

**Social Cost Benefit Analysis of CARE
International's Pathways Program**

Title: Social Cost Benefit Analysis of CARE International's Pathways Program

Date: November 2016

Author: Michael Weatherhead, Samrawit Mariam, Sarah Arnold, Alison Freeman

Client: CARE International



NEF Consulting is the consultancy arm of the UK think tank, the New Economics Foundation (NEF). We put NEF's ideas into practice by placing people and the planet at the heart of decision making.



The New Economics Foundation is the UK's only people-powered think tank. The Foundation works to build a new economy where people really take control.

NEF Consulting Limited
New Economics Foundation
10 Salamanca Place
London SE1 7HB
www.nefconsulting.com
Tel: 020 7820 6361

Contents

Acknowledgements	4
Abbreviations	5
Executive Summary	6
1. Background and Purpose	9
2. Methodology	10
SCBA stages.....	10
Research Limitations.....	14
3. Theory of Change	16
The Need and the Aim	16
The Change Process: the ‘what’ and the ‘how’	16
4. Findings and Analysis	24
Overview	24
Cross-country analysis	27
Country-level analyses	31
Ghana	31
Malawi.....	37
Mali	43
5. Conclusions and Recommendations	48
Conclusions	48
Recommendations	48

Acknowledgements

The authors are grateful for the assistance of Emily Hillenbrand, Scott Merrill, Maureen Miruka and Pranati Mohanraj from CARE USA for their guidance and support in shaping and supporting the delivery of this work.

We would also like to offer special thanks to the three CARE in-country Pathways Program Managers: Mamadou Coulibaly (Mali), Salome Mhango (Malawi) and Agnes Loriba (Ghana), for their invaluable support during the country visits as well as their thoughts, reflections and insights both before and after the visits.

Abbreviations

Acronym / Term	Description
FFBS	Farmer Field and Business School
SCBA	Social Cost Benefit Analysis
SROI	Social Return on Investment
SSS	Senior Secondary School
VfM	Value for Money
VSLA	Village Savings and Loan Association
WTA	Willingness to Accept Compensation
WTP	Willingness to Pay

Executive Summary

CARE International (CARE) approached NEF Consulting for assistance in gaining better understanding of the Value for Money (VfM) of their Pathways program.

The approach taken is an adapted form of cost benefit analysis that treats externalities as the rule, rather than the exception. All material impacts are modelled, whether intended or unintended, and improvement in wellbeing (for example, women's empowerment) is considered not purely as a means to an economic end but additionally as a valuable end in and of itself.

The Pathways program operates across six countries: Mali, Malawi, Tanzania, Ghana, Bangladesh and India. It is designed to achieve multiple impacts, the chief of which is to create more secure and resilient livelihoods for the poorest female farmers and their households. The program aims to accomplish this through a central focus on women's empowerment (while recognizing the underlying root causes of discrimination against women in agriculture) and is founded on the belief that increasing women's empowerment can support greater food and nutrition security as well as higher economic resilience.

The analysis is built around a Theory of Change (ToC) that articulates four key impact areas for the target population of poor women farmers and their households, with the first of these impact areas directly supporting the other three:

- Women's empowerment.
- Livelihoods resilience.
- Reduction in economic poverty.
- Increased food and nutrition security.

In addition to targeting the primary impacts for women farmers and their households, various secondary and tertiary impacts were also considered. These impacts were either indirect impacts stemming from the change experienced by the target household or from the program's activities or spillover impacts resulting from other stakeholders' proximity to the program.

The Social Cost Benefit Analysis (SCBA) ratio for the Pathways program (the value created by the program relative to its investment) as evidenced within the parameters of this analysis, is presented in Table E1.

Table E1: Social Cost Benefit Analysis (SCBA) ratios

	SCBA ratio
Target population	23:1
All stakeholders	31:1

Based purely on a review of the ratio, the results suggest clearly that the Pathways program is a valuable investment, returning social and economic value far in excess of its original investment. However, there is some variance between the country-level ratios (Ghana 45:1, Malawi 32:1, Mali 23:1). The Mali figure is lower than those of the other two countries due principally to evidence collected via the evaluation surveys which indicates that Malian target households witnessed a significant fall in household assets during the period of the program, most probably as an outcome of the conflict at that time.

Approximately 75% of the value created by the program (in the three countries sampled) was received by the target households, with non-target households receiving virtually all of the remaining value.

The *food and nutrition security* and *women's empowerment* impact areas are the most valuable single impact area accounting for around 40% each of the total value created. *Livelihoods resilience* and *economic poverty reduction* account collectively for around the remaining 20% of value.

Table E2 presents gross value (US\$) per target person/household across the sampled countries for the period under review (2012–2015).

Table E2: Value (US\$) of gross impact per target person/household and control household from 2012–2015

Impact	Stakeholder	Malawi	Ghana	Mali
Food and nutrition security	Target	2,183	620	359
	Control	-164	-930	-2
Women's empowerment	Target	351	1,327	1,114
	Control	316	-389	0
Livelihoods resilience (assets)	Target	993	186	-1,770
	Control	1	-25	n/a
Economic poverty reduction	Target	375	545	217
	Control	24	9	178

NB: Owing to a lack of reliable counterfactual data for the impact area of livelihoods resilience, it was assumed for the purposes of the SCBA model that the control group experienced the same decline in assets as the target population.

- The Malawian target population afforded the greatest value to the *food and nutrition security* impact of the three countries included in the Pathways analysis. The importance given to food security in Malawi is extremely high in comparison with the target populations of the other two countries. The drought conditions which the country has faced in recent years are a likely driver for this finding.
- The distribution of value placed on *women's empowerment* (by the target populations) between the three countries is significantly different to that of the food and nutrition security impact. Ghana and Mali's valuations far exceed those of Malawi's, whilst the opposite is true for food and nutrition security.
- The greatest divergence between the countries in the analysis can be seen in the differences in gross value of assets per household. Malawi and Ghana both indicate an increase in non-financial assets while Malian households witness a precipitous decline during the intervention period, most probably due to the conflict in the country.
- In Ghana, the fall in the value of the *food and nutrition impact* for the control population is directly related to the fall in that population's dietary diversity score. That the control group witnessed a decrease in their dietary diversity while the target

population witnessed an increase is a particularly positive finding in terms of the effectiveness of the Pathways program.

- In Malawi, the difference in value for *women's empowerment* between the target and control women was low. Target households identified that this impact area was relatively less important than *livelihoods resilience* and *food and nutrition security*; basic physiological needs must be met as a priority, particularly in times of drought. In addition, the net value of this impact area is low due to a relatively high counterfactual, namely the number of women outside of the target population also experiencing rises in women's empowerment.
- There was a significant drop in the gross value of *assets per household* (a sub-impact area of *livelihoods resilience*) in Mali. This is consistent with data showing a statistically significant decrease in the mean asset index of Pathways Mali households, both with and without agricultural land.

Key conclusions drawn from the analysis included:

- The high SCBA ratio indicates that the Pathways program is very good value for money (VfM). The results suggest the theoretical model around which the program is designed is correct; namely that women's empowerment is important in driving food and nutrition security and economic resilience.
- Country context can have a significant bearing on the relevance of the project and its ultimate success. In the case of conflict, the Mali program's success (in VfM terms) was nearly put in jeopardy. In the case of the drought, the Malawi program's focus (on food and nutrition security and livelihoods resilience) was perfectly positioned.
- Qualitative data from in-country visits suggest it is the holistic nature of the intervention that creates the value, as much as any one individual activity or strategy. The in-country causality focus groups suggested that building skills and capabilities are key drivers that influence impacts. The learning-by-doing approach of the Farmer Field and Business School (FFBS) is aligned to effectively growing women's empowerment.

The following could provide valuable insights into future program design if investigated further:

- Ghana had the highest SCBA ratio (on account of relatively low inputs) and also appears to have been the most successful country program, in terms of achieving near-universal coverage regarding household participation (in the communities in which the program operated). Whether these two phenomena are connected is worthy of further investigation as the establishment of any type of a relationship could directly affect the program's ToC. Individual behavior change is often most effectively achieved through changing the norms of an entire community.
- The analysis suggests that a significant percentage (26%) of the net value produced by the program was received by stakeholder groups other than the target population. In future, related, programs it might be worth considering at the design stage where the externalities may occur, and putting in place monitoring and evaluation processes to explore wider impacts.

1. Background and Purpose

Background

CARE International (CARE) approached NEF Consulting for assistance in gaining better understanding of the Value for Money (VfM) of their Pathways program. The Pathways program operates across six countries: Mali, Malawi, Tanzania, Ghana, Bangladesh and India. It is designed to achieve multiple impacts, the chief of which is to create more secure and resilient livelihoods for the poorest female farmers and their households. The program aims to achieve this through use of a strong gender focus, schooling in agro-ecological techniques to increase productivity, and a focus on crops with an increased nutritional benefit for the families.

The program targets women in food insecure, poor and very poor, rural smallholder households. In some countries, this involves poor female-headed households. In other countries, the program involves women from landless households who participate in agricultural activities solely through provision of a daily wage from farm labor, or that belonging to Scheduled Castes (SCs) or Scheduled Tribes (STs).

The Pathways program was designed to gain a deeper understanding of the paths that particular segments of poor women smallholder farmers take toward empowerment and toward greater household food and nutrition security and gaining resilient livelihoods for their households.

Purpose

Broadly, the aims of the Pathways program are threefold:

1. To increase the productive engagement of 65,000 poor women in sustainable agriculture and contribute to their empowerment;
2. To enhance the scale of high-quality agriculture programs at CARE, designed to respond to the needs of women;
3. To contribute to the global discourse that surrounds women and agriculture.

CARE feels that a VfM analysis would further their understanding of the program's effectiveness and help them to achieve the above aims.

CARE requires evidence of the VfM of the program that can be provided to external audiences such as donors, governments and partners, in order that they support the institutionalization and scaling up of the Farmer Field and Business School (FFBS) approach – which is the cornerstone of the program.

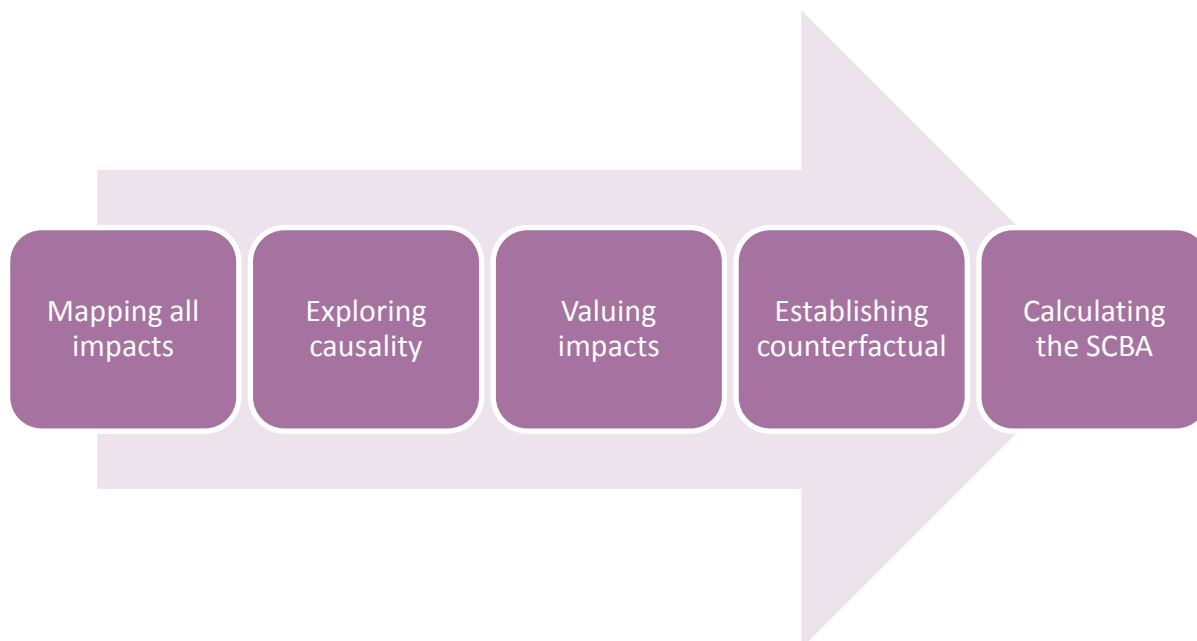
The VfM analysis would not only ascertain the value generated for the principal stakeholder group – namely the farmers (through building on the extensive impact evaluation work already undertaken) – but would also consider wider possible impacts for secondary stakeholders.

CARE also wishes to see the analysis adapted and replicated to support similar interventions. In short, CARE wishes to *prove* and *improve* their programming through this analysis.

2. Methodology

NEF Consulting has employed a social cost benefit analysis (SCBA) methodology for this piece of analysis. The section following presents the main stages of the methodology, laying out the approach taken and the key assumptions made. Greater detail about each assumption and piece of data used in the methodology is presented in the accompanying technical report¹. Each stage of the methodology, together with the associated decisions, is presented in Figure 1.

Figure 1: Social Cost Benefit Analysis (SCBA) stages



Social Cost Benefit Analysis (SCBA) Stages

Stage 1: Mapping all impacts

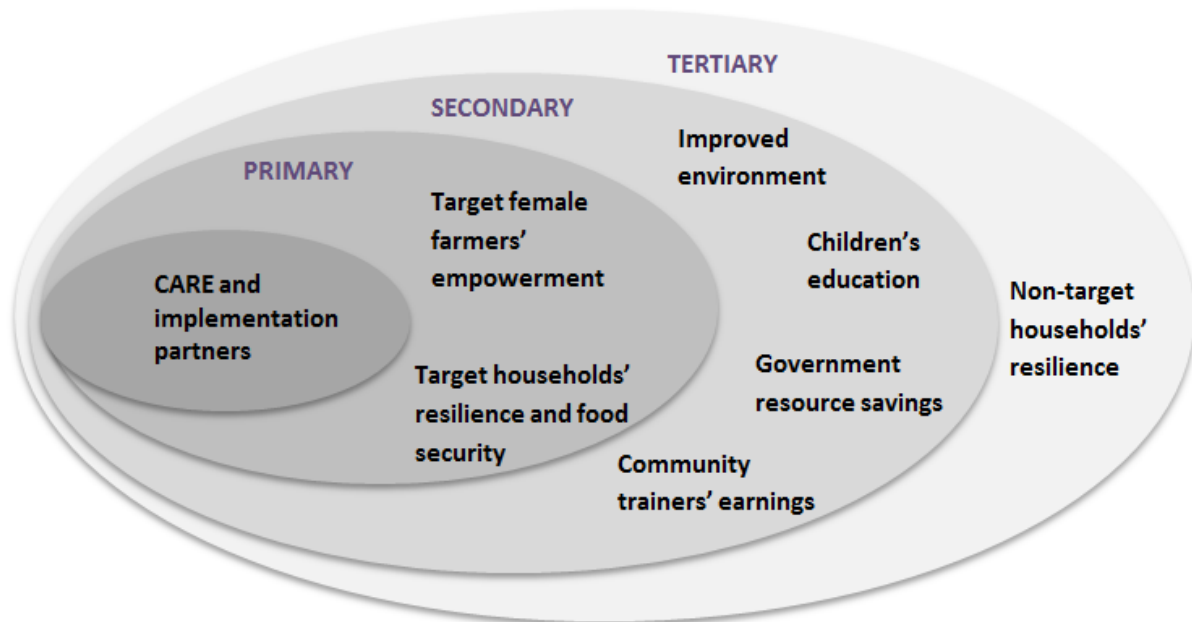
The clarity of definition of the impact areas and target population expressed via the program's Theory of Change (ToC), and evidenced in the program's mid and end-term evaluations, provided the building blocks for this study's valuation of the Pathways program. In addition to adopting the same impact areas and target population, the timeframes as used by the evaluation (2012–2015) have been used for this valuation.

In addition to the impacts identified for the target population, an examination of other stakeholders that may have been impacted by the program was also undertaken. Telephone interviews conducted by CARE International staff and CARE in-country staff explored any externalities (unintended impacts) experienced by the target population or additional stakeholders. Traditional cost benefit analyses often exclude externalities. This may be due to a general view that externalities are the exception and not the rule, but may also relate to the difficulty in measuring and valuing externalities. In this analysis we have deliberately included externalities within the parameters of the model.

¹ Social Cost Benefit Analysis of CARE International's Pathways Program: Technical Report

Figure 2 presents the expected material impacts for the Pathways program.

Figure 2: Intended and unintended impacts



The target population's intended impacts are classified as primary impacts in Figure 2.

Stakeholders who are considered to benefit tangentially through the program are classified as receiving secondary and tertiary impacts.

The secondary impacts of the change are either: indirect – experienced by the target population e.g. government cost savings and children's education (secondary); or direct – for non-target stakeholders e.g. community trainers.

The various tertiary impacts are viewed as spillover impacts – resulting from that stakeholder group's proximity to the program; or social or geographic proximity in the case of non-target households.

The program's mid and end-line evaluations had previously collected evidence for the primary impacts for the target population. However, no data had been collected to evidence or value secondary or tertiary impacts. The task was undertaken as part of this study during in-country visits via focus groups and interviews with the stakeholders expected to experience those impacts, as well as third party experts. Interviews with third party experts and CARE staff were used to triangulate views on the likely extent of secondary or tertiary impacts.

Stage 2: Exploring causality

At the request of CARE International, the causality between the change levers and impact areas of the Pathways program was explored. Regression analysis was employed to explore statistical relationships between different impact areas and the change levers defined by the Pathways ToC. Causation exercises with small focus groups of target households in Ghana, Malawi and Mali were also used. Participants in each exercise were asked to think about the

changes they had experienced in different impact areas and to estimate to what extent different change levers had contributed to these changes.

Stage 3: Valuing impacts

The impacts to be valued in the SCBA model were divided into economic and non-economic. The economic impacts were valued based on market indicators; for example, changes in the price of assets and income recorded in the program's base and end-line evaluations. The non-economic impacts (for example, women's empowerment) were valued based on stated preference, obtained directly (via in-country focus groups) from the stakeholders to whom the impact applied.

Stated preference is a social valuation technique which takes account of the total intrinsic value that a stakeholder perceives an impact to entail. It is generated by asking stakeholders to assess value based on their opinions and feelings. It differs from *revealed preference* (the main alternative) which is a market-based approach that assesses utility solely on the market value (as shown by the price). Two of the stated preference techniques employed involved directly asking focus groups about:

- Their 'willingness to pay' (WTP) to achieve the impact they had received; or
- Their 'willingness to accept compensation' (WTA), to forgo that impact.

A third approach was used where it was felt stakeholders did not sufficiently understand the WTP and WTA approaches. This third approach – choice modelling – involved stakeholders thinking about the impact in question from a financial viewpoint, through providing examples of goods and services that they would ordinarily pay for but that might achieve the same impact. These were then ranked beside the actual impact to derive a financial value.

Secondary sources such as a national minimum wage were used to value impacts for children and community trainers.

A full list of valuation approaches employed is presented in the accompanying technical report.

Stage 4 Establishing counterfactual

In order to develop a true representation of a program's impact, it is crucial to establish what would have happened in the absence of that program – the counterfactual. There are a number of approaches used to establish the counterfactual. These range from asking stakeholder groups impacted by the program whether they feel they would have experienced the same impacts in the absence of the program (a hypothetical scenario); to the analysis of trend data; or the use of a control group (a community with similar characteristics to the target population that did not receive the program). It was the last of these options that CARE International expressed an interest in employing.

No control communities had been identified at the commencement of the Pathways program and thus no baseline counterfactual data was available for this study. Control communities were selected by in-country CARE staff and retrospective baseline and end-line questions were included in a new survey. The original evaluation survey was considered unnecessarily long for the purpose of obtaining responses that focused solely on the key impact areas from the control community; hence a shorter version of the survey was developed.

Local enumerators were trained during in-country visits to undertake the control surveys, and the response data was placed in a pre-designed spreadsheet. Full details of the survey, together with control group sample sizes, are available in the accompanying technical report.

Stage 5: Calculating the SCBA

In order to calculate the SCBA, the data for income and assets (financial and non-financial) were used to value the *economic poverty reduction* and *livelihoods resilience* impact areas. The household dietary diversity and women's empowerment indices were not employed to create a value for the *food and nutrition security* and *women's empowerment* impact areas. Instead, the values generated in the focus groups were used to represent the change in value for these non-economic impacts.

For the economic impacts where value data was collected for control populations, the equivalent calculation for the control group was subtracted from the gross value for the target population, to obtain a net change value.

No valuation focus groups were undertaken with control populations. Therefore the relative difference between the changes in (i) the household dietary diversity and (ii) women's empowerment indices, for target and control populations, was used to capture the value of the impact for the control populations (even though the actual change measured for the target population by the indices was not used in the model).

Valuations for non-target stakeholders (achieved via the target population focus groups) were used for assessing non-economic impacts in the non-target households. However, the total value was adjusted, based on the relative performance of the non-target household indices scores versus those of the target population. To assess the economic impacts, non-target stakeholders were surveyed directly. The same counterfactual data that was used to create the net value for the target population was also employed to create the net value for the non-target households.

Finally, a benefit period and drop-off rate² were applied to each impact, and the annual values discounted, to place them in present value terms.³ The summation of the net present value of all of the impacts was then divided by the program investment to arrive at a SCBA ratio.

SCBA models were created for each of the three countries sampled and combined to produce an overall program return on investment figure.

² Benefit period is the period of time beyond the completion of the investment period into which the impacts are expected to continue. The drop-off rate recognises that other factors are likely to maintain the impacts beyond the completion of the investment period and, as such, the program's influence declines over time.

³ Discounting of future values recognises humans' intrinsic preference for 'the now' over the future.

Research Limitations

The research that underpins this study has a number of limitations, including the key ones listed below.

Impact data

- The length of the previous baseline and end-line household survey (which took 4 hours to complete) was considered too long for non-target and control households. The length of the survey was therefore reduced significantly. This had the effect of causing the responses from target and non-target/control composite indices to be not precisely comparable. Coupled to this, the target population had been surveyed at both the baseline and end-line, whereas the non-target and control populations were surveyed only at the end-line. Data collected by a 'pre-then-post' versus retrospective is therefore also not precisely comparable.
- No meaningfully significant statistical results could be generated from the regression of impact and change lever data. There was a concern that estimates were biased by a loop of causality between different change levers and impact areas (i.e. change levers both affect and are affected by changes in impact areas) thus making any pronouncements on causality challenging.
- Triangulation of the opinions of local experts concerning the extent of the impact for secondary stakeholders, was not possible in all countries. Even where it was possible, this approach provides only an indicative figure for the reach and depth of the program's impact beyond the target population.
- We experienced difficulties in estimating population sizes for secondary stakeholders, such as non-target women/households and children. Reliable data sources were not available and it was not possible to use techniques consistently across countries to estimate population sizes (see point above).
- The food and nutrition security indicators were relatively limited in their use when valuing impact. Neither the coping strategy scores, nor the household dietary diversity index, provided a full enough picture as to which values linked to food security could be attached. Thus we excluded the food and nutrition security indicator data for this impact, and relied on the valuation data obtained via focus groups.
- The women's empowerment index was (by the evaluators' own admission) insensitive to change. As such, very small changes in women's empowerment were registered. From our valuation focus group discussions and other interviews, the index scores did not appear to match the story on the ground and as such, in the final narrative, we decided not to use data from the index.
- Access to non-target women/households was highly restricted in Mali. This resulted in very low attendance at planned focus groups, which undermined the quality of the impact data for this secondary stakeholder group. We therefore used data from the target population as a proxy for non-target stakeholders, particularly where the qualitative data indicated significant spillover effects from the Pathways program.

Counterfactual

- We needed to record baseline responses retrospectively for the control communities in the single survey administered to them as part of this study. This meant there was a possibility of recall bias (an overestimation of the impact in the minds of respondents). In the model, an adjustment was made for the bias.
- We had originally planned to select control communities based on the following criteria:
 - Rural/urban location
 - Average income
 - Proportion of the year with food shortages (yield)
 - Amount of accessible land for farmers (assets)

However, a lack of available data on the above characteristics meant the selection process was based ultimately on the judgement of local CARE staff and/or implementing partners. The fact that the Pathways program deliberately targeted the poorest communities also presented a challenge when seeking to find control communities with similar characteristics.

- The inability to locate control communities in Mali, which had not experienced extensive support in the field of resilience-building from other NGOs, reduced the reliability of the counterfactual data across a number of impacts, principally livelihoods resilience (assets and savings).

Valuation

- We had planned to use the same valuation approach per impact, across all countries. However, on occasion it was necessary to employ a different valuation technique for the same impact in different countries. This made cross-country value comparisons more challenging.
- Valuation sample sizes were extremely small in Mali. Valuation sample sizes were reasonable in Malawi and Ghana, but were taken from a relatively small subset of villages (in Malawi, more than 60 people were included, but from only 4 villages, compared to the 90 villages in which the Pathways program operated). The same issue arose with respect to valuation sample sizes for non-target women and households in Malawi.

3. Theory of Change

Theory of Change (ToC) is a process whereby stakeholders identify the conditions that have to unfold in order for their long-term goals to be met.

The ToC explores the modalities and mechanisms of social and economic value, generated for different beneficiaries of the Pathways project. This program's ToC goes beyond enumerated activities to focus on impacts, which are defined from the recipients' perspective as valued change. In essence, this is an account of *how* Pathways' activities have changed stakeholders' lives, in a way they identify as significant.

The Need and the Aim

The need, as originally identified in the project design, related to the significant number of female farmers and their households without secure and resilient livelihoods that lacked in empowerment and in the skills and knowledge necessary to become more productive and active members of society. As such, the aim of the program was to empower these female farmers, by improving food and nutrition security as well as the economic wealth and resilience of their households. The program has four specific impacts it focused on in the achievement of its aim:

- Women's empowerment
- Livelihoods resilience
- Reduction in economic poverty
- Increased food and nutrition security

The Change Process: the 'what' and the 'how'

Primary impacts

Figure 3 presents the program ToC for the target population of women farmers and their households.

Figure 3: Pathways Theory of Change



The ToC suggests that to achieve more secure and resilient livelihoods for the target population, improvements in productivity and profitability, equity and empowerment are required. In turn, CARE identified 5 key change levers they believe are required to support the achievement of improvements in productivity, profitability, equity and empowerment. The program theorises that that poor women farmers will be more productive, and that their families will be more food secure when:

- Women have increased capacity (skills, knowledge, resources), capabilities (confidence, bargaining power, collective voice), and support.
- Local governance and institutions have or implement gender-sensitive policies and programs that are responsive to the rights and needs of poor women farmers.
- Agricultural service, value chain, and market environments of relevance to women become more competitive, gender-inclusive, and environmentally sustainable.

As such, strategies and activities were designed to 'operationalize' these change levers. Figure 4 presents the framework of Pathways' strategies and activities.

Figure 4: Pathways' operational framework



While the end-line evaluation of the Pathways program explores the overall success of the program, as do the subsequent sections of this report, the following analysis explores the causation pathways within the program's ToC.

In order to understand which of the change levers were the most significant drivers for success, we first explored causation via regression analysis, to explore the statistical relationships between different impact areas and the change levers (as defined in the ToC). However, no meaningfully significant statistical results could be generated from this and there is a concern that estimates are biased by a loop of causality between different change levers and impact areas (i.e. change levers both affect and are affected by changes in impact areas).

Thus, in order to understand these relationships, we undertook causation exercises within small groups of target households during the in-country visits to Ghana, Malawi and Mali. Participants in each exercise were asked to think about changes they had experienced in different impact areas and to estimate to what extent different change levers had contributed to these changes. The change levers considered were those as defined in the Pathways Theory of Change:

1. Capacity (women's skills, knowledge, self-confidence).
2. Access to productive assets and resources (inputs, financial tools).
3. Increased productivity.

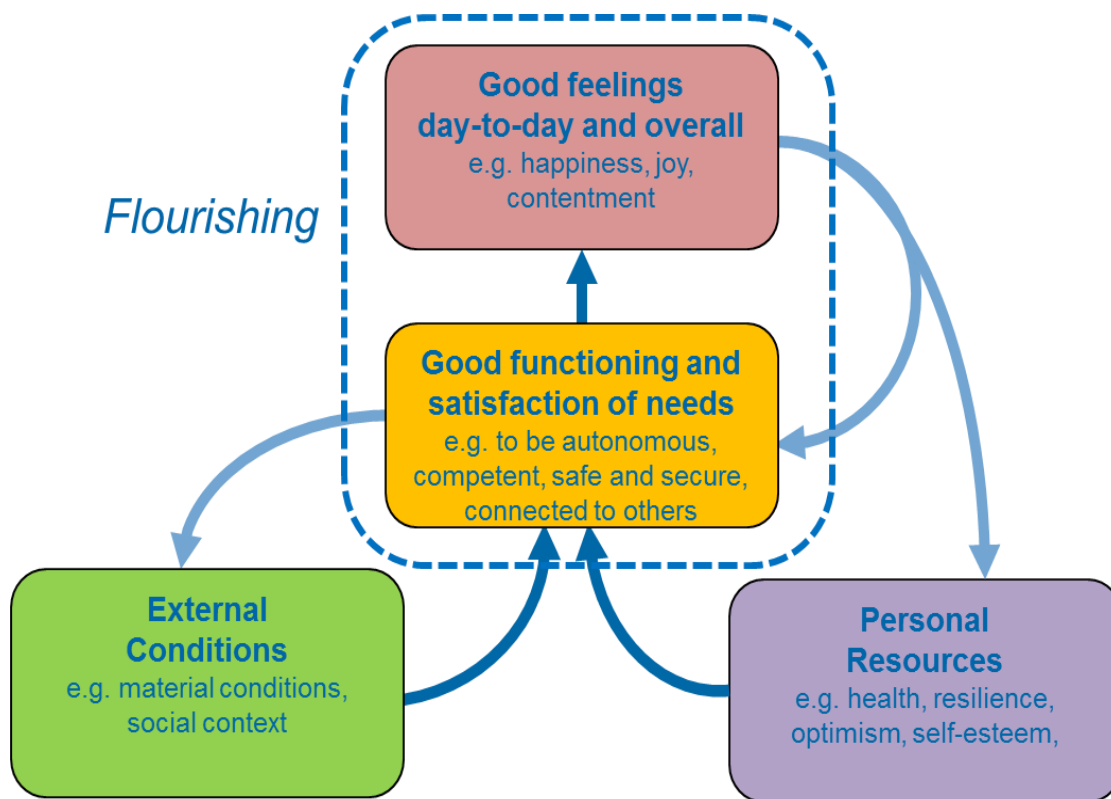
4. Increased influence for women over household decisions and assets.
5. Enabling environments.

Stakeholders in most groups found this to be an enjoyable exercise. Discussions were fruitful and produced interesting quantitative and qualitative data. However, varied patterns of thinking across different small groups might indicate differing interpretations or understanding of change levers among participants, or may reflect the difficulty of simultaneously analyzing different relationships. Based on a broad analysis of results across the three countries we visited, we found the following trends in responses to the exercise:

- All change levers were viewed in some way as important contributors to each impact area; what emerged from a number of the workshops was a more detailed understanding of both the relative importance and the presumed sequence of change in different areas.
- Based on both quantitative responses and qualitative commentary from various workshops, capacity (skills) was routinely rated as the most important or one of the most important drivers for changes in most impact areas (particularly in Ghana and Malawi). Many participants expressed the sentiment that women's increased knowledge and skills were a necessary pre-condition for a number of other significant changes, such as improvements in self-confidence and greater feelings of empowerment.
- Access was considered to be another factor that was critical for women in facilitating other change, though discussions concerning the definition of this term varied somewhat across groups and workshops. For participants in Malawi, for example, access to seeds and credit was important (for example, through village savings and loan associations) while in Mali the need was for broader access to land and the existing infrastructure resulting from previous programs working in the area. Coupled with improved knowledge and skills in farming, improvements in these varied forms of access were viewed by participants as a necessity in order for women to increase participation and improve productivity.
- In workshops in Ghana, such improvements in productivity were also seen as a significant enabler for other broader changes: By being given access and having the necessary skills and knowledge to farm effectively, women were better able to contribute financially to households and to prove themselves as economic agents. This drove feelings of empowerment among women, both through their improved skills and through gaining greater respect from men.

The above bullet points focusses on the causal pathways, specifically between change levers (as defined by the program's ToC) and the four key impact areas. Figure 5 presents a dynamic model of wellbeing which aids understanding in terms of the reinforcing pathways (feedback loops) that exist between the different impact areas. We have introduced the model expressly to assist in the explanation of the interplay between women's empowerment and the three remaining impact areas – *economic poverty reduction*, *livelihoods resilience* and *food and nutrition security*.

Figure 5: Dynamic model of wellbeing



The dynamic model of wellbeing was created by NEF for the UK Government Office for Science in 2006.⁴ It draws together different schools of thinking on wellbeing and positive psychology into a coherent narrative, to demonstrate the multi-dimensional nature of wellbeing and the interplay of those different dimensions.

The model shown in Figure 5 should be read from the bottom up. In summary, it suggests that the growth of one's personal resources plus improvements in the external conditions one faces can lead to both improved functioning and feelings. When combined, these conditions constitute a state of flourishing. In turn, research suggests, improved functioning produces a strong feedback loop to further improve one's external conditions, and improved feelings generate a growth of one's personal resources. Thus, a virtuous cycle can be established when positively affecting any one domain of the model.

Much of the Pathway program's activities and strategies look to support women's empowerment in terms of women's ability to function better within their communities and societies (see the functioning domain in the centre of the wellbeing model). For example, the program develops the women's farming skills which leads to greater feelings of competence. The program runs gender workshops which change the dynamic and connectedness to males within the community and start to foster autonomy. The program also strengthens the

⁴ Foresight Mental Capital and Wellbeing Project (2008) *Final Project Report – Executive Summary*, The Government Office for Science, London
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/292453/mental-capital-wellbeing-summary.pdf

external conditions domain of the above model, through its efforts to increase access to markets and productive assets. In the case of Pathways, the material conditions of the household are strengthened too. This focus on both building the functioning of, as well as improving the external conditions faced by women is driven by CARE's experience that to achieve gender equality requires transformative change. That transformative change is presented in figure 6.

Figure 6: CARE's Gender Equality Theory of Change



By relating the three components of change back to the dynamic model of wellbeing in Figure 5, one can locate both the building of agency and changing relations squarely within the functioning domain of wellbeing. Transforming structures relates directly to the external conditions faced by women farmers.

Qualitative data from in-country visits suggests it is the holistic nature of the intervention that creates the value as much as any one individual activity or strategy. The above causality sub-section suggests that the building of skills and capabilities is a key driver of impacts but also that all change levers play a part in achieving the impacts. Also, the learning-by-doing approach of the Farmer Field and Business School (FFBS) is aligned to growing the functioning of each individual effectively, with the domain of the dynamic model of wellbeing aligned to the impact area of women's empowerment.

By considering the Pathways program through the lens of the dynamic model of wellbeing, it becomes clear that the impact areas of *economic poverty reduction*, *livelihoods resilience* and *food and nutrition security* are directly supported by an improvement in women's empowerment. This is referred to as the 'use value' of women's empowerment, namely, how improved functioning manifests itself.

However women's empowerment is also valued in its own right for what it does for one's feelings and ultimately for personal resources. Thus, the improvement in functioning (women's empowerment) also has an 'intrinsic value'. This is captured in the improved feelings generated from the improved functioning, which in turn bolsters personal resources (women's self-esteem).

It is with this narrative that women's empowerment is valued within the SCBA as an impact in and of its own right, while also directly supporting and contributing to the three remaining impact areas (*economic poverty reduction*, *livelihoods resilience* and *food and nutrition security*) for the primary stakeholder: female farmers and their households.

Secondary impacts

In addition to the impact areas identified in the program's ToC for the target population, this study explored whether there might be externalities (positive or negative impacts) emanating from the program for stakeholder groups other than the target population.

Discussions with key stakeholders within CARE identified the following stakeholders and potential impacts, resulting from the program's planned activities, strategies and direct impacts.

Non-target households' resilience

In two of the three countries included in the study (Mali and Malawi), the Pathways program, where it operated, did not engage with each of the communities in its entirety. In the case of Malawi, only a percentage of households in a community volunteered to join the Pathways program. This left a proportion of village households that, while not directly engaging with the program, may have benefited from cross-fertilization of ideas and learning derived from the program's participants. In the case of Malawi, certain program activities (such as one-off gender awareness training) were also offered to households beyond the program's participants.

As such, our hypothesis is that there is a possibility that some change may have occurred in the four key impact areas for non-target households that are in close proximity (social or geographical) to the target households.

Children's education

Two of the key intended impacts of the program for both adults and children are to improve food and nutrition security and to reduce economic poverty for target households. In addition, our hypothesis suggests there may be another impact for children of target households:

- A reduction in malnutrition among the children of the target household resulting from an improvement in food and nutrition security may lead to an improvement in school attendance; and
- A reduction in poverty combined with the increased influence of women in household decision-making may also lead to an improvement in school attendance.

The assumption articulated by those interviewed prior to the in-country visits where we looked to evidence this assumption, was that malnutrition was a key factor affecting school attendance. During in-country visits, the importance of women having a greater level of income and the increased power they had to spend it on their children's education was highlighted.

Government resource savings

As a result of the program's intended impacts, we anticipate that the governments of the countries reviewed may receive a positive externality in the form of:

- A resource saving in the deployment of agriculture extension officers (in the locations in which the Pathways program operated) due to Pathways' provision of farmer trainers.

- A reduction in the use of government health facilities (in the locations in which the Pathways program operated) due to a reduced number of cases of child malnutrition - linked to the improvement in food and nutrition security.⁵

The first of these two impacts was deemed relevant only to Ghana, due to the extension services already offered by the government. The second of these two impacts was deemed relevant only to Malawi, due to the lack of a public health service in Ghana and Mali.

Community trainers' future earnings

The Pathways program employs a 'train the trainer' model for the dissemination of skills and knowledge. Those trained are community trainers, variously referred to as 'farmer to farmer trainers', 'community based extension agents' and 'junior experts' (in Malawi, Ghana and Mali respectively). Our hypothesis is that the experience gained by community trainers through their involvement in the program may result in improved future economic earning potential; for example, through having a greater chance of obtaining additional training-related work (working for other NGOs).

Improved environment

The Pathways program teaches farmers a range of agro-ecological farming techniques. These include: minimum tillage, mulching, crop rotation, cover crops, and soil erosion control. All of these techniques have the potential to increase crop yields and thus the income received by farmers. However, there is potentially an intrinsic environmental benefit beyond these impacts related to the longer-term sustainability of the soil.⁶

⁵ Interviewees considered the net drop in malnutrition treatments i.e. recognising that the program also encouraged more use of health facilities in cases of malnutrition.

⁶ An indicator was used to collect evidence of the extent of uptake of these agro-ecology techniques. Collecting data on soil quality was beyond the means of this study. The indicator data matched to a financial value of the soil quality (once the improvement in yield/income is removed) was deemed immaterial to the overall analysis when modelled, and thus not taken forward in the calculations.

4. Findings and Analysis

The findings and analysis section features key findings from the SCBA model, drawing from the evidence base collected via the in-country visits and previously, during the baseline and end-line evaluations. The analysis places those findings relative to the Theory of Change (ToC) and begins to offer conclusions and opportunities for learning (expanded on in section 5) for the Pathways program as a whole. The section is divided into three sub-sections:

- An overview of the total value and distribution.
- A cross-country analysis.
- A country-level analysis.

Overview

The SCBA ratio for the Pathways program (the value created by the program relative to its investment) as evidenced within the parameters of this analysis, is presented in Table 1. Based purely on a review of the ratio, the results suggest clearly that the Pathways program is a valuable investment, returning social and economic value far in excess of the original spend. Focusing on the return on investment (ROI) for value created exclusively for the target population, the return is still significant at almost 23:1. Sensitivity analysis supports the robustness of the ratio, with significant changes required in key assumptions and data within the model to reduce the ratio to anywhere close to parity (a ratio of 1:1).

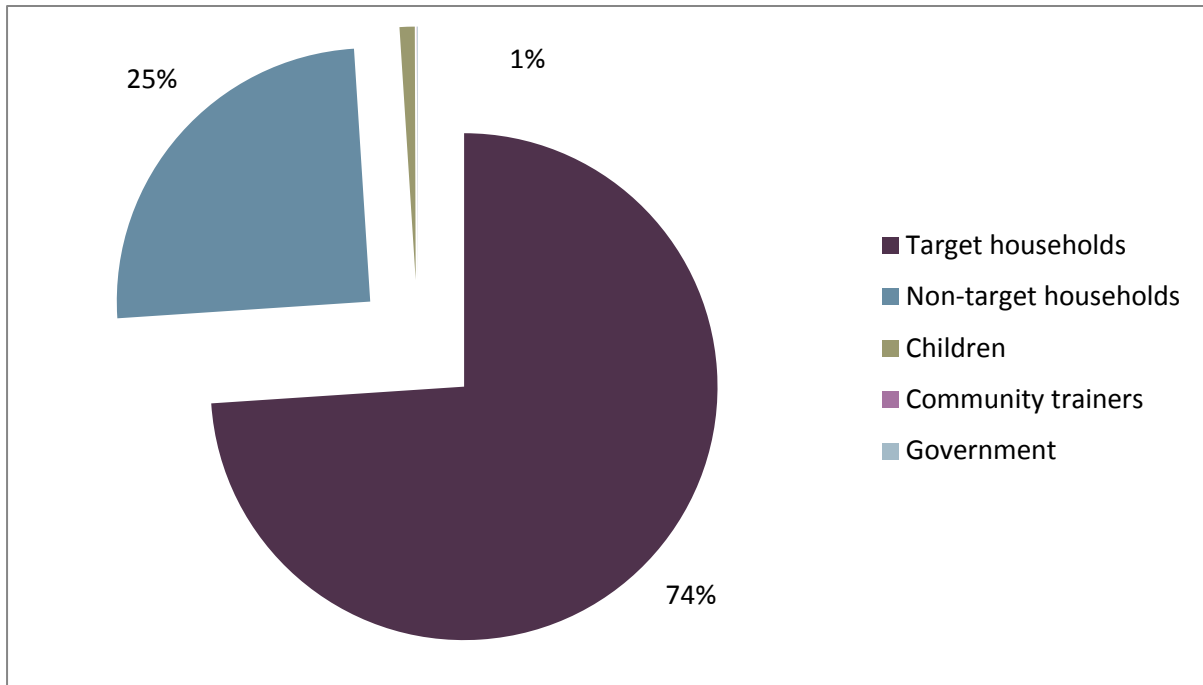
Table 1: Social Cost Benefit Analysis (SCBA) ratios

	SCBA ratio
Pathways – Target population	23:1
Pathways – All stakeholders	31:1

- While the cumulative ratios are positive, there are differences between the country-level ratios. Ghana's ratio is 45:1, Mali's is 23:1 and Malawi's is 32:1. The Mali figure is significantly lower than those of the other two countries principally due to evidence collected by the evaluation surveys indicating that Malian target households had witnessed a significant fall in household assets during the period of the program (2012–2015). More detailed analyses of Mali's results (and those of Malawi and Ghana) are presented later in this section. The markedly higher Ghana ratio is due to significantly lower investment costs relative to the other two country programs.
- While the ratios indicate apparently extremely positive ROI and while the ratios have incorporated the counterfactual in their calculation, the issue of attribution should be considered when reviewing the ratios. For example, CARE had run a number of projects prior to the Pathways program, particularly in Mali. There it was mentioned that the Pathways program, with its emphasis on women's empowerment, was able to happen so successfully only because of the groundwork undertaken by previous programs, which assisted in infrastructure development, amongst other things.

Drawing on the data from Mali, Malawi and Ghana, Figure 7 presents the distribution of net value by stakeholder for the program. Using the net (rather than the gross) value means that we include consideration of the counterfactual in the figures.

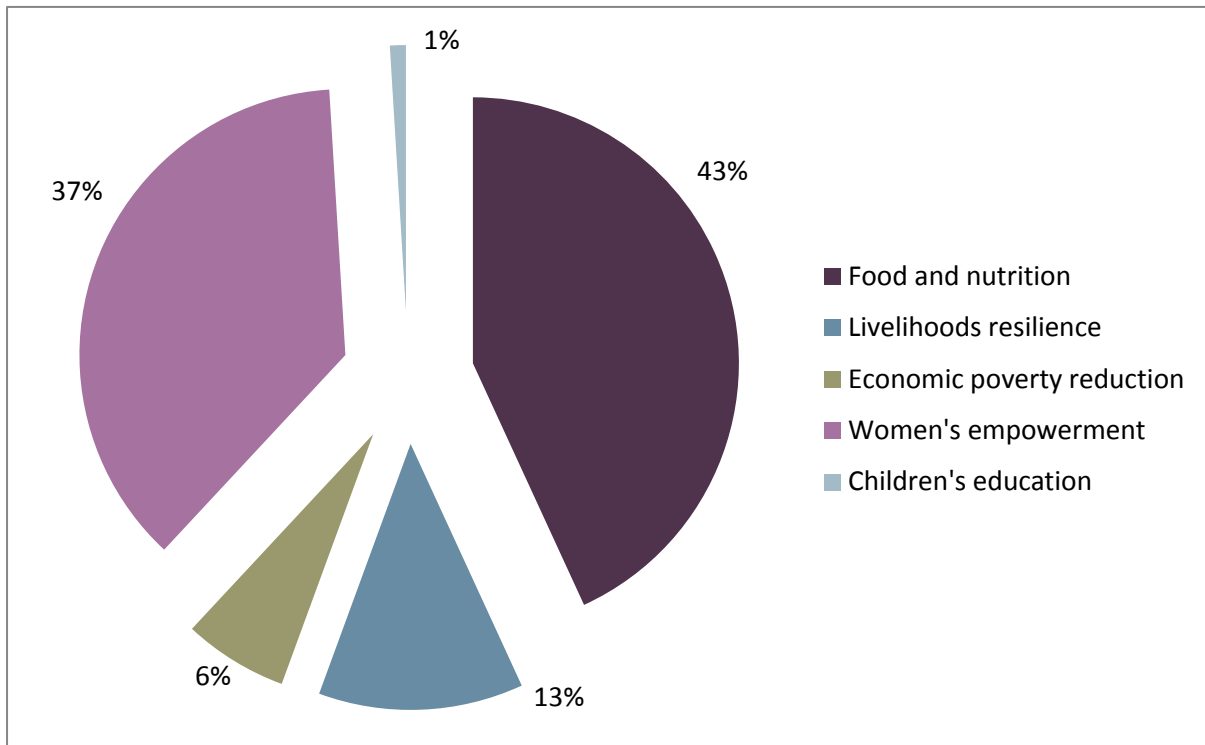
Figure 7: Pathways' distribution of value by stakeholder



- Figure 7 indicates that the majority of the value generated by the Pathways program (74%) goes to the target women farmers and their households, while the vast majority of the remaining value is earned by those non-target households that are in close proximity (geographical or social) to the target population.
- Whether the distribution of value between these two stakeholder groups is representative of the program as a whole (if one also included the 3 countries not sampled in this study) largely depends on the coverage the program has among target communities in those remaining countries. For example, in Ghana, near total coverage of households in a target community suggested very little 'leakage' in the form of spillover effects to other adjoining households, while the opposite was true of Mali and Malawi.
- The value generated by the program for the education of the children of the target households, the program's community trainers, and each country's government, is immaterial relative to the target and non-target households. This is on account of the relatively low population sizes of these stakeholder groups relative to the size of household populations, as well as the low expected additional personal value to be gained solely by extending schooling.

Figure 8 presents the breakdown of the value created by impact area. The four impacts featured in the ToC for the target population are joined here by an impact on children's education. The total value for other impacts (such as greater income earning potential from volunteering, and government cost savings through reduced child malnutrition) are immaterial by comparison.

Figure 8: Pathways' distribution of value by impact area



- The *food and nutrition security* impact is the most valuable single impact area, accounting for over 40% of the total value created. This is closely followed by *women's empowerment*, with *livelihoods resilience* and *economic poverty reduction* accounting collectively for around half the value of both food and nutrition security and women's empowerment.
- The *food and nutrition security* and *women's empowerment* values represented in the model are derived from the valuation focus group discussions in-country and are not linked to any of the food and nutrition security indicator data or women's empowerment indicator data collected in the end-term evaluations (such as the dietary diversity, coping strategies and women's empowerment indices). Neither of the food and nutrition security indicators were considered sufficiently aligned to the value of a food basket (the approach used to value change for this impact) for use in determining population coverage. The women's empowerment index was considered too insensitive to genuinely represent the change in women's empowerment. The focus group sizes employed in Malawi were, for example, around 60% of the size of the evaluation survey sample sizes. This is unlikely to affect the robustness of the valuation focus group findings relative to the survey. However, even with a reduction of 50% in the expected population coverage these impacts remain the most valuable.

- The causation work undertaken in-country (presented in the ToC section) does not explore the possible causal connections between different impacts. However, consideration of the theoretical wellbeing model demonstrates how women’s empowerment can directly affect food and nutrition security and two economic impacts.

Cross-country analysis

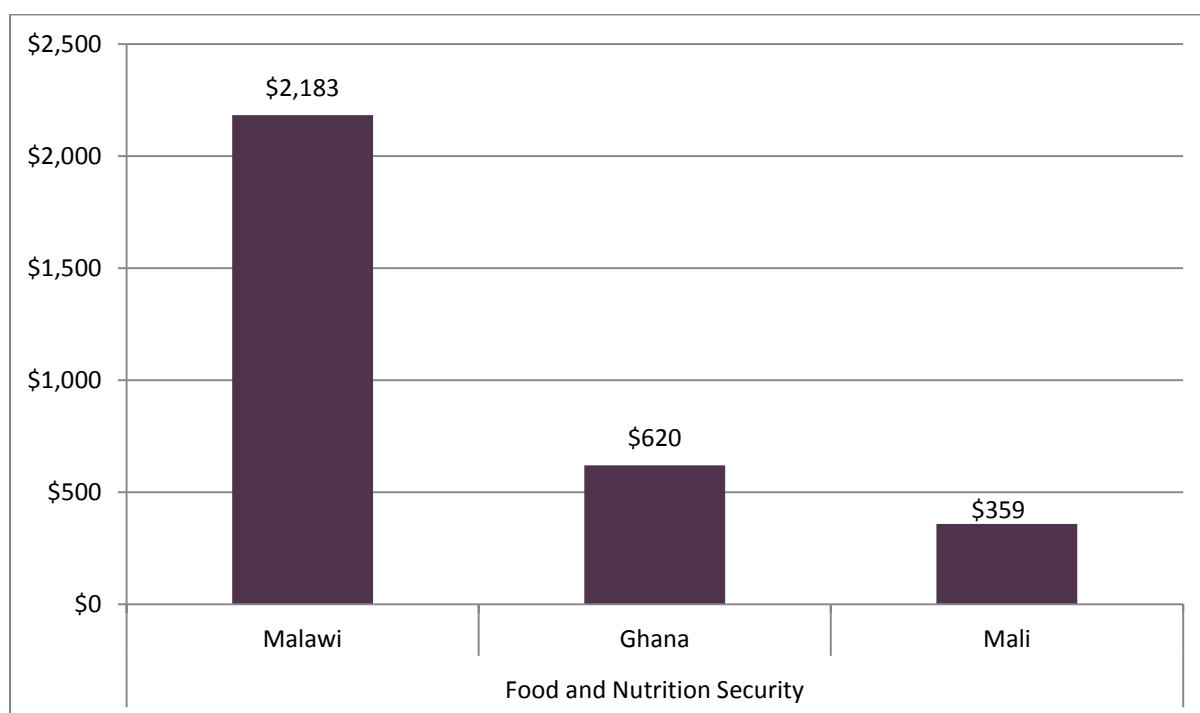
In this sub-section, we present a number of key cross-country findings from the model. We present here the value in terms of the gross change per person/per household as opposed to the net change (which accounts for the counterfactual). This is to allow comparison of the program’s value creation in isolation from the country context. Isolating the value creation simplifies the data, making cross-comparison easier. The country context is brought into the analysis through inclusion of the counterfactual at the country-level findings in the last sub-section.

Here we focus on the values to the target farmers and their households. We exclude a cross-country analysis of the impacts for non-target households. We do this due to the differences and difficulties in data collection for those stakeholders groups which make a cross-comparison less insightful.

Food and Nutrition Security

Figure 9 presents the gross value change per household for the *food and nutrition security* impact.

Figure 9: Change in gross value per household for food and nutrition security (2012–2015)



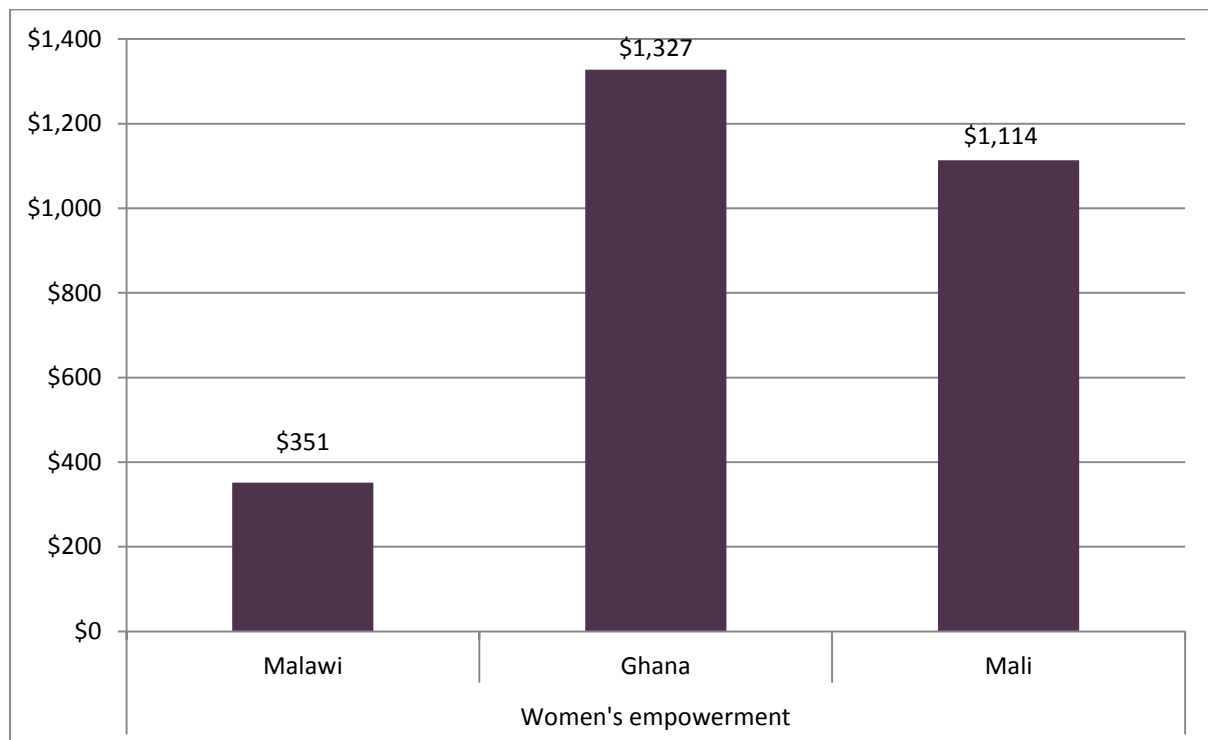
- The greatest change in value per household across the three countries occurred in Malawi. Different valuation techniques were employed to value the change in food

and nutrition security in Malawi, Mali and Ghana.⁷ In Malawi and Mali, the change in the value of foodstuffs purchased at the beginning and end of the program was used, whereas a willingness to accept compensation (WTA) exercise was used in Ghana. Often, *stated preference* techniques such as the one used in Ghana yield larger results than *revealed preference* techniques (such as that used in Malawi and Mali). That the Malawian figure is so much higher than the Ghanaian figure suggests that it is not the technique that is driving the difference in values between countries. More probable is the extremely high importance given to food and nutrition security in Malawi given the drought conditions that country has faced in recent years in comparison with the target populations in the other two countries.

Women's empowerment

Figure 10 presents the gross value change per women farmer for the *women's empowerment* impact.

Figure 10: Change in gross value per women farmer for women's empowerment (2012–2015)



- The distribution of values placed on the value of *women's empowerment* between the three countries is significantly different from those for the *food and nutrition security* impact. Ghana and Mali's valuations far exceed those of Malawi, whilst the opposite is true for food and nutrition security.
- The high importance given to the ability to improve *food and nutrition security* in Malawi, which was the only country to experience a severe drought during the implementation of the program, may account for this difference. Certainly the

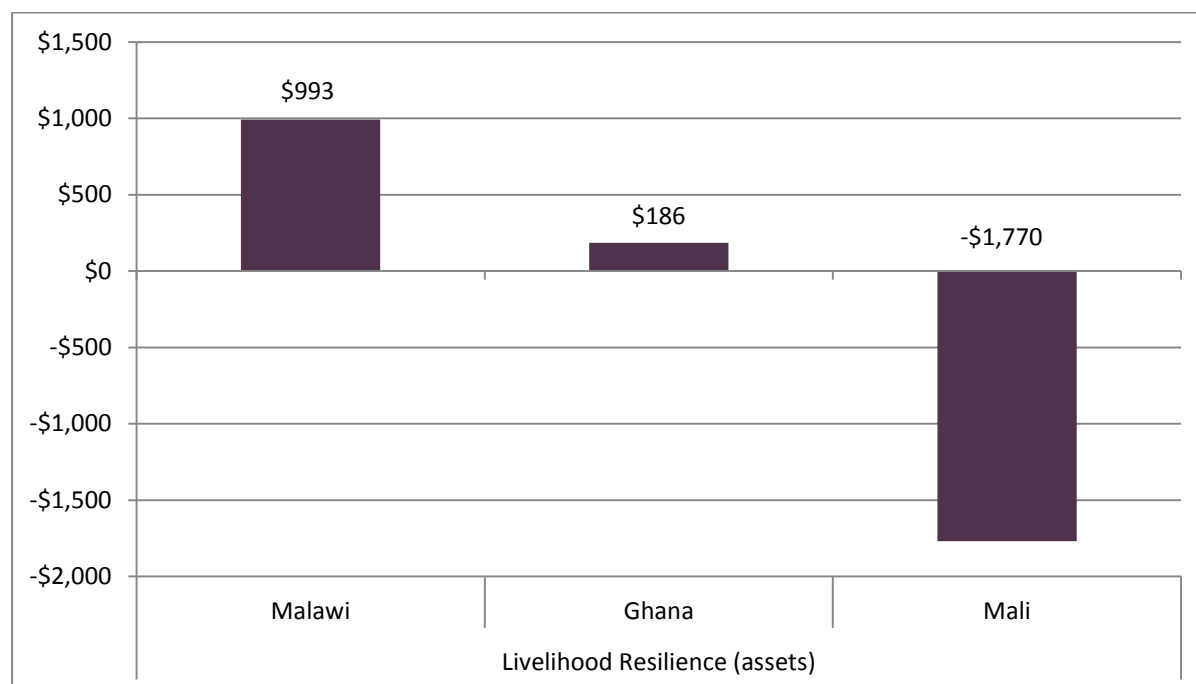
⁷ As described in the methodology section, this was not by design, but through circumstances on the ground requiring a change in approach in Mali and Malawi.

qualitative data collected during the valuation focus groups, which indicated that the severity of the drought experienced in Malawi meant food security was prioritized above all else by Malawian female farmers, would appear to support that theory.

Livelihoods resilience and economic poverty reduction

Focusing on the economic impacts, figure 11 presents the change in the value of assets.

Figure 11: Change in gross value per household for non-financial assets (2012–2015)



- The change in the gross value of assets per household sees the greatest divergence between the countries featured in the analysis. Malawi and Ghana both indicate an increase in non-financial assets while Malian households witness a precipitous decline during the intervention period.
- As presented in the end-line evaluation, the decline in large livestock and housing structures among Malian households are significant contributors to the decline. What led to a decline in those assets is not clear. However, the armed conflict in the country during recent years is likely to be a significant factor.
- The difference in gains for Malawian versus Ghanaian households is due predominantly to the relative gains in the quantity of assets, as opposed to the relative prices for the same category of asset. Two of the higher value assets – agricultural land and housing – both increased in volume in Malawi, whilst either remaining static or decreasing slightly in Ghana.

The story for financial assets (savings) broadly mirrors that of non-financial assets across the three countries (see Figure 12). However, the changes in household income levels do not; see Figure 13, which shows an increase across all countries, with the largest increase in Ghana.

Figure 12: Change in gross value per household for financial assets (2012–2015)

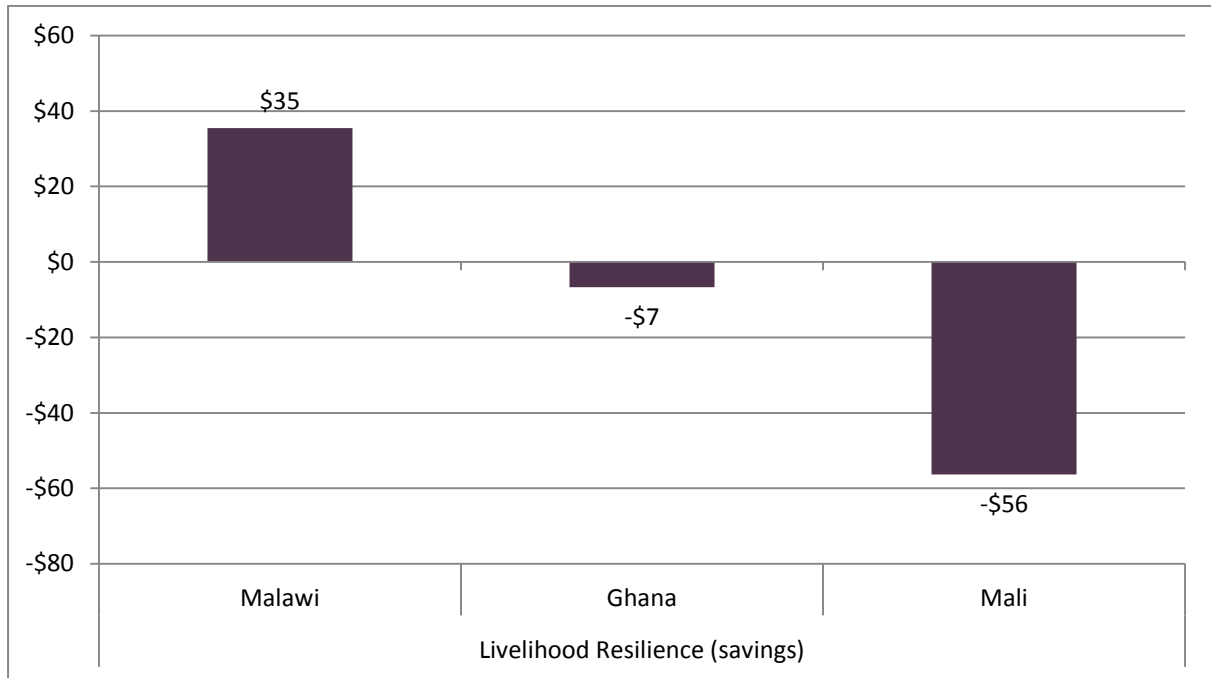
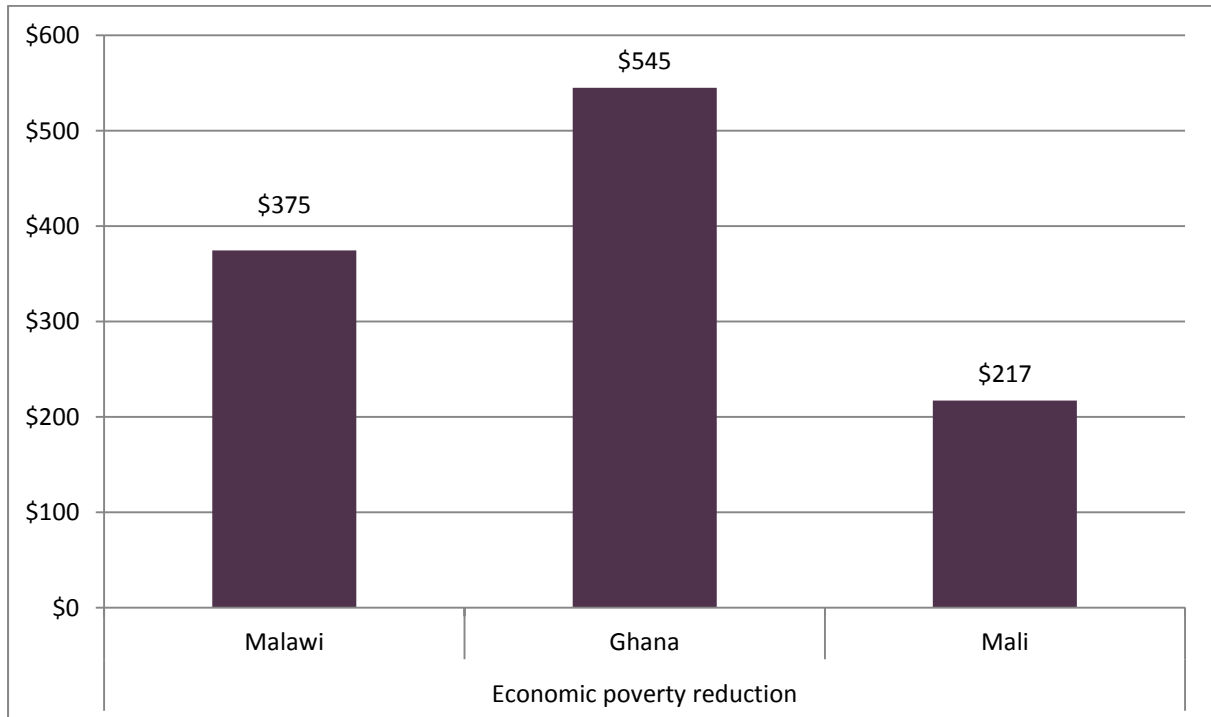


Figure 13: Change in gross value per household of income (2012–2015)



- Based on the income data captured in the baseline and end-line surveys, the program appears to have increased the level of income across all the sampled countries. The end-line evaluation highlights that increased income does not necessarily equate with increased profitability, as there is no accompanying analysis of expenditure and how this might have changed.

Country-level analyses

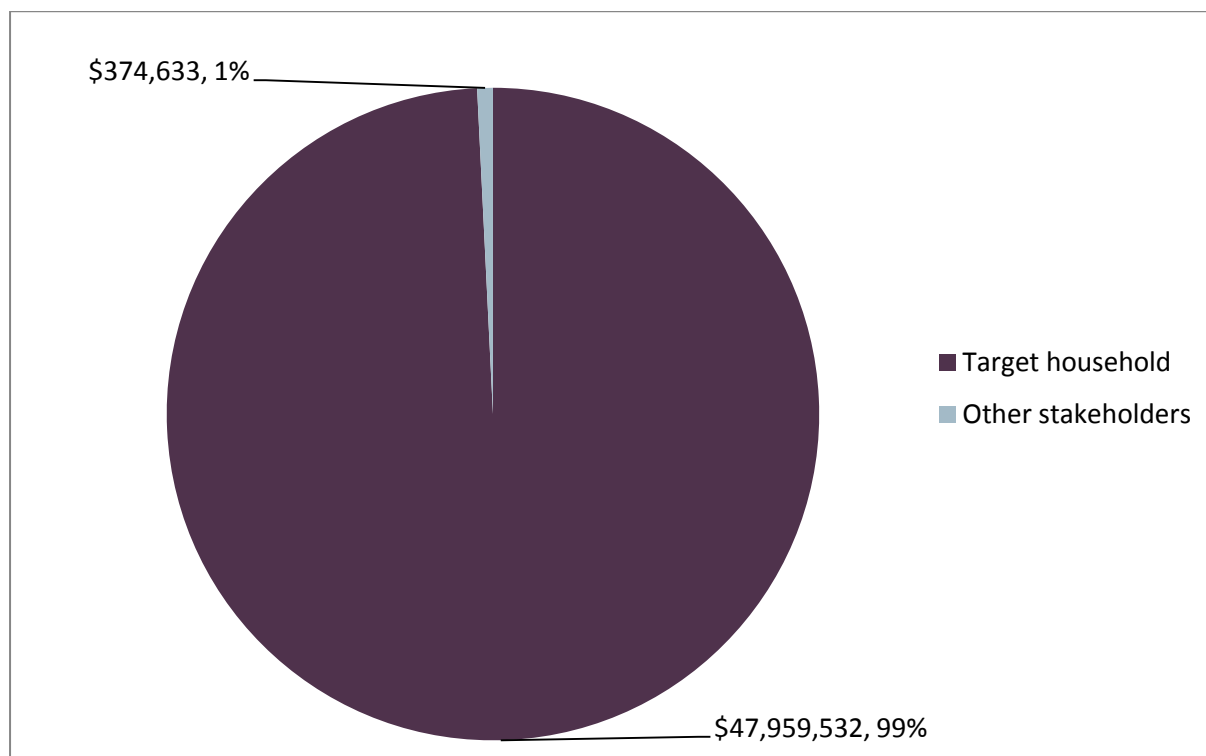
The following sub-section analyses the value created by the Pathways program at individual country-level. A critical difference in the way we present the results in this sub-section, as compared with the last section, is that here we include the results from the counterfactual. This allows for more contextual analysis: that is, how did Pathways' stakeholders fare, relative to what was happening more broadly in their countries.

Within each country analysis, we first present the distribution of the total value by stakeholder group. We next analyze the results for the primary stakeholder and finally examine the value for the secondary and tertiary stakeholders (where applicable).

Ghana

Figure 14 presents the total net value created by Pathways Ghana, distributed by stakeholder group. This value distribution is calculated after accounting for the counterfactual (that is, what would have happened in the absence of Pathways Ghana).

Figure 14: Net value distribution by stakeholder group



- The vast majority (99%) of the social and economic value created by the Pathways program in Ghana was accrued by the target women and households. Adopting an approach that enabled working with all households in a community, meant that non-target households were not deemed material to the analysis.
- Households as an organized unit are typically made up of between 5.1 and 8 members. Each participant on the Pathways program represents a single household and the changes that they experience, including: food and nutrition security, livelihoods resilience and poverty reduction benefit for everyone living in the household.

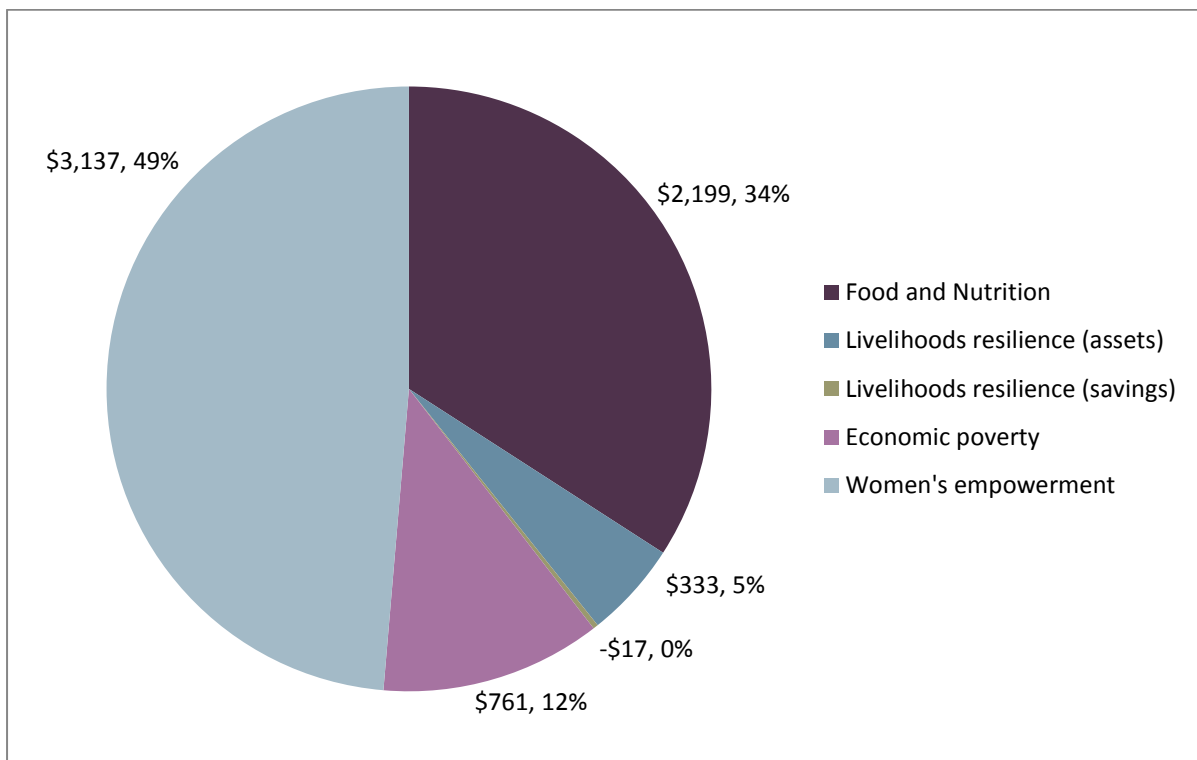
Primary impacts

Target households

Figure 15 presents the value distribution across the four impact areas that the target women and their households experienced through their participation in the Pathways program.

The values represent the net value per household (after accounting for the counterfactual) – which is the difference between the target population's performance and that of the control population.

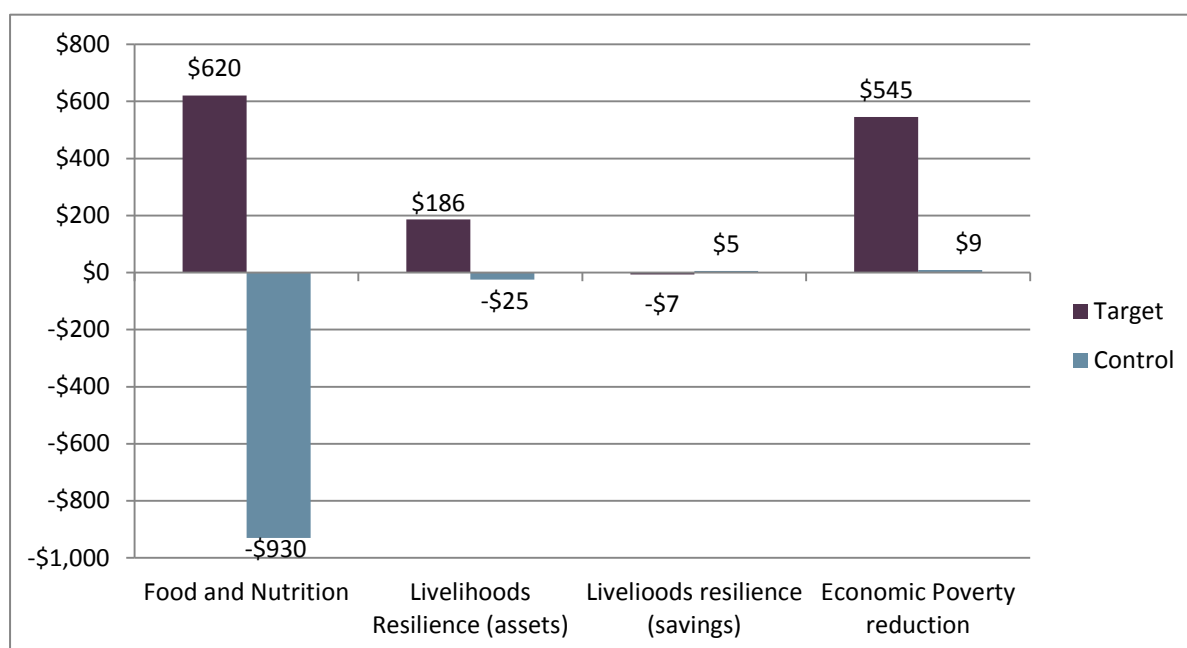
Figure 15: Distribution of net value per household by impact



*N.B. The value for women's empowerment is calculated on a per person basis (i.e. the number of target women in the Pathways program) while all other values presented here are calculated on a per household basis.

- Accounting for 83% of the total value gained by the target household, the most valuable changes experienced by the target population were the improvements in food and nutrition security and women's empowerment. This was evidenced both in terms of a positive change in dietary diversity as well as gains in the quantity and value of foodstuffs by the end of the program.
- The change in economic poverty was also a valuable impact for the target households in Ghana. The change reflects higher income derived from increased farm productivity and greater access to markets. Some of the households described how Pathways' farming practices had led to developing better quality farm products that are accepted by large buyers; others have increased income by creating value added products such as soya kebabs that can be sold in the local marketplace. This change would have affected both the food and nutrition security and poverty impacts.

Figure 16: Value of impacts per target household and control household from 2012–2015



*The values in the above figure differ from those in Figure 13 as they represent the value during the intervention years only, as opposed to the value during the intervention years plus forecasted future years of attributable impact.

- The fall in the value of the food and nutrition impact for the control population is directly related to the fall in that population's dietary diversity score. That the counterfactual indicated a movement in food and nutrition security in the opposite direction to that of the target population is a particularly positive finding in terms of the effectiveness of the Pathways program.
- Incomes (*economic poverty reduction*) and asset values both improved for households between 2012 and 2015. Income increased significantly more than assets, with incomes increasing from \$286 to \$832 per annum during this period. Data from the *Ghana Living Standards Survey*⁸ suggests that this final income is commensurate or slightly higher than average per capita incomes in the Upper East region of Ghana (2012 figures adjusted for inflation) but still significantly lower than mean annual household incomes.
- Control households on the other hand had very little change to their incomes and presented negative trends in terms of their asset wealth and dietary diversity. This suggests a stable to negative trend for poverty.
- Very little difference in the value of savings was witnessed for both the target and control populations during the intervention years. The increase in non-financial assets may well be the cause of savings not increasing, possibly driven by a preference for non-financial assets. Whether the steady rise in the rate of inflation

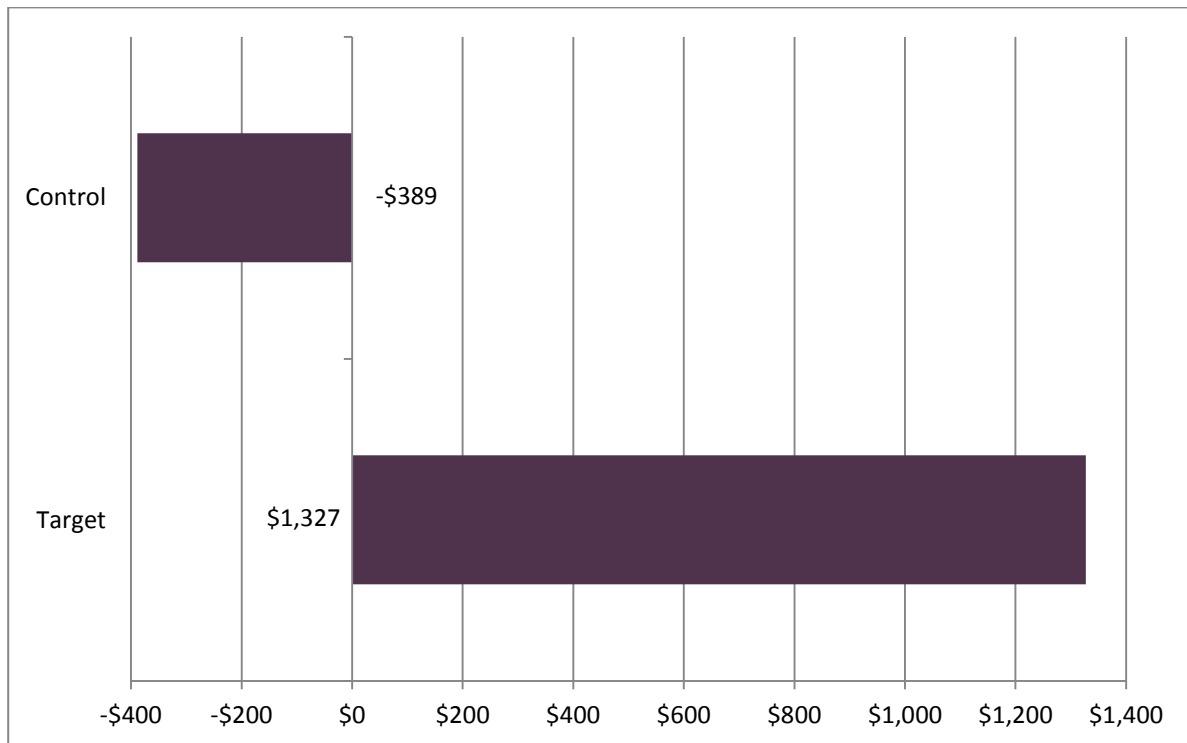
⁸ Ghana Statistical Service, 2014, *Ghana Living Standards Survey Round 6 (GLSS 6): Main Report*, accessed on 29.10.2016 and available at http://www.statsghana.gov.gh/docfiles/glss6/GLSS6_Main%20Report.pdf

over the intervention period (9%-17%) was a factor is not clear, but may be a contributor to decisions around asset accumulation.

Target women farmers

Figure 17 presents the change in value in women's empowerment for Pathways' target female farmers versus control farmers.

Figure 17: Value of women's empowerment per target farmer and control farmer from 2012–2015



- From 2012 to 2015 there was an increase (8%) in the levels of empowerment for Pathways women, as measured by the women's empowerment index. During the same period, women in neighboring control villages appear to have reduced their levels of empowerment (-3%) in particular with sustained low levels of input into farming decisions and reduced input into income decisions.
- Focus group *stated valuation* exercises revealed that both female and male participants value women's empowerment highly, giving it a value of over \$1,300. They perceived this to be a precursor to increased incomes, better child's health, improved family relationships and better prospects for children's schooling. It is the relative difference between the target and control populations' index scores that generates the negative value (-\$389) for the control group in the model.

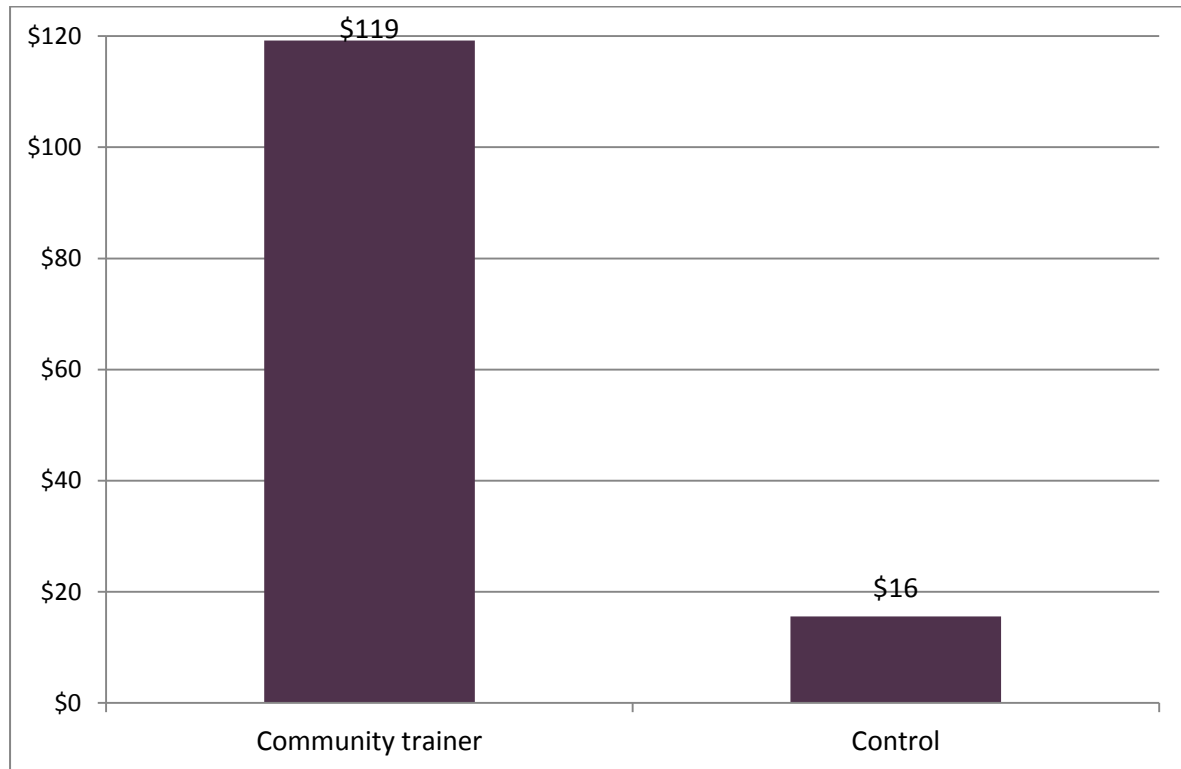
Secondary and tertiary impacts

As indicated by Figure 14 (above), the value to secondary stakeholders is not a significant feature of the Pathways program in Ghana.

The three stakeholder groups that experience impacts beyond the program's primary impacts are the children of the target households, the government, and the community trainers. Figure 18 represents the impact for community trainers.

Community trainers's future earnings

Figure 18: Value of volunteering per program community trainer and control stakeholder from 2012–2015



- Community trainers support field agents by becoming champions and best practice users of the FFBS techniques. These community trainers are given extra training in sustainable agriculture techniques, run some of the workshops with community members; provide ad-hoc advice and practical support to other farmers. They also make some steering decisions in relation to the program's management in their community.
- The community trainers also accrue some unique employability benefits if they are educated to senior secondary school level. Around 20% of facilitators have this qualification and the extra skills they develop through the FFBS provide them with experience to seek similar employment with other NGOs operating in the area, or to find other more formalized employment. An estimate based on annual national minimum wage has charts their prospects for finding such paid employment. This benefit is averaged out across the whole stakeholder group in the graph above and calculated to be \$119 per year.
- The counterfactual figure is built on an assumption that, in the absence of the volunteering, future earnings would only rise in line with local wages.

Government resource savings

The Ministry of Agriculture in Ghana provides community training of a similar nature to Pathways, on how to increase farmers' yields through fertilization and good crop

management. The ministry has been working with Pathways in some communities and CARE has also offered ‘train the trainer’ support to government extension workers.

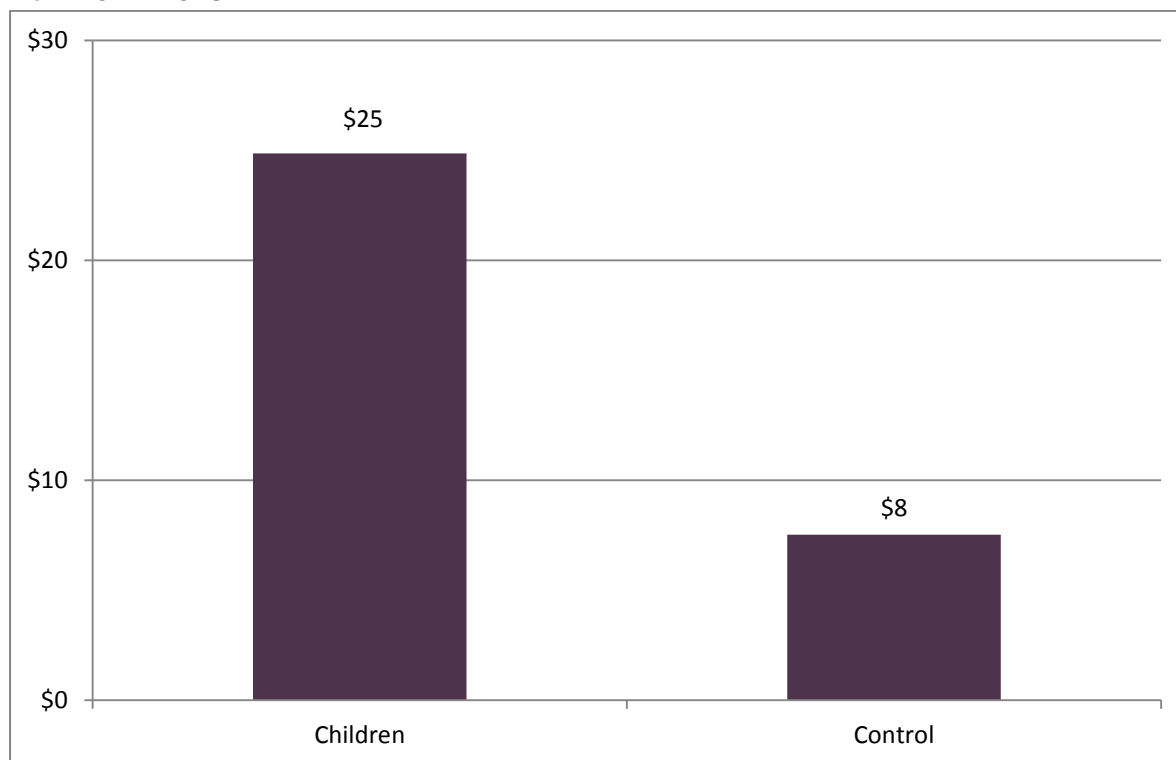
The ministry aims to reach all rural communities which are critically poor. It follows that the Pathways communities would, hypothetically be a cost to the government in terms of training budget should the program not exist. Based on unit costs (materials, fuel and staff) provided to the research team during the government’s provision of training, it is estimated that Pathways is saving the government just under \$200 per community – and that this cost is being saved for a total of 71 communities.

Children’s education

Children of target households benefit from improved food and nutrition security and rising wealth. Some families also reported that their reduced poverty and the changing household dynamics of women, who were now inputting more into decisions, led to more children attending secondary, senior or high school. This change is particularly significant for girls but the prospects for many children improved. The completion of secondary, senior or high school is projected to increase children’s long-term earning potential, and in Ghana it is an informal requirement for securing formal wage labor.

Figure 19 presents the value from a projected increase in school attendance for children of the target households versus control households.

Figure 19: Value of children’s school attendance per target household and control household from 2012–2015



- Primary research gathered in focus groups suggested that the majority of households who have been affected by Pathways increased the number of children that they expected to complete senior secondary school (SSS). On average, 44% reported that they had increased the number of children that they expected to complete SSS; typically this amounted to a change from sending none of their children to SSS to

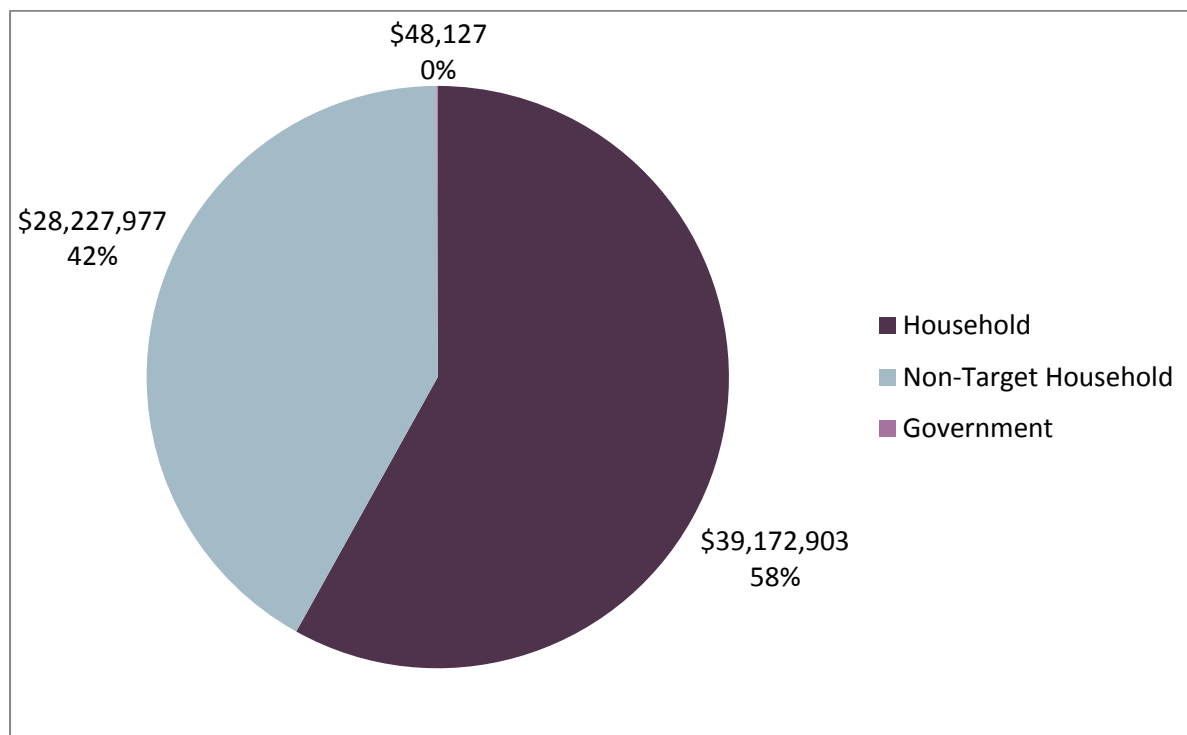
some of their children. Participants indicated that typically this meant an increase of two out of four of their children completing SSS. This assumption, along with the unemployment rate and assumptions made about the number of young people who will migrate to find paid jobs, was used to calculate their likely increase in earnings.

- When future annual income benefits are distributed across all Pathways children, each child in the stakeholder group is increasing their potential income by an average of around \$25 a year, compared to their parents local incomes at baseline. This is a significantly larger increase than was expected in the counterfactual scenario. Control data suggested it was slightly less probable that parents would send their children to SSS without involvement in Pathways. As the reduction had very low statistical significance it was assumed that the group who did not attend SSS would achieve similar incomes to their peers living in the area who had completed primary school education (typically earning around \$530).⁹ The counterfactual scenario therefore suggests their income would have increased from baseline to endline by less than a third (\$8).

Malawi

Figure 20 presents the total net value created by Pathways Malawi distributed by stakeholder group. This value distribution is calculated after accounting for the counterfactual (that is, what would have happened in the absence of Pathways Malawi).

Figure 20: Net value distribution by stakeholder group



⁹ Figure derived from the Ghana Statistical Service in Okelety 2013 and adjusted for inflation to 2015.

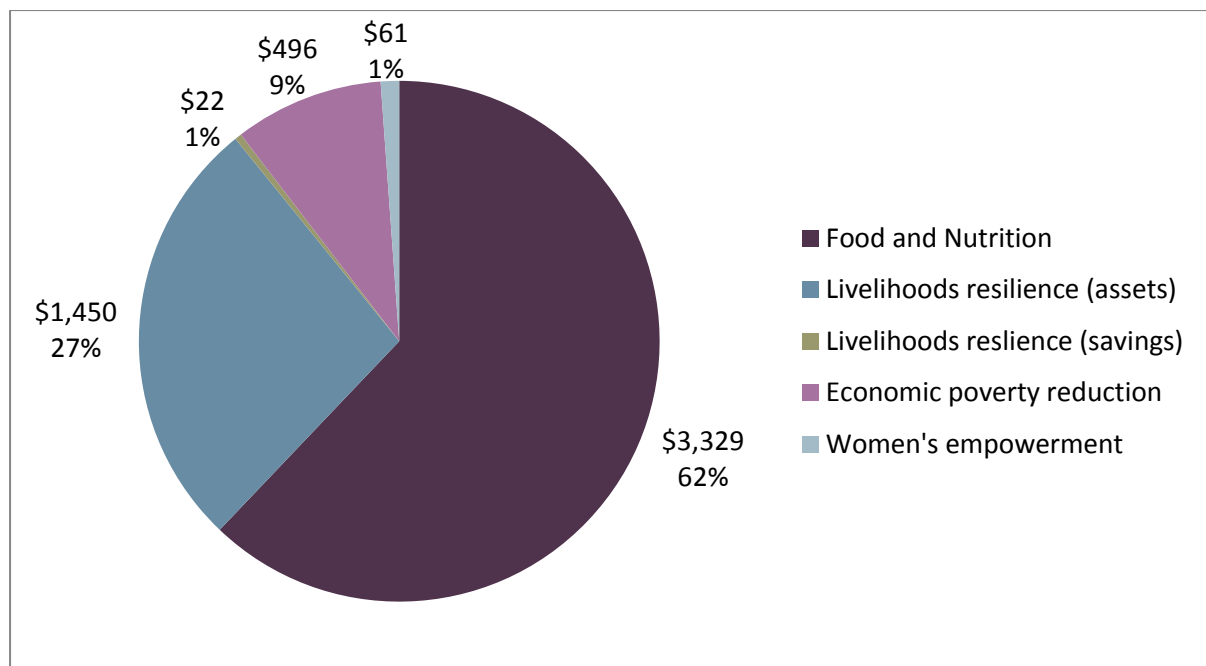
- As might be expected, the majority (58%) of the social value created by the Pathways program in Malawi accrued to the target women and households – that is the women and households in the producer groups.
- The program also generates a significant share of value for non-target women and households (42%) - those not directly involved with Pathways Malawi but who participate in Village Savings and Loan Association (VSLA) groups with Pathways members, and who may have been tangentially involved with the program (for example attending one or two gender dialogue sessions). This spillover effect is significant, and more than half as much value is created for non-target women and households, compared to the target women and households.
- A relatively small amount of value is created for the government, as a result of reduced healthcare costs due to improved nutrition among minors.

Primary impacts

Target households

Figure 21 presents the value distribution across the four impact areas which the target women and their households experienced through their participation in the Pathways program.

Figure 21: Distribution of net value per household by impact



*N.B. The value for women’s empowerment is calculated on a per person basis (i.e. number of target women in Pathways) while all other values presented here are calculated on a per-household basis.

- The greatest value (\$3,329 per household) is created through the impact area of food and nutrition security. This impact area creates 63% of the total value. Food and nutrition security has the highest value in the Malawian context, given that the country is facing a food security crisis. Malnutrition is a significant concern and 47% of the population experiences moderate to severe stunting due to malnutrition

(UNICEF, 2013).¹⁰ In this context, the Pathways program taught smallholder farmers to diversify crops and maximize productivity to promote resilience in the face of a changing climate. Target households were given access to resilient and nutritious soya crops, and the knowledge to grow them, as an alternative to the traditional tobacco crop (which is neither nutritious or in the current economy, though it is particularly profitable).

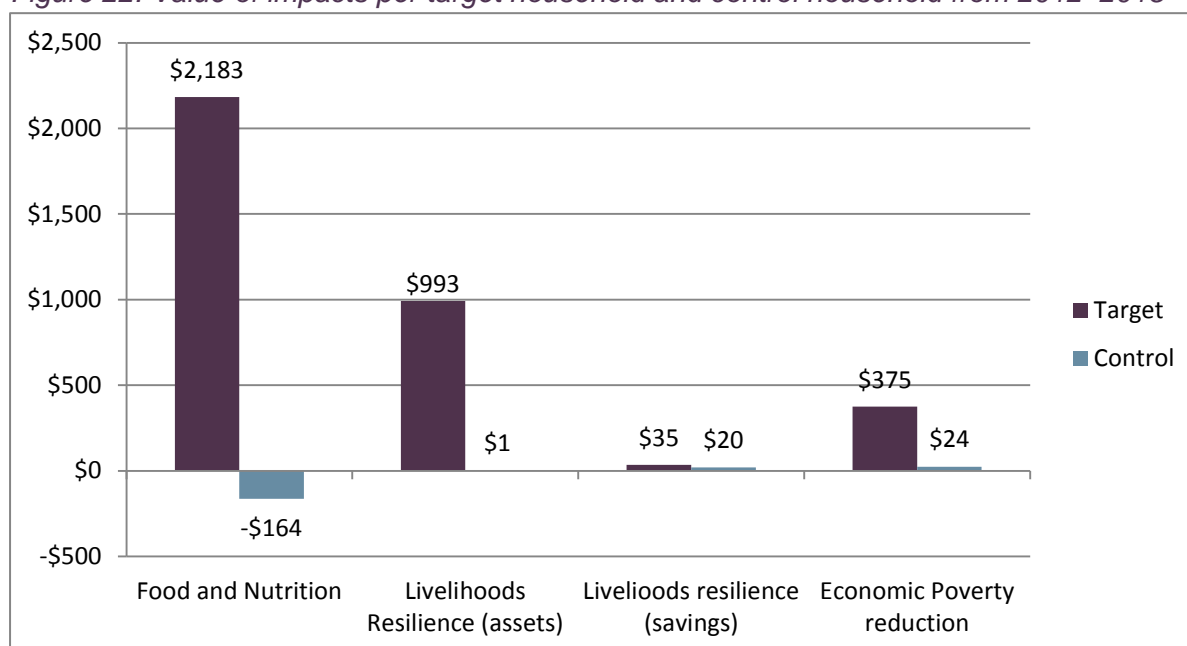
- Target households in focus groups identified *food and nutrition security* as the most valuable impact area, as before the program many did not have enough to eat or to feed their families, and afterwards, most felt they were able to produce enough for themselves and their families to eat sufficiently. Many of those in the focus groups recalled eating only once a day before the program, but now tended to eat three times a day. The program also taught participants the importance of eating a varied diet, and the value of eating protein-rich plant matter, such as groundnuts and soya.
- The next greatest net value created (\$1,450 per household) is for *livelihoods resilience (assets)* – which is a measure of increased value of household assets, such as agricultural land, livestock, business equipment, residential structures and consumer durables. The main drivers of this value are improvements in housing structure (such as investment in a tin roof as opposed to a thatched roof), investment in large consumer durables such as a sofa, and investment in a means of transportation, such as a bicycle.
- There was a much smaller increase in net value for *livelihoods resilience (savings)*, of \$23 per household. Assets are of greater relative value to households than currency, owing to the fluctuating value and high levels of inflation of the Malawi Kwacha – therefore those in the CARE Malawi program chose in general to invest additional income in assets rather than in savings.
- \$497 net value per household was created in the impact area of *economic poverty reduction* – this is the additional income gained per household due to the CARE Malawi program. Those in focus groups strongly expressed a preference for assets and food over income, citing a concern over the ability to budget effectively (and accidentally spending too much).
- Finally, \$61 net value is created per target women for *women's empowerment*. Target households identified that this impact area was relatively less important than *livelihoods resilience* and *food and nutrition security*, since basic physiological needs must be met as a priority. However, a stronger driver of this result is the relatively high counterfactual. In the absence of the Pathways program, it is likely that women would have become more empowered anyway (see discussion below).

The figures above measure the net value of change – that is, the value in change due to the Pathways Malawi program, when comparing the value created for the target households to the value that would have been created anyway without the program. Figures 22 and 23

¹⁰ https://www.unicef.org/infobycountry/malawi_statistics.html

below explicitly present the value of different impact areas for target women and households compared to the control group.¹¹

Figure 22: Value of impacts per target household and control household from 2012–2015

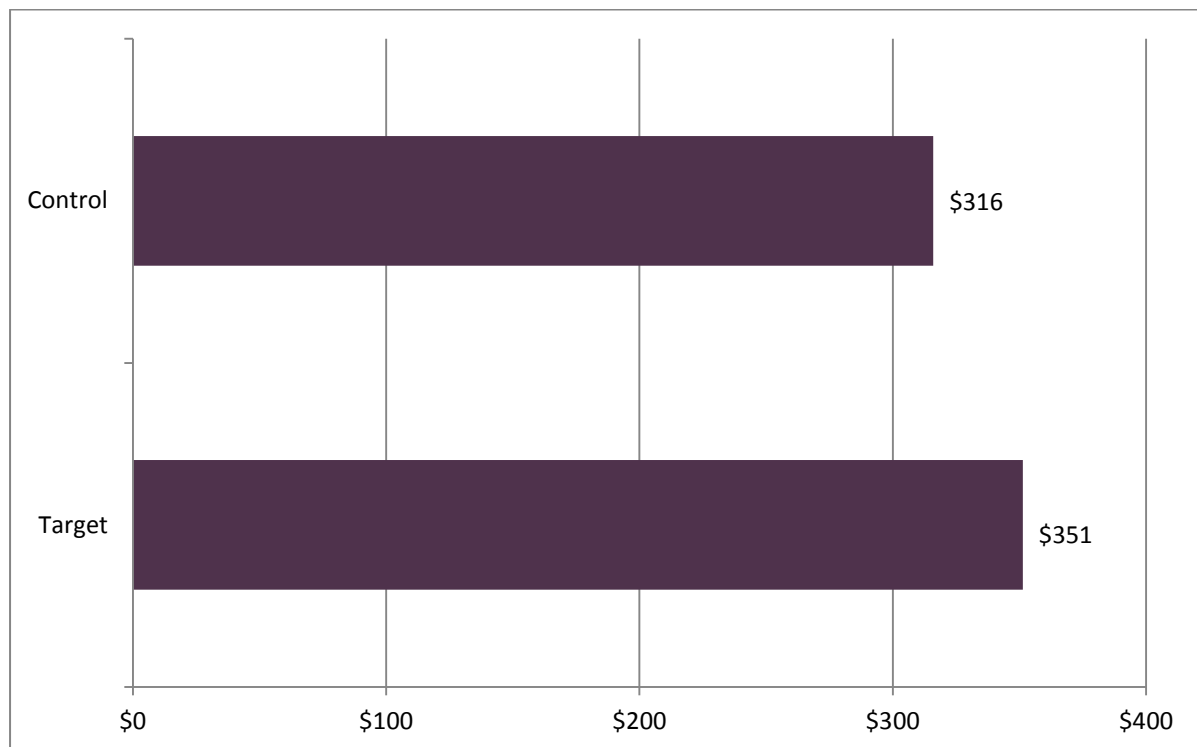


- Positive change is created across all impact areas for the target population, but for the control population, this is not the case. For the control population, food and nutrition security is negative – suggesting that without the CARE Pathways program, *food and nutrition security* would have got worse. Malawi is facing a food security crisis, and has declared a national state of emergency due to a prolonged drought which since 2012 has affected smallholder farmers' ability to grow food. Therefore, in the absence of the program, the data suggests that target households' food and nutrition security would have worsened.
- For *livelihoods resilience (assets and savings)* and *economic poverty reduction*, the data suggests that in the absence of the program there would have been minor improvements. This is likely because there is an increasing shift towards the establishment of Village Savings and Loans Associations (VSLAs) even beyond areas in which CARE works currently. VSLAs were first introduced by CARE into Malawi in 2000 and have been a huge success, proliferating far beyond the initial sites in which CARE works. As more households join VSLAs they gain access to credit, which they would not have had access to previously. This allows them to invest in income-generating activity, reducing economic poverty and leading to increased savings and assets – if income is used in such a way. Thus there is a slight upwards trend in these outcomes, even without the Pathways program.

¹¹ Note that the exact values are slightly different in Figures 21 and 22, because Figure 21 are total values (including projecting values forward, over impact area-specific benefit periods, with impact area-specific drop-off)

Target women farmers

Figure 23: Value of women's empowerment per target farmer and control farmer from 2012–2015



- The above figure shows that the net value change (difference between the target and control populations) for the impact area of *women's empowerment* is relatively low, even beyond the impact itself; being valued as relatively small compared to the other impacts. In control villages, empowerment of women has also increased, to nearly the same extent as in the target villages. This may partly be due to some level of gender awareness gained through radio or other NGOs acting in other villages. Furthermore, as discussed above, VSLAs are being established in most villages in the districts. CARE Malawi estimates that over 95% of women are in self-formed VSLAs, established without CARE support. This access to credit and increased economic empowerment, when mixed with gender awareness changes attitudes and enables women to begin to challenge gender imbalances, even without the CARE program.

Secondary and tertiary impacts

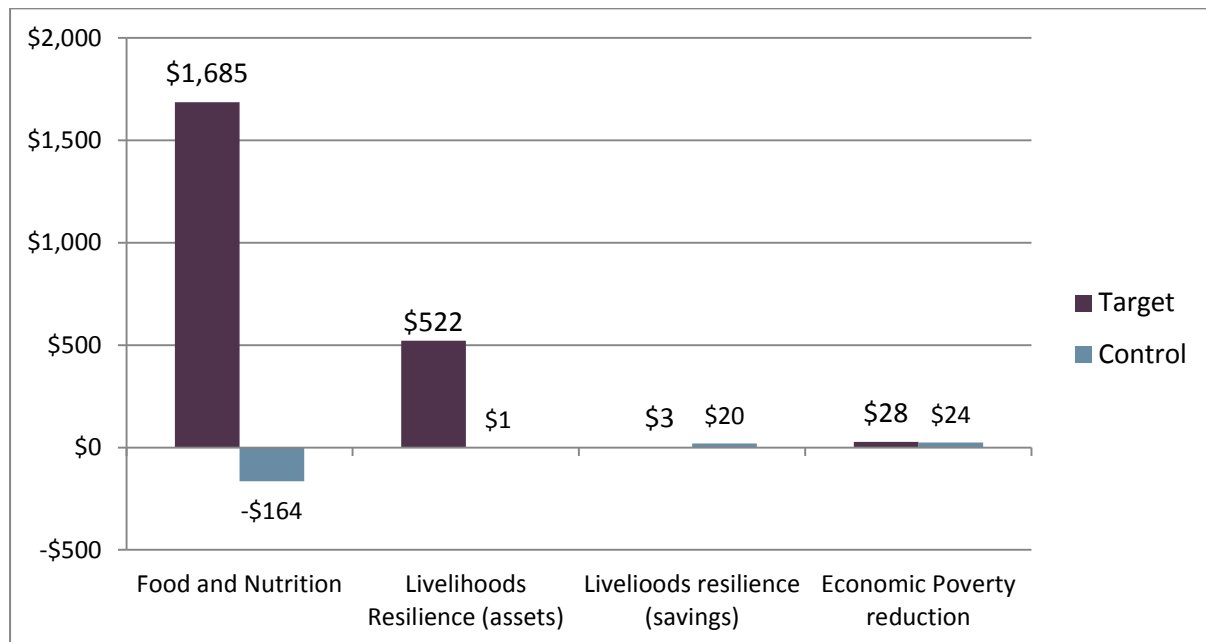
As indicated by Figure 20 (above), the value to secondary stakeholders is a significant feature of the Pathways program in Malawi.

The two stakeholder groups that gain value are the non-target households and the government. Data collected for the community trainers and the children indicated no change for these stakeholders.

Non-target households' resilience

Figure 24 presents the distribution of net value for non-target women and households across different impact areas.

Figure 24: Value of impacts per non-target household and control household from 2012–2015



- In general, the results for non-target women and households are similar to results for target women and households, albeit at a lower level of intensity. In the impact areas of *food and nutrition security*, and *livelihoods resilience (assets)*, non-target households in villages where CARE Malawi is working have significantly outperformed what happened in the control groups.
- The impact area of *economic poverty reduction* has not improved significantly compared to the control population. This may be because, even though non-target households' food and nutrition security is improving (as they are mimicking and learning from target households), their productivity is improving only enough for subsistence purposes. Those in non-target households tend not to be involved in collective marketing or selling of any additional produce, therefore their income may not be boosted.
- The exception is the *livelihoods resilience (savings)* impact area, where the non-target households have underperformed compared to the control group – that is, those in households in villages where CARE works, but with whom CARE is not working directly, have gained less in savings than they would have done. This may be due to the effect of 'keeping up with the Jones' – non-target households may be either spending savings or not saving income, in order to purchase assets, as the target households are managing to do.
- There are slightly higher levels of *women's empowerment* in non-target women than in the control villages.
- The above results present an average. It must be noted that out of the four villages visited for the purpose of collecting data for non-target households, there were quite varied levels of spillover of impacts in evidence.

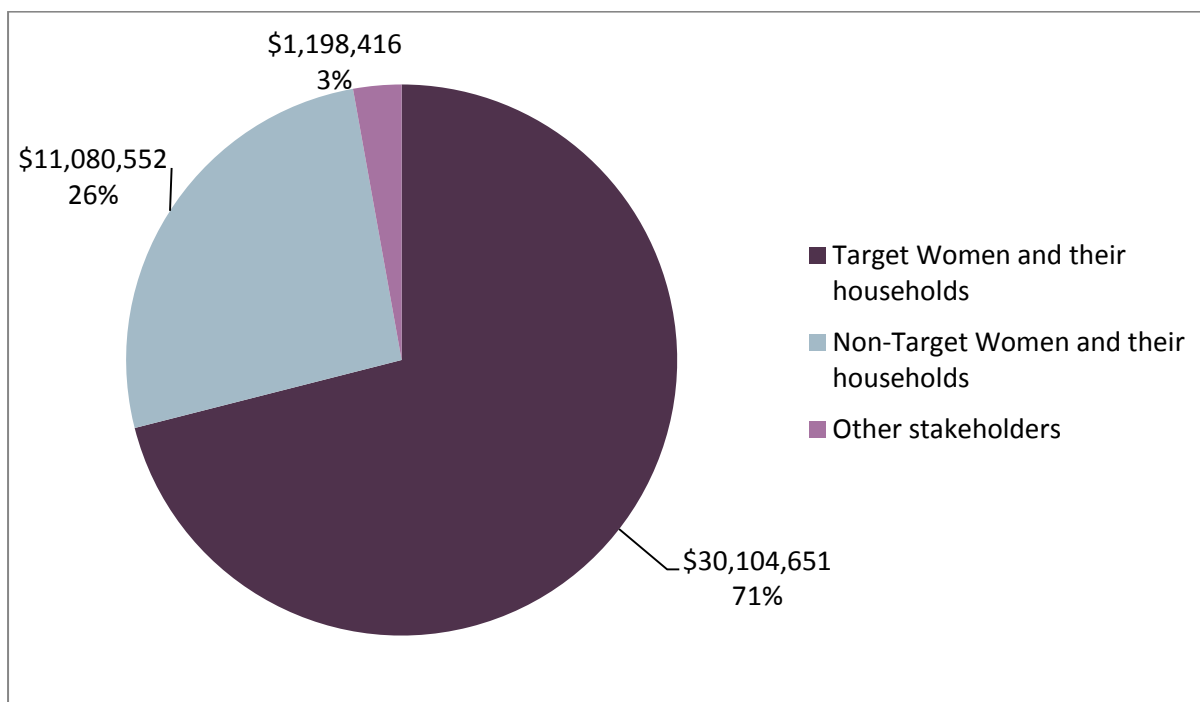
Government resource savings

Around half of the children in Malawi suffer from malnutrition to the extent of stunting¹². Increased food and nutrition security leads to improved child nutrition and child health. This leads to government cost savings associated with reduced child hospitalization. Our research found that on average, 11% of children needed hospitalization as a result of malnutrition prior to the Pathways program, whilst only 3% needed hospitalization following the Pathways program. This results in a saving of \$48,127 for the state, as some hospitals in Malawi are publicly funded. We do not model, conservatively, the increased value created for the economy in the long-term (due to increased productivity of a more healthy future adult population), as this is outside the scope of the study.

Mali

Figure 25 presents the total net value created by Pathways Mali distributed by stakeholder group. This value distribution is calculated after accounting for the counterfactual (namely, what would have happened in the absence of Pathways Mali).

Figure 25: Net value distribution by stakeholder group



- As expected, the majority (71%) of the value created by the Pathways program in Mali accrued to the target women and households.
- The program also generates a significant share of value for non-target women and households (26%) – those not directly involved with Pathways Mali but who

¹² ‘The cost of hunger in Malawi: The social and economic impact of child undernutrition in Malawi – Implications on national development and vision 2020’, COHA, 13 May 2015. <http://documents.wfp.org/stellent/groups/public/documents/newsroom/wfp274603.pdf>

participate in VSLA groups with Pathways members – as well as a small change for the education of children of Pathways participants (3%).

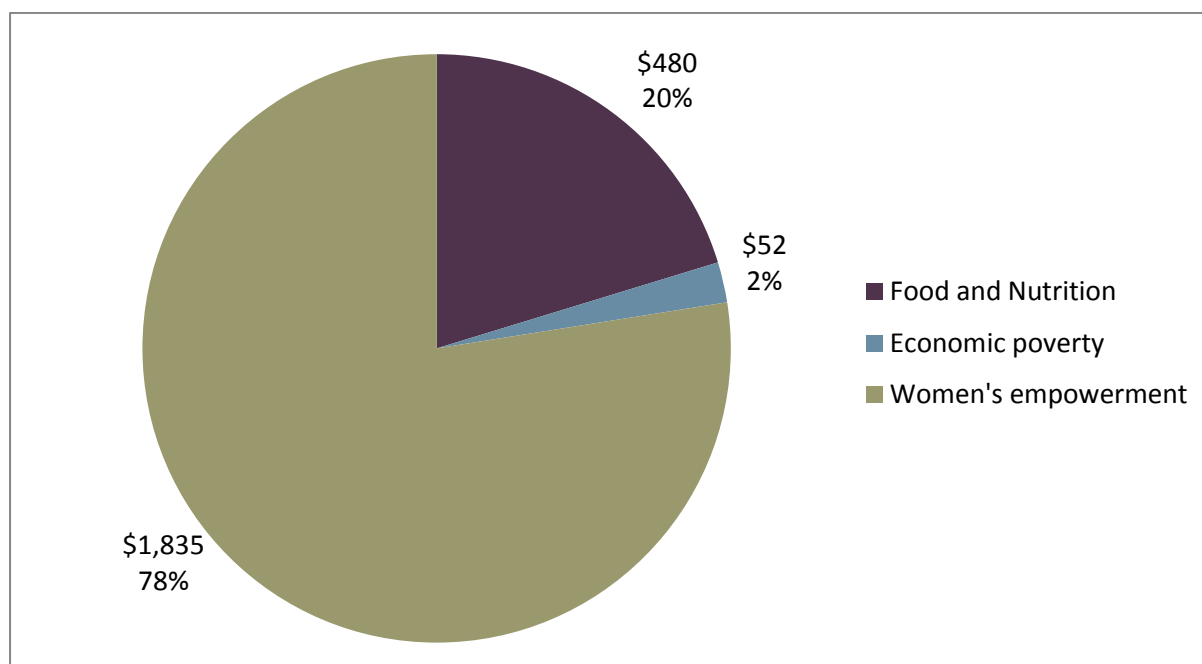
Primary impacts

This section presents the key results for target women and households, broken down by impact area. Due to a lack of quality baseline and end-line data for non-target women and households, we have assumed that this group experienced the change, like those in the target stakeholder group, through their regular interaction with Pathways participants in VSLAs.¹³ As such, we do not include an analysis of secondary stakeholder impacts.

Target households

Figure 26 presents the value distribution across the three positive impact areas the target women and their households, experienced through their participation in the Pathways Mali program

Figure 26: Distribution of net value per household by impact



*N.B. The value for women’s empowerment is calculated on a per person basis (the number of target women in Pathways) while all other values presented here are calculated on a per household basis.

- **Women’s empowerment** is the largest impact area in terms of net value created for target women, at nearly 80% of the total net value per household. Evidence from valuation workshops suggests that empowerment is valued highly by Pathways’ target women and there has been an increase, from baseline to end-line, in the percentage of women achieving empowerment as measured by the women’s

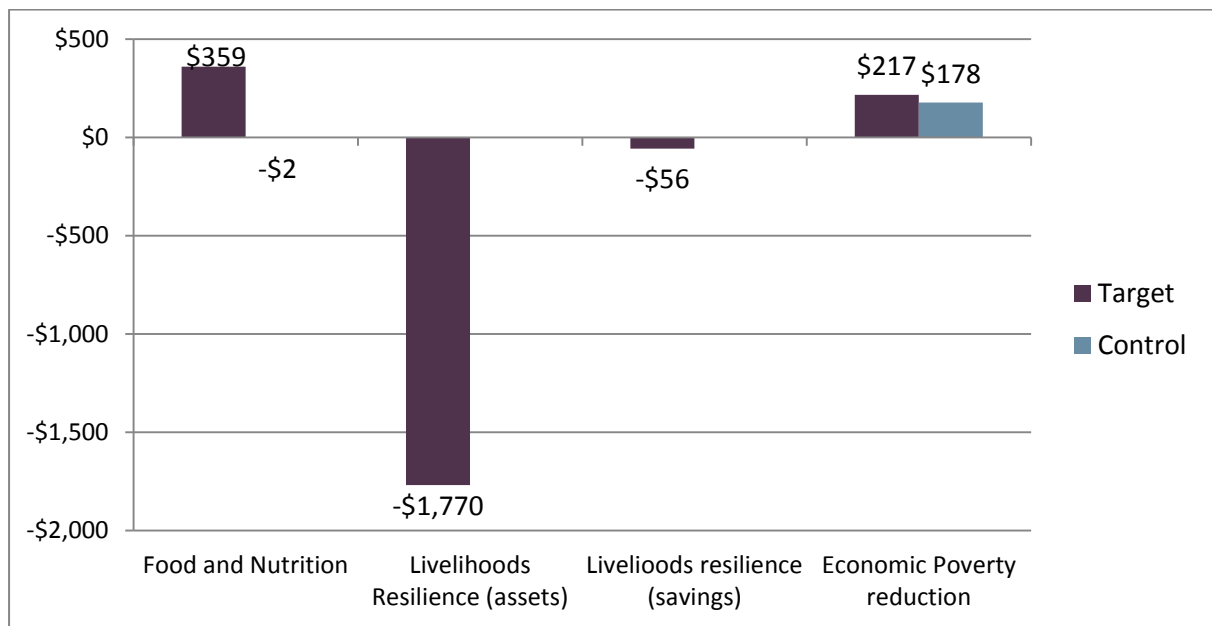
¹³ This may be an overestimation given the relative performance of non-target households to target households for Pathways Malawi. However, we felt that simply transferring the relative performance of different stakeholder groups from Malawi to Mali was no more robust an approach.

empowerment index. However, that increase is just 4% which did not appear to reflect the findings of the valuation focus groups. At 7% of the target population, the end-line result from the index suggests the proportion of women surpassing women's empowerment index threshold is still very low. However, as previously discussed, this may indicate the insensitivity of the measure rather than the reality of the lived experience of women's empowerment.

- *Food and nutrition security* is the second largest impact area in terms of its share of value created by Pathways Mali, generating over \$480 per household in value, for target stakeholders. Qualitative evidence from in-country workshops suggests that this change represents an increase in both the quantity and the diversity of foodstuffs consumed by Pathways participants and their households.
- There is also an improvement in the Pathways impact area of *economic poverty reduction*, with \$52 of net value per target household created by Pathways Mali. The smaller share of overall value accounted for by this impact area may, in part, reflect the net impact of income increases in Pathways Mali villages. The impact is significantly tempered by similarly large income increases in control villages. While income has gone up for Pathways participants, it has also done so for people in villages where the Pathways program has not been present.
- The remaining impact area, *livelihoods resilience*, has not been included in the figure above. It is not possible to accurately measure the net value generated for target stakeholders, owing to the unreliability of counterfactual survey data for this impact area. Data from the baseline and end-line evaluations for target women and households shows a large decrease in the sub-impact areas of livelihoods resilience (both the value of assets and the value of savings). Likewise, data from the counterfactual survey indicates improvements in control villages for both of these sub-impact areas. However, qualitative evidence indicates that the change (a fall in assets) for control villages would be at least as large as that for the target population. This perverse result is likely to be due to issues relating to finding suitable control villages for Pathways Mali. The recent conflict in the country has led to significant investments across many communities. Thus, finding communities which had similar characteristics to the target villages but which had not received significant assistance from CARE or other NGOs proved difficult. In order to avoid this substantially skewing the net value results and potentially creating a negative ratio, livelihoods resilience has not been valued in the model.

Figure 27 presents the changes in value per household of key impact areas for target and control households.

Figure 27: Value of impacts per target household and control household from 2012–2015



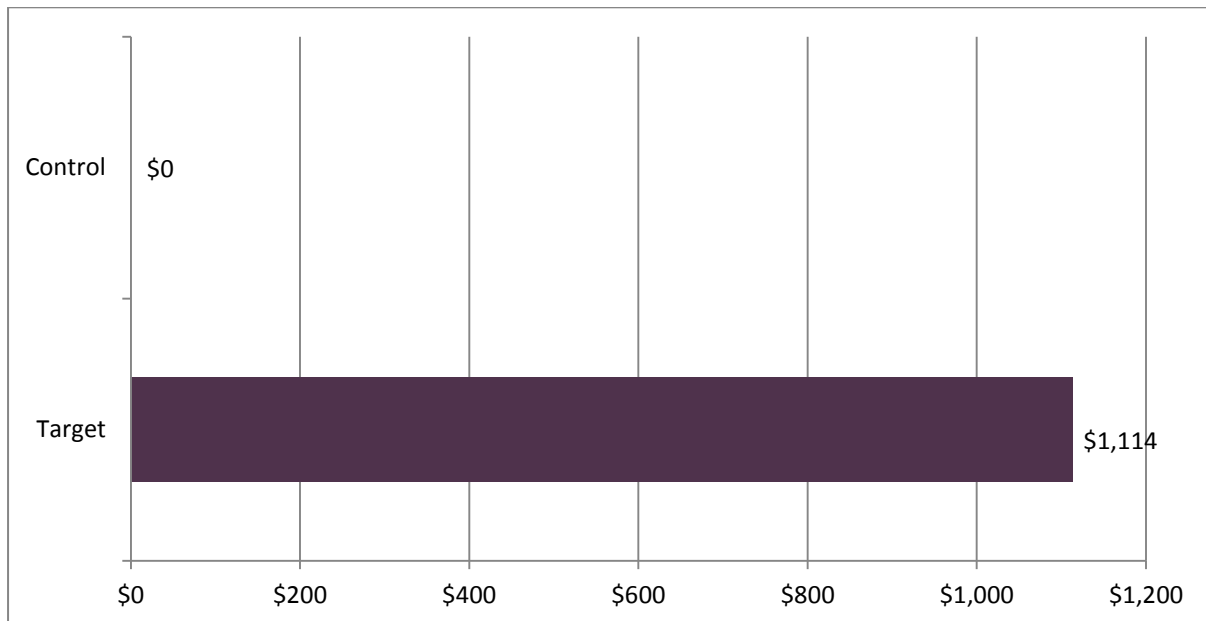
*N.B. Only changes for target households are presented for livelihoods resilience due to the lack of reliable control data for this impact area.

- The gross change per target household is not substantially different when comparing the *food and nutrition security* and *economic poverty reduction* impact areas (\$359 vs. \$217). However, the net impact on *economic poverty reduction* is significantly lower due to the fact that the control households also experienced a large increase in income (the indicator of economic poverty reduction applied in this model).
- There is a very large drop of \$1,770 in the gross value of assets per household (a sub-impact area of *livelihoods resilience*). This is consistent with the base and end line evaluation data showing a statistically significant decrease in the mean asset index of Pathways Mali households, both with and without agricultural land. While the data shows a decrease in ownership for the majority of asset types measured at baseline and end-line, this result is likely to be driven by significant decreases in ownership of higher value assets such as houses and means of transportation. These are also the assets which are more likely to be affected by shocks. The recent conflict in Mali is likely to be a shock which has contributed significantly to this drop in assets.
- The results also show a drop in the gross value of savings per household (a sub-impact area of *livelihoods resilience*). Qualitative data from the base and end-line evaluations as well as from in-country visits suggests that this may be explained in part by participants exhausting their savings for seasonal investment, and by the conflict affecting Mali at the time of the program.

Target women farmers

Figure 28 presents the change in value per person of the *women's empowerment* impact area for both the target and control households.

Figure 28: Value of women's empowerment per target farmer and control farmer from 2012–2015



- As the figure shows, woman farmers involved in Pathways Mali have value hugely the increase in empowerment they have experienced per person from baseline to end-line. While the increase in numbers of target women exceeding the women's empowerment index threshold in this impact area is relatively low (4%), evidence from the counterfactual survey indicates that no increase has occurred for women in villages not participating in Pathways Mali, implying that the full amount of this change can be attributed to the program.

5. Conclusions and Recommendations

Section 5 takes the findings presented in section 4 and draws general conclusions and as to the effectiveness of the Pathways program, whilst also reflecting on what they mean for the Pathways Theory of Change; the recommendations are directed toward any extension of the program or other future programs working to achieve similar goals to the Pathways program.

Conclusions

Undertaking such a piece of cross-country analysis is fraught with difficulties and is always faced with possible inconsistencies. Having said that, and given the limitations in the research (presented in the methodology section), some general reflections and conclusions can be drawn from the findings and analysis of the findings:

- The SCBA ratios suggests the Pathways program is very good VfM. The data in the theoretical model, around which the program is designed, is correct in its suggestion that women's empowerment is important in driving food and nutrition security and economic resilience. The study also showed the value that the female farmers give to women's empowerment as an end in itself and of itself. While the range of ratios varied across countries and there are various assumptions made, which could be challenged (particularly around secondary stakeholder population size, and extent of change experienced by those stakeholders), all of the models produced a positive impact, even when subjected to sensitivity analysis.
- Qualitative data from in-country visits suggest that it is the holistic nature of the intervention which creates the value, as much as any one individual activity or strategy. The in-country causality focus groups suggested that the building of skills and capabilities was a key driver of impacts. The learning-by-doing approach of the FFBS is aligned to growing individuals' functioning, effectively. The domain of the dynamic model of wellbeing is aligned to the impact area of women's empowerment.
- The only country program that threatened to produce a negative ratio was that of Mali. The two reasons for this were (i) the outbreak of conflict during the program's implementation and (ii) counterfactual data that suggested other communities had experienced improvements in particular impacts (livelihoods resilience) during the period of analysis (2012–2015). The first of these reasons was outside of the control of the program. The second may indicate that an adjustment in the ToC may have been worth exploring, given the newly insecure conditions faced by the country.
- Following on closely from the conflict point made above, and the matter of the Southern African drought of recent years which affected Malawi so badly, it is clear that country context can have a significant bearing on the relevance of the project, as well as its ultimate success. In the case of conflict, the Mali program's effectiveness (in VfM terms) was impacted. In the case of the drought, the program's focus on food and nutrition security and livelihoods resilience was perfectly positioned.
- The high SCBA ratio of the Ghana Pathways program is driven principally by an investment figure that is approximately 50% that of the Malian and Malawian programs, though still involving a household population less than 10% smaller than the Malawian program (and exceeding the Malian program). While per household

values created in Ghana are not as high as those in Malawi, the relative cost effectiveness of the program is significant.

Recommendations

- Related to the final conclusion covering Ghana's high SCBA ratio, Ghana was also the country program that appears to have been the most successful in terms of achieving near universal household participation within the communities in which the program operated. Whether these two phenomena are connected is worthy of further investigation, as the findings could directly affect the program's Theory of Change. Individual behavior change is often achieved most effectively through changing the norms of an entire community.
- The analysis suggests that a significant percentage (26%) of the net value produced by the program was received by stakeholder groups other than the target population. During the design stage of future, related programs, it might be worth considering where the externalities might occur and putting in place monitoring and evaluation processes to explore wider impacts.
- Should CARE wish to undertake future VfM studies with control groups serving as the counterfactual, every effort should be made to identify such groups at the program inception, so as to capture accurate baseline and end-line data. NEF Consulting does not necessarily recommend use of control groups for this purpose, as there are other more cost effective ways to achieve robust counterfactual data. In fact, the use of control groups for complex, multi-impact programs is perhaps not the optimal solution, given the dynamic interplay of the impacts and external factors unrelated to the program. A more cost-effective method is the self-estimation approach, which asks target populations to estimate the likelihood of the change having taken place, had the program had not existed. Evidence indicates that this approach can match the perceived accuracy of control groups.¹⁴
- The dynamic model of wellbeing provides a clear narrative as to the relationship between different impact areas. It indicates where in the model the results of an intervention at one point might see a result in another domain. An assessment of the wellbeing of target populations using this model might produce better targeted interventions for future programs while also indicating clearly where the likely impacts will be and what to measure.
- For the purposes of this valuation study, neither the various food and nutrition security indicators nor the women's empowerment index were appropriate. With respect to the latter, the complexity of the index and its insensitivity to change may paint an unrealistically negative picture of the situation around women's empowerment. NEF recommends reviewing this tool, particularly if further valuation work is desired. While we do not pretend that the exercises used to value these two non-economic impacts for this study were perfect, CARE may wish to reflect on how best to measure and value these impact areas in the future.

¹⁴ Mueller et al, (2014) 'The Counterfactual Self-Estimation of Program Participants: Impact assessment without Control Groups or Pretests', *American Journal of Evaluation*, vol. 35 (1) 8-25.