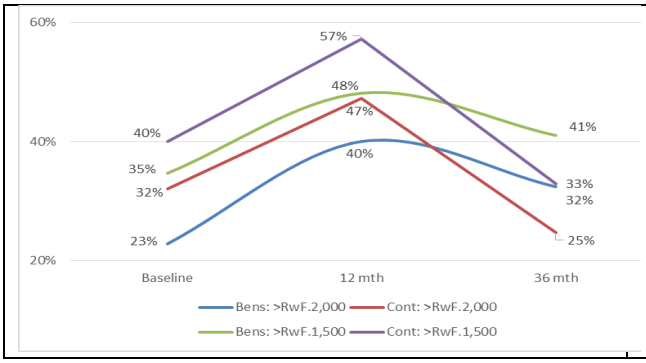
Income (cohort 2)

One indicator of graduation that was selected for cohort 2 beneficiaries is household income, proxied by weekly earnings. The proportion of beneficiaries earning more than RwF.2,000 a week almost doubled, from 23% at baseline to 40% during the cash transfers period of the programme – so this might have been more of a programme effect than an independent impact – then fell back somewhat to 32% after 36 months. One third (32%) of control group households earned more than RwF.2,000 a week at baseline, and this figure increased to almost half (47%) after 12 months, but this fell back sharply to only a quarter (25%) after 36 months (Figure 26). These two patterns

generate a relatively modest 'net graduation' rate of only 2 percentage points after 12 months and 17 percentage points after 36 months.

Figure 26. Weekly earnings

>RwF.2,000 or RwF.1,500, % of households graduated (cohort 2)



Weekly income	Baseline	12 mth	36 mth
Bens: RwF >2,000	23%	40%	32%
Cont: RwF >2,000	32%	47%	25%
Bens: RwF >1,500	35%	48%	41%
Cont: RwF >1,500	40%	57%	33%

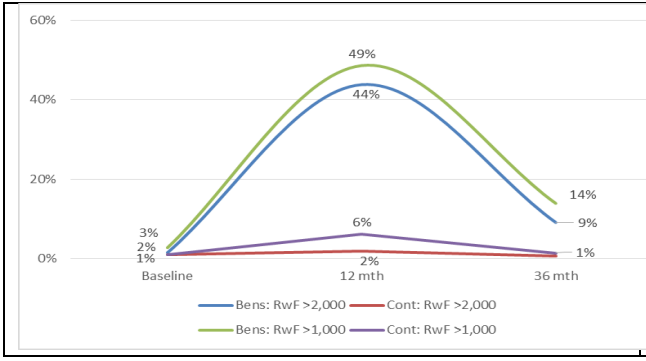
D-i-d	Baseline	12 mth	36 mth
RwF >2,000	-9	+2	+17
RwF >1,500	-5	-4	+13

Savings (cohort 2)

Graduation programme beneficiaries were encouraged to save, and this is clearly reflected in the surge in cohort 2 households with a significant amount of cash savings, from virtually zero at baseline to close to half of households after 12 months (Figure 27). However, this collapsed back towards zero after 36 months, suggesting that the initial surge was mainly a programme effect. (Figure 8b above showed that two-thirds of cohort 2 beneficiaries had some savings after 36 months, but this analysis implies that most of these households held savings below the RwF.2,000 threshold.) Since there was little change in control group households with significant savings over this period, the 'net graduation' rate is significant after 12 months but minimal after 36 months. By this single indicator, the graduation of cohort 2 households was not sustainable.

Figure 27. Household savings

>RwF.2,000 or RwF.1,000, % of households graduated (cohort 2)



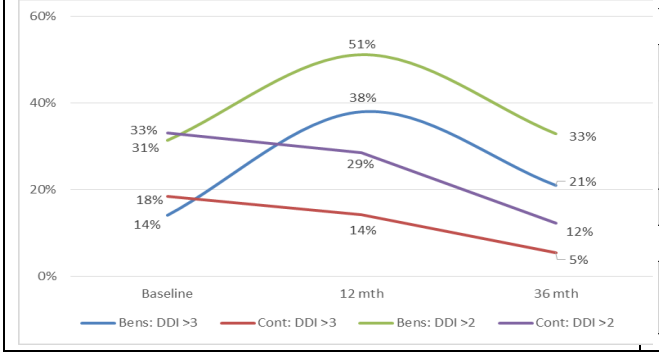
Savings	Baseline	12 mth	36 mth
Bens: RwF >2,000	2%	44%	9%
Cont: RwF >2,000	1%	2%	1%
Bens: RwF >1,000	3%	49%	14%
Cont: RwF >1,000	1%	6%	1%

D-i-d	Baseline	12 mth	36 mth
RwF >2,000	0	+41	+8
RwF >1,500	+2	+41	+11

Food security (cohort 2)

A robust indicator of food security is dietary diversity. The Dietary Diversity Index of children in cohort 2 households improved in the first 12 months of the programme, but fell back almost to baseline levels after 36 months (Figure 28). This suggests that graduation rates are close to zero for cohort 2 beneficiaries (just 2% for DDI >2 and 7% for DDI >3). However, cohort 2 control group households experienced a steady deterioration in their children's dietary diversity, for unknown reasons, so 'net graduation' rates are significant and positive (28 percentage points after 12 months and 20 percentage points after 36 months for DDI >3).

Figure 28. Children's Dietary Diversity Index >3 or >2, % of households graduated (cohort 2)



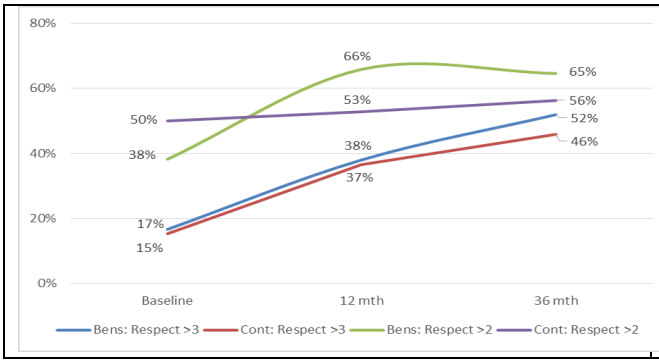
Child DDI	Baseline	12 mth	36 mth
Bens: DDI >3	14%	38%	21%
Cont: DDI >3	18%	14%	5%
Bens: DDI >2	31%	51%	33%
Cont: DDI >2	33%	29%	12%
D-i-d	**Baseline**	**12 mth**	**36 mth**
Child DDI >3	-4	+28	+20
Child DDI >2	-2	+24	+22

Respect (cohort 2)

Feeling respected by one's community is a non-material, self-reported indicator of the graduation programme's impacts. Cohort 2 beneficiaries reported sustained increases in feeling respected by their communities, which could be interpreted as an indicator of 'psychosocial graduation', with beneficiaries scoring at least 3/5 on this indicator rising from 17% at baseline to 52% after 36 months (Figure 29). However, control group households also improved on this indicator, which reduces the 'net graduation' rate to 0 percentage points after 12 months and 5 percentage points after 36 months.

Figure 29. Feeling respected

>3 or >2, % of households graduated (cohort 2)



Respected	Baseline	12 mth	36 mth
Bens: Respect >3	17%	38%	52%
Cont: Respect >3	15%	37%	46%
Bens: Respect >2	38%	66%	65%
Cont: Respect >2	50%	53%	56%

D-i-d	Baseline	12 mth	36 mth
Respect >3	+1	0	+5
Respect >2	-12	+25	+20

4.10.2 Graduation correlates

Descriptive statistics reflect averages, but the mean or the median can conceal interesting patterns and distributions within a survey population. It is possible, for instance, that relatively few exceptional performers can pull the mean score of an indicator upwards, creating a misleadingly positive inference about the success of the programme across the population. In the final stage of quantitative analysis, a multinomial logit model was used to identify factors that were more likely to be associated with beneficiary and control households either moving sustainably above graduation thresholds over time, moving late above graduation thresholds, or declining over time.[7] Factors identified for this analysis include demographic characteristics (gender of household head, household size) and initial assets of participants: human capital (labour capacity, literacy), physical capital (home ownership), natural capital (land registration, plot size) and social capital (cooperative membership, outside support). Results from the multivariate analysis revealed the following:

- **Gender of household head**: Male- and female-headed households are equally likely to belong to each graduation category, so this characteristic is not a determinant of graduation outcomes.
- **Household size**: On balance, larger households show more positive graduation outcomes than smaller households, especially for beneficiaries, but this is an ambiguous finding as larger households tend to have more labour capacity (positive) but also higher dependency ratios (negative).
- **Labour capacity**: Beneficiary households with more labour capacity (>1 adult) are more likely to accumulate assets over time than those with limited labour capacity (1 adult).
- **Literacy**: Respondents who are able to read and write show sustained reductions in deprivation and increased accumulation of consumption assets.

[7] A technical explanation of the multinomial logit model is provided in the 1st cohort 48-month Consolidated Report.

Control group households with literacy skills also show positive but less powerful improvements in these indicators of graduation.

- **Home ownership**: Households that owned their house at baseline are significantly more likely to achieve sustained improvements in wellbeing over time, in terms of asset ownership (especially for beneficiaries) and reduction in deprivation (especially for the control group).
- **Land registration**: Households living on registered land achieved more sustainable graduation outcomes than those that did not, but this finding holds equally for beneficiaries and control group households, so it cannot be attributed to the Graduation Programme.
- **Plot size**: There is no difference in graduation outcomes for beneficiaries with larger plots (>1/8 ha) compared to those with smaller plots (<1/8 ha), so this is not a strong indicator of graduation.
- **Cooperative membership**: Beneficiary households that are members of cooperatives are more likely to achieve sustained asset accumulation, but this has a less positive impact on the control group.
- **Outside support**: Receiving non-programme support – e.g. in the form of remittances – increases the likelihood of sustainable graduation for beneficiaries and has no impact on the control group.

Qualitative fieldwork generally confirms the quantitative analysis and adds unique findings of its own. The qualitative research purposively identified high performing ('fast moving') and low performing ('slow moving') households, and examined the reasons for their high or low performance. In 20 focus group discussions (FGD) covering 186 households, 49 (26%) were identified as 'fast movers' while 137 (74%) were characterised as 'slow movers' (Ajambo Akaliza *et al.* 2016: 3).

According to the qualitative data, household characteristics that are associated with high performance – i.e. enabling graduation – include: labour capacity (two or more adults rather than a single adult), low dependency ratio (few dependents rather than many), and home ownership (owns house and land rather than homeless and landless or renting). Other factors positively associated with graduation out of extreme poverty include being a member of a cooperative, larger plot size and access to credit (many 'fast movers' joined one or more *tontines,* where they saved and could borrow at low interest rates). Interestingly, gender and literacy of household head was not considered to contribute significantly to graduation potential.

In-depth interviews and life-history diagramming with case study programme beneficiaries illustrated the precarious nature of livelihoods in rural Rwanda, where households face unpredictable and sometimes overwhelming shocks. In some cases the magnitude of these shocks exceeded the ability of the Graduation Programme to reverse a downward spiral towards destitution. For example, during the first two years on the programme, one 'slow mover' faced the following shocks: her house was

destroyed (because it had a grass roof); she was accused of being a thief by the community; her goat died; her pigs died; her income-generating activity collapsed; and she lost her self-respect as a result (Ajambo Akaliza *et al.* 2016: 13).

Such shocks are mostly outside the control of the affected household, and it would be unfair to blame the participant for failing to 'graduate' out of extreme poverty when faced with these traumatic and debilitating assaults on their viability. On the other hand, some beneficiaries did make bad investment decisions which caused them to lose confidence and undermined their motivation. However, in most cases even 'slow movers' did the best they could with the resources and opportunities provided by the Graduation Programme, but they failed to make rapid progress due to adverse circumstances beyond their control.

5. CONCLUSION

5.1. Discussion

Concern Worldwide's Graduation Programme in Rwanda has a similar design to BRAC's CFPR-TUP programme in Bangladesh and the 10 replica pilot projects supported by Ford and CGAP in eight other countries (as described in chapter 2). This evaluation also follows the RCT protocols that were used to evaluate six of the 10 pilot projects (Banerjee *et al.* 2015). For these reasons, it might not be surprising that broadly similar findings were obtained in this evaluation. Findings from the quantitative surveys reveal persuasive evidence of many positive impacts of the Graduation Programme in Rwanda on its participants. For most indicators the majority of beneficiaries improved their position relative to control group households during the implementation period, and – crucially – many of these impacts were sustained these improvements even after programme support ended.

For most material indicators, the biggest positive impact was recorded during the first year of the programme, when beneficiaries received substantial cash transfers. This cash was used for a range of purposes, including to **reduce deprivation** (by consuming more food, purchasing health insurance and buying medicines when needed), to **acquire productive assets** (including farmland and livestock), to upgrade or **build houses** (in response to the government's housing policy and villagisation campaign), to **purchase consumption goods** (such as furniture and kitchen utensils) and to **save** more than before.

Some of these positive impacts started to dissipate for many beneficiaries after the programme cycle ended. Both the quantitative and qualitative fieldwork identified the fact that profits earned from programme-supported income-generating activities were generally lower than the cash transfers as one explanation, since total household income declined for most beneficiaries after the income spike during the first year. However, average incomes remained higher than before the programme started, and

most indicators remained significantly above baseline levels. It remains to be seen whether these downward trajectories for material indicators will continue, or whether they will stabilise at higher than baseline levels.

Economic theory predicts that households with more assets will be more resilient against shocks – specifically, that assets such as livestock or savings act as 'buffers' that can be drawn down when needed (Moser 1997). On the other hand, at low levels of asset accumulation only limited protection is provided, and assets can be rapidly depleted. A good example in Rwanda is the campaign to upgrade grass roofs, which can be analysed as a shock that left many families in the programme area homeless. Without additional support from Concern Rwanda, those affected would probably have expended most of the transfers they received from the Graduation Programme on buying iron sheets and building new houses, and they would have had no possibility of graduating.

Interestingly, in the qualitative fieldwork four out of eight case study households also reported being reclassified as Ubudehe category 3 by their community after they joined the Graduation Programme as a negative shock, because this meant they were no longer eligible for Direct Support from VUP or for free health insurance (Ajambo Akaliza *et al.* 2016: 14). Similarly, households might have lost their informal social support systems (such as remittances from relatives working elsewhere) once they were registered on the Graduation Programme – in some cases, they might have been left worse off than before, especially after the cash transfer phase ended if they were unable to restore their informal support arrangements.

The qualitative case studies also found that 'slow movers' were often those that faced severe shocks during the programme cycle, as discussed above. Conversely, 'fast movers' often are participating households that experienced relatively few debilitating shocks during the programme cycle. But there is no guarantee that such shocks won't strike in the years after programme support ends, which raises questions about how sustainable any positive impacts are, in such a precarious environment. This also reveals the importance of understanding the local context when designing ambitious interventions such as 'graduation model' or social protection programmes.

For example, it is well known that health shocks are among the most devastating to the livelihoods of poor people. For this reason the *mutuelle de santé* is critically important in protecting Graduation Programme participants who might otherwise have lost everything they gained from the programme in health costs for a sick family member. In Ethiopia, a study of the Productive Safety Net Programme (PSNP) found that it provided partial protection against asset depletion when a drought impoverished many rural households that were not PSNP participants (Béné *et al.* 2012). Although the PSNP aimed at graduating Ethiopian households out of chronic food insecurity, in the absence of complementary insurance mechanisms it functioned more effectively as a safety net against shocks.

An important set of findings relates to non-material indicators. Significant programme impacts were recorded for indicators of social inclusion, such as beneficiaries' attendance at women's meetings and membership of cooperatives. Beneficiaries also reported feeling more respected by their neighbours than before, and qualitative fieldwork found evidence of strengthened social cohesion.

Mirroring the survey findings, sensitivity analysis of beneficiaries' graduation performance, using alternative indicators and thresholds, found high rates of graduation and 'net graduation' after 12 months and some decline thereafter, but sustained success relative to baseline after 36 months and (for cohort 1) even after 48 months. More than 80% of cohort 1 beneficiaries are assessed as having 'net graduated' after 12 months, in terms of deprivation, falling to around 60% after 36 months and 50% after 48 months. In terms of asset ownership, graduation rates were sustained – productive and consumption assets acquired since baseline were retained or continued to grow after 12 months. The indicators selected for cohort 2 beneficiaries – weekly earnings, levels of savings, child dietary diversity and respect from the community – reveal lower graduation rates and less sustainability over time.

Household characteristics that are positively associated with graduation or being a 'fast mover' include household size, adult labour capacity, home ownership, being a member of a cooperative, and receiving outside support. A major constraint to graduation is shocks (such as livestock death, illness, or failure of a livelihood activity), which also cause graduation reversal – a return to extreme poverty.

5.2. Implications for programming

Many lessons have emerged from the design, implementation and impacts of the 'Enhancing the Productive Capacity of Extremely Poor People' project in southern Rwanda. Some of these confirm what has been established on similar programmes in other contexts, some are examples of good practice for replication, and some are lessons for potential improvements in future programming, either in Rwanda or elsewhere.

5.2.1. Implications for programme design and implementation

1. Before selecting income-generating activities to support under the Graduation Programme, Concern undertook a contextual analysis and market assessment, to identify local enablers and constraints to graduation – market conditions, infrastructure, complementary government and non-governmental programmes and services, etc. For example, the context analysis identified the government's campaign against thatched roofs as a risk factor, so Concern provided additional support to affected households, to protect the gains derived from the Graduation Programme. ***A contextual analysis and market assessment should be***

standard practice before implementing all graduation programmes, otherwise participants risk being set up for failure.

2. Graduation programmes have demonstrated that addressing multi-dimensional poverty requires more than cash transfers, it requires a multi-dimensional package of support. The Graduation Programme in Rwanda confirms the importance of coaching and mentoring to achieve sustained improvements in food security and nutrition, health and hygiene, gender relations, and self-confidence. ***Graduation programmes must include personal coaching and mentoring, including behaviour change messages, to produce significant improvements especially in non-material indicators of wellbeing.***

3. Other 'secondary' components of the Graduation Programme also made significant contributions to impacts, independently of the cash and asset transfers. For example, pro-poor financial inclusion was promoted by requiring beneficiaries to open SACCO accounts and encouraging them to save, and the savings habit, access to lower-interest loans and participation in microfinance institutions all persisted, long after participation in the programme ended. ***It is crucially important to deliver all components of the 'graduation model' package, to maximise programme impacts.***

4. 'Developmental graduation' recognises that graduation programmes are unlikely to be effective and sustainable in the long-term unless beneficiaries receive complementary support, specifically access to essential services and to other forms of social protection. In this context, the provision of health insurance through the Graduation Programme and the fact that most beneficiaries renewed their *mutuelle de santé* cards after the programme ended is an important indicator of sustainable impacts, because this insulated programme participants against unforeseen health shocks that could negate all the gains made. ***All possible opportunities should be found to link participants to social protection and social services after they exit from graduation programmes.***

5.2.2. Implications for impact evaluations

5. Because the Graduation Programme was relatively generous in the package of resources it transferred, the material wellbeing of beneficiaries immediately improved – giving cash to poor people automatically reduces their poverty. From an evaluation perspective, there is a risk that these programme effects will be confused with programme impacts. One way to control for this is to calculate net changes in material indicators such as income and assets (i.e. household income and assets owned minus the value of cash transfers and assets received), but we did not do this because it understates the extent to which beneficiaries are in fact better off thanks to the programme. ***Real programme impacts should be looked for in the sustainability of material indicators over time (do beneficiary incomes and assets remain higher than at baseline after programme support ends?) and in positive trajectories in non-material indicators (such as school***

enrolment, women's empowerment and beneficiaries' participation in community institutions).

6. It is increasingly recognised that impact evaluations need to track participants after – as well as during – the project cycle, to avoid drawing misleading conclusions about impacts based only on a baseline and endline survey. For cohort 1 beneficiaries of the Graduation Programme in Rwanda, four data-points were collected – baseline, midline, endline and follow-up – and the presentation of these 'sustainability survey' findings in this report shows clearly which impacts were sustained and which started to dissipate after participants exited the programme. ***Impact evaluations must make provision for at least one follow-up survey sometime after programme support ends, in order to track the trajectories that households follow over time – before, during and after the intervention period – relative to control group outcomes, on the key impact indicators.***

7. Many 'graduation model' programmes quantify graduation as a single figure: the proportion of beneficiaries who achieved a defined threshold value of income or assets at a certain point in time. The sensitivity analysis we conducted for this report suggests that this is simplistic. Firstly, many alternative indicators of programme impacts deserve to be recognised, including non-material outcomes. Secondly, when is the best moment to measure graduation? Our multiple survey rounds reveal that the number of beneficiaries who exceeded graduation thresholds varied from one point in time to the next – midline, endline, and follow-up – and there is no logical reason for choosing one of these data-points and ignoring all the others. ***A 'trajectory' approach that tracks progress on alternative indicators over time might be a more appropriate measure of graduation outcomes than a 'threshold' approach based on a single indicator at a point in time.***

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Annex 1. Concern Rwanda Evaluation Outputs

1. Concern Rwanda (2012a), **Concern Graduation First Round Data Report** (July) [Ricardo Sabates]
2. Concern Rwanda (2012b), **Data Quality Baseline Indicators Report** (September) [Ricardo Sabates and Godfrey Ngoboka]
3. Concern Rwanda (2013a), **Concern Graduation Baseline Report** (January) [Pamela Abbott and Ricardo Sabates]
4. Concern Rwanda (2013b), **Concern Graduation 1st cohort Impact Report** (August) [Ricardo Sabates, Stephen Devereux and Pamela Abbott]
5. Concern Rwanda (2013c), **Concern Graduation 1st cohort 12-month Consolidated Report** (October) [Ricardo Sabates, Stephen Devereux and Pamela Abbott
6. Concern Rwanda (2013d), **Concern Graduation 2nd cohort 12-month Consolidated Report** (December) [Ricardo Sabates, Aleston Kyanga and Stephen Devereux]
7. Future Agricultures Consortium (2014a), **Concern Graduation 1st cohort 12-month Working Paper** (April) [Ricardo Sabates, Stephen Devereux and Pamela Abbott]
8. Future Agricultures Consortium (2014b), **Concern Graduation 1st cohort 12-month Briefing Paper** (April) [Stephen Devereux]
9. Concern Rwanda (2014c), **Concern Graduation 1st cohort 12-month Briefing Paper** (May) [Stephen Devereux]
10. Centre for Social Protection (2014d), **Evidence on graduation in Rwanda** (conference paper) (May) [Ricardo Sabates and Stephen Devereux]
11. Institute of Development Studies (2015a), **Concern's Graduation Programme in Rwanda** (IDS Bulletin article) (March) [Ricardo Sabates and Stephen Devereux]
12. Concern Rwanda (2015b), **Concern Graduation 1st cohort 36-month Consolidated Report** (February) [Ricardo Sabates, Stephen Devereux and Rachel Sabates-Wheeler]
13. Concern Rwanda (2015c), **Concern Graduation 1st cohort 36-month Briefing Paper** (March) [Jenny Swatton]
14. Concern Rwanda (2015d), **Concern Graduation 1st cohort 48-month Consolidated Report** (October) [Ricardo Sabates, Stephen Devereux and Rachel Sabates-Wheeler]
15. Concern Rwanda (2015e), **Concern Graduation 2nd cohort 36-month Consolidated Report** (November) [Ricardo Sabates, Stephen Devereux and Rachel Sabates-Wheeler]
16. Concern Worldwide (2015f), **Final Evaluation of the 'Unleashing the Productive Capacity of the Extreme Poor' Graduation Programme, Rwanda, 2012-2015** (November) [Rosaleen Martin and Jenny Swatton]
17. Concern Rwanda (2016), **Graduation Programme, Rwanda: Adding to the evidence: a summary of qualitative research** (March) [Donna Ajambo Akaliza; Irina Ignatieva; Rosaleen Martin and Jenny Swatton]