CARE Pathways Final Evaluation: Global Report

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TANGO INTERNATIONAL
TECHNICAL ASSISTANCE to NGOS

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Acronyms

AACES	Australia Africa Community Engagement Scheme
ACE	African Commodity Exchange
APAC	Australian Partnership with African Communities
BL	Baseline
CARE	Cooperative for Assistance and Relief Everywhere
CSI	Coping strategy index
DA	Development Agent
EL	Endline
FANTA	Food and Nutrition Technical Assistance
FG	Focus group
FGD	Focus group discussions
FTC	Farming Training Centre
FTF	Feed the Future
GBV	Gender-based violence
GPI	Gender Parity Index
GVH	Group village head
HDDS	Household dietary diversity score
HHH	Head of household
IFPRI	International Food Policy Research Institute
IGA	Income-generating activities
KII	Key informant interview
MK	Malawi Kwacha
MFI	Microfinance institution
MoFA	Ministry of Food and Agriculture
OIM	Opportunity International Malawi
SHG	Self-help group
PPS	Probability proportionate to size
SII	Strategic Impact Inquiry
Tsh	Tanzania shilling
VSLA	Village savings and loan association
WDDS	Women's Dietary Diversity Score
WEI	Women's empowerment index
WE-RISE	Women's Empowerment: Improving Resilience, Income and Food Security

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The TANGO Teams;

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Executive Summary

Using a strong gender focus, CARE's Pathways has sought to increase poor women farmers' productivity and empowerment in more equitable agriculture systems at scale. Funded through the Bill and Melinda Gates Foundation, Pathways is implemented in Ghana, India, Malawi, Mali, and Tanzania.

The Pathways theory of change (see Figure 8) applies to all five countries and defines pathways of change toward increased food security and empowerment along five "change levers":

1) Women's capacity (skills, knowledge self-confidence)
2) Access to productive assets and resources (inputs and financial tools)
3) Increased productivity
4) Increased influence over household decisions and assets, and
5) Improved enabling environments, which encompass cultural and social norms and attitudes and gender-sensitive policies

CARE identified 11 indicators in four key impact areas to measure Pathways long-term impact: **"More secure and resilient livelihoods for poor women farming households through their increased food and nutrition security and their improved coping and adapting ability."** The impact and performance indicators, organized by impact area, are as follows:

- **Food and nutrition security**: (1) mean household dietary diversity scores, and (2) mean women's intra-household food access;
- **Livelihoods resilience**: (3) coping strategies index, (4) % households adopting negative coping strategies in past 3 months; (5) % households using adaptation strategies to reduce the impact of future shocks, and (6) mean asset index;
- **Economic poverty reduction**: (7) per capita monthly household income, (8) per capita monthly household expenditures, (9) % households with savings, and (10) % women with savings; and
- **Women's empowerment**: (11) women's 5 domains of empowerment score

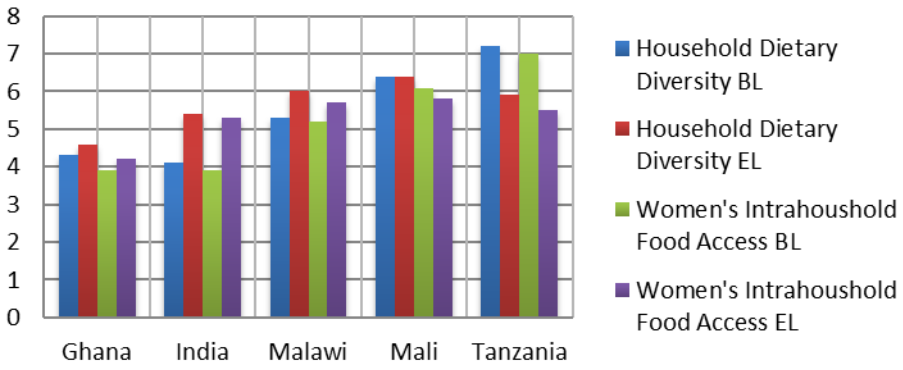
Context: Analysis of the data and endline findings should be understood in the context of environmental shocks that adversely affected agricultural production and food insecurity in all of the Pathways countries during 2015. In normal years, Pathways facilitated activities in regions characterized by chronic malnutrition, protracted dry agro-ecological conditions, and poor crop production in each of the five countries. Many Pathways farmers have experienced extraordinary drought conditions and poor-to-inexistent harvests and agricultural yields during the last two years of the project. Indian farmers faced limited access to sustainable water sources; two cyclones affected maize and rice yields. Pathways rural households experienced relatively high numbers of shocks as the project commenced; that number doubled in four of the five countries and increased by thirty percent in the fifth country, Malawi.

Despite these severe production and environmental challenges, participating Pathways households have managed to improve their food and nutrition security everywhere except in Tanzania. Pathways households in all five countries have managed to reduce the impact of future shocks. The weakened coping strategies, however, have strained Pathways households' capacity to save.

Results and Findings: Findings for each pathway are based on integrated quantitative and qualitative data. Organized around the impact and performance indicators, the global report presents results from baseline and endline quantitative household interviews and qualitative community focus group discussions. Table 35 in Annex 3 presents outcomes of the eleven baseline-to-endline impact indicators.

Food and Nutrition Security: Significant improvements occurred in India and Malawi on both food and nutrition security indicators: household dietary diversity scores (HDDS) and women's intra-household food access increased by at least one food group (Figure 1). Participant perceptions of how the Pathways project has improved household wellbeing validate improved dietary diversity scores in Malawi, where more than half of all surveyed women (56%) stated that participation in the program has resulted in improved food security; 45% asserted their improved nutrition knowledge as a result of project activities.

Figure 1. Food and Nutrition Security



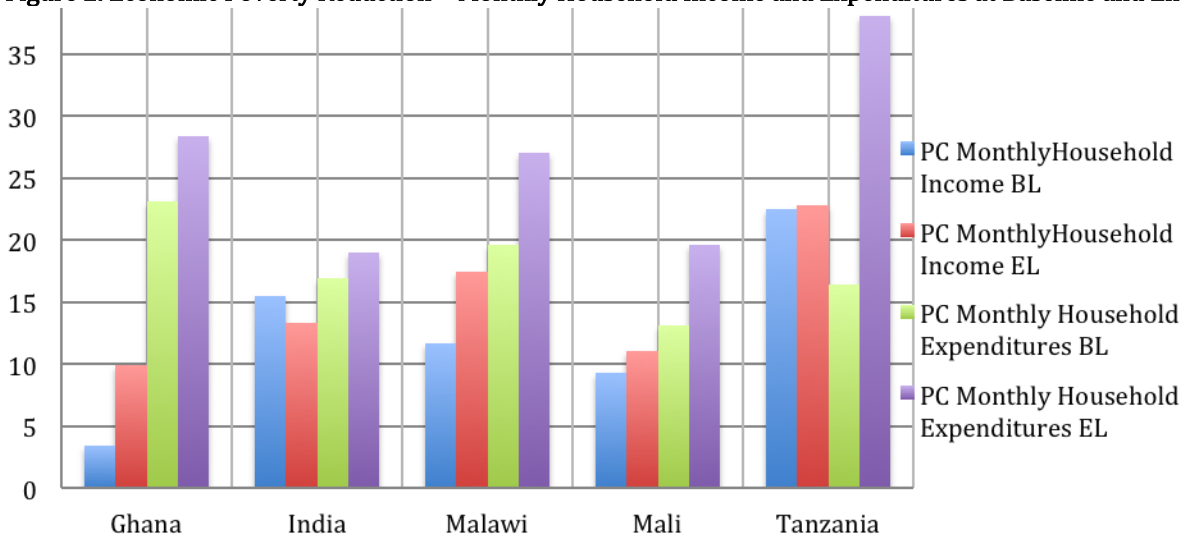
The significant decline in food security in Tanzania (Figure 1) can be attributed to a several causes, including a drought in 2015 that affected nearly 60% of Pathways households. Additionally, because female farmers in Tanzania reported increased production of cash crops such as sesame under the project, the decline in dietary diversity is possibly related to lack of knowledge on adequate nutrition. The project includes a nutrition component, but it had not been implemented at the time of the endline survey, and the project did not have a nutrition person on staff.

Survey data in Ghana and Mali did not indicate any statistically significant changes in either of the two food and nutrition security indicators. However, focus groups in Mali highlighted that Pathways has helped establish improved gender relations; for example women and men eat daily meals together, which contributes to more equitable food security.

Economic Poverty Reduction: Malawi and Ghana Pathways participants experienced significant increases in monthly per capital household income, which rose from $3.41 to $9.90 in Ghana and from $11.60 to $17.38 in Malawi (Figure 2). Qualitative research in Ghana indicates that Pathways women who started cultivating crops and participated in VSLAs contributed to household income. Focus group participants in Malawi attributed their participation in the project to their conviction that they no longer need to depend on a man to support them, lending support for the increase in household income.

It should be noted, however, that income data are notoriously unreliable, explaining in part why the other three countries did not realize any significant increases or decreases for household income. Like households in surveys elsewhere, households across the five Pathways countries undoubtedly underreported their income, specifically in India, due to fear of losing their eligibility to the Below Poverty Line (BPL) status and a potential loss of government benefits. Household expenditure data exceeded household income data throughout the five samples.

Figure 2. Economic Poverty Reduction—Monthly Household Income and Expenditures at Baseline and Endline



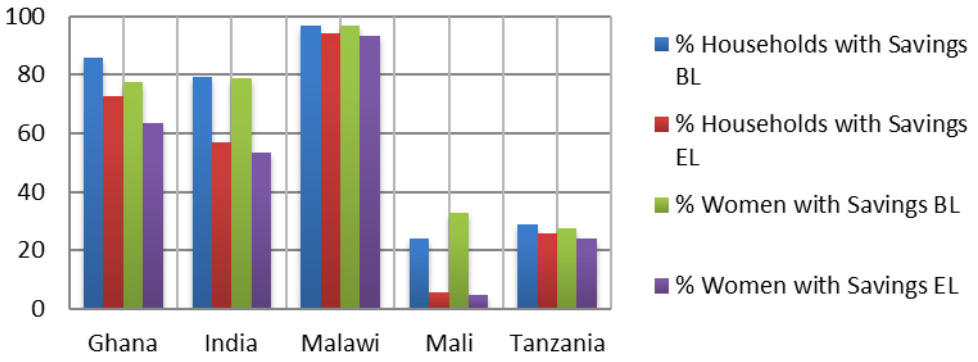
The more reliable economic indicator and income proxy, **mean per capita monthly household expenditures, increased significantly in all of the Pathways countries.**

Access to agricultural extension increased dramatically over the three-year period for women in all five Pathways countries. At endline, twice as many women in Ghana and Tanzania have access to output markets and more than twice as many accessed agricultural inputs in India and Tanzania, notable progress given the social and economic constraints faced by female farmers. Participating women in all Pathways countries except India and Mali have experienced improved access to output and input markets. Participants in some Pathways countries specifically linked increased access to extension services with the ability to get higher yields from small land parcels, increased crop diversity, and adaptation of early-maturing varieties that help buffer increasingly unpredictable rains. From baseline to endline, Pathways women participants across the five

countries are far more likely to apply improved agricultural practices, including increased adoption of improved seeds, use of manure or composting, crop rotation, and alley cropping. Women farmers have increasingly diversified their crop production as well; across the five countries the number of crops grown by women has increased. Successful households are serving as a model for those who are slower to adopt change; it is likely that more women will access services as they observe the benefits to participating households.

Household and women's savings rates, however, declined across the five Pathways countries (Figure 3), partly an indicator of the environmental shocks described above. Malawi experienced the highest percent of households and women with savings. Qualitative findings show that a few VSLAs faced challenges with fund mismanagement and as a result women save in their homes rather than the group. Other FGDs in Malawi reveal that some women do not like the pressure to borrow that comes with saving in a group. They too are convinced that saving is essential to their lives, but opt to save at home instead. Although the number of households who are saving did not increase, it is quite likely that the *amount* of savings increased. Qualitative evidence strongly supports this theory as do survey data which show that 85% of women interviewed believe that participating in Pathways activities has resulted in improved household savings.

Figure 3. Economic Poverty Reduction—Percentage of Households with Savings and Percentage of Women with Savings



Ghana and Tanzania Pathways households have also experienced no statistical improvement in savings patterns. Given that a good many participants in Tanzania prefer to keep their savings at home (43%), this means money is readily available for basic needs, but also suggests less money set aside for investment. Over the past three years, several mobile banking facilities have opened up, but are not available in Pathways villages, making it difficult for women with limited mobility to use the services.

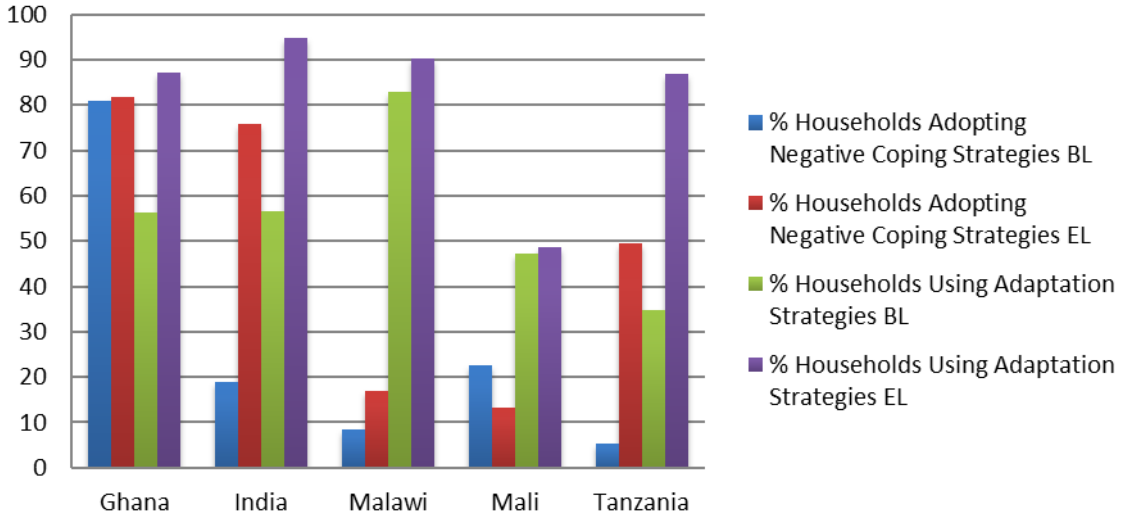
The number of households with savings in India has declined significantly from 2012 to 2015, as has the number of women with savings, likely due to use of savings to fund basic needs resulting from the financial impact of shocks on livelihoods. The precipitous decline in Malian households with savings and women with savings could reflect a worrying trend of some households using savings for consumption. However, given that the survey took place after harvest and at the time of

year when many women invest in small businesses or non-rain-fed agriculture activities, this decline could be due to women converting their savings through VSLAs into investment funds (as credit or fund share-outs).

Livelihoods Resilience: As noted above, Ghana, India, Malawi, and Tanzania households have experienced environmental and climate-based shocks at during the 2015 cultivation season leading up to the endline evaluation team visits, particularly shocks that impacted crop and livestock food supply, including prolonged drought, flooding, disease, and an increase in food prices. Although Malian households have not faced the shock of drought in recent years, Malian farmers have experienced uneven and inadequate rainfall, which has been a major factor depressing food production.

Pathways implemented adaptation strategies to reduce the impact of shocks on food security and livelihoods in all country contexts. Households in all Pathways countries have significantly increased their use of one or more adaptation strategy to reduce the impact of future shocks (Figure 4). Households in Ghana and Tanzania are appreciably more likely to diversify livelihood activities and invest in savings. In addition to these strategies, more households in Malawi report using drought-tolerant or early-maturing crops compared to three years ago. Similarly, Pathways India households diversify their livelihoods and increased savings but also engage in more production-related activities to bolster themselves against future shocks, including accessing additional land, changing crops, and purchasing more livestock.

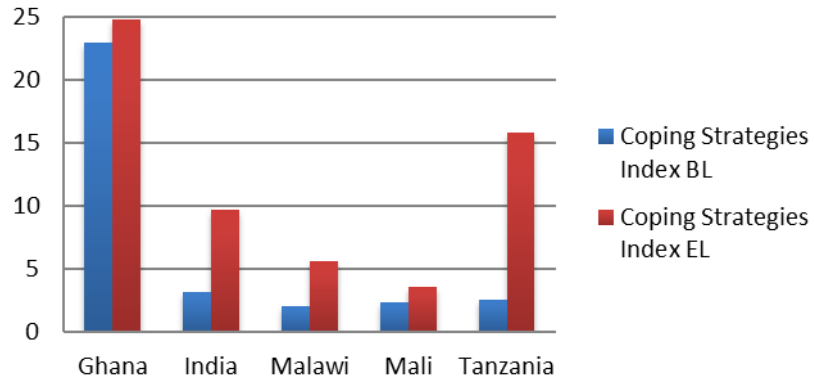
Figure 4. Livelihoods Resilience—Percentage of Households Using Negative Coping Skills and Percentage of Households Using Adaptive Strategies at Baseline and Endline



India, Malawi, and Tanzania households experienced substantially increased food and income shortages in the three months prior to the endline survey. Food and income shortages also rose significantly, albeit marginally, for households in Mali. Correspondingly, the coping strategy index increased for those households that reported food and income shortages (Figure 5). However,

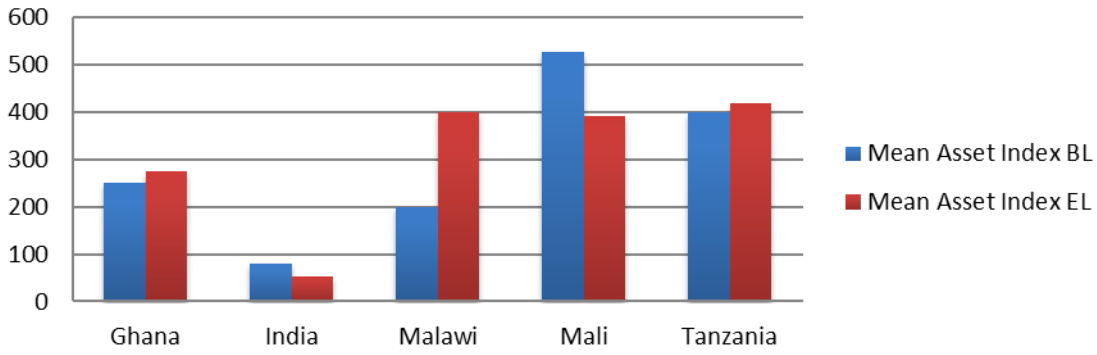
given the climatic and economic contextual factors of 2015, **it is remarkable that the coping strategy indices at endline did not spike much higher than they did**; on a scale from 0 to 100, scores increased from 3.2 to 9.7 in India, 2.0 to 5.6 in Malawi, and 2.6 to 15.8 in Tanzania. These relatively low values suggest that **although more households experienced stress from food shortages than they did three years ago, the level of stress did not increase substantially.**

Figure 5. Livelihoods Resilience—Coping Strategies Index at Baseline and Endline



Asset ownership in Ghana and Tanzania increased slightly from baseline to endline, while households in Malawi experienced a significant increase and those in Mali and India report a significant decrease over four years (Figure 6). Across all Pathways countries, asset ownership is highest among male-headed households, although the gap between male- and female-headed households is closing in India.

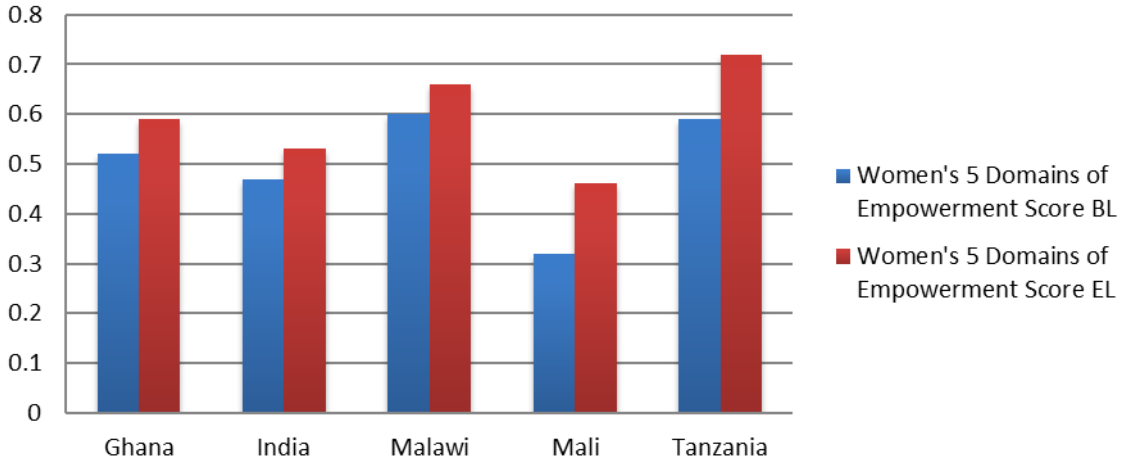
Figure 6. Livelihoods Resilience—Mean Asset Index at Baseline and Endline



Women's Empowerment: Application of a Women's Empowerment Index – WEI – comprising the Five Domains of Empowerment (5DE) and Gender Parity, has allowed TANGO to assess women's empowerment in each Pathways country context. The 5DE reflects the percentage of women who are considered empowered, based on their empowerment score. **Pathways has achieved a**

significant increase in women's empowerment scores across all five countries (Figure 7). The mean women's empowerment score increased an average of 6 points for Ghana, India, and Malawi Pathways participants, and 14 points for Mali and Tanzania (see Annex 3, Table 35). **Achieving empowerment (.80 or greater score) more than doubled** in Ghana (8% at BL to 16% at EL) and Tanzania (20% at BL to 43% at EL). The increase among women living in male-headed households tripled in Ghana from 2% to 8%; in Tanzania, the endline value of 25% represents a five-fold increase over the baseline value of 4.8%. In three years, the prevalence of empowered women in Malawi increased from 21% to 29%. More women in Mali are considered empowered (3% at BL to 7% at EL). Contrary to the other countries, the increase in empowered women in India is largely due to the massive increase among women living in female-headed households, which went from 16% to 43% over the course of the program.

Figure 7. Women's Five Domains of Empowerment Score at Baseline and Endline



The increase in empowerment scores varies by country as far as the domains that account for the gains. For instance, women in Tanzania are near or have crossed the threshold of empowerment in eight of the 13 categories in the WEI. Women in Malawi, on the other hand, report significant improvements only in the Resources and Leadership & Community domains. Areas with no detectable change and which still appear to be challenging for women in Malawi include mobility, attitudes that support gender equitable roles in family life, autonomy in production, and decision-making control for productive decisions. Although women in Mali report significant increases for 10 of the 13 indicators, only four approach or have crossed the threshold of .80 – control over productive decisions, participating in formal or informal groups, self-confidence, and satisfaction with leisure time. The rest are endorsed by less than two-thirds of the women. Women in Ghana maintained their acceptable level of achievement on decision-making for productive decisions, access to and decisions on credit and participating in formal or informal groups since baseline. Significant growth was reported for political participation, self-confidence, and mobility. Sole or joint ownership of assets and attitudes that support gender-equitable roles saw a decline over time, however. Finally, women in India made substantial gains in all five domains, although only decision-making input for productive decisions, participating in formal and informal groups, public speaking, and political participation approached or crossed the threshold of .80.

The Pathways program promotes greater gender equity for female farmers, which include increasing their influence over household income and decision-making. VSLA activities have undoubtedly contributed to women's increased participation in household income and expenditure decision-making. Significantly more women in Ghana have gained in sole or joint decision-making over agricultural income and expenditures, and control of assets (both household and agricultural). As a result of Pathways, women's productive and financial contribution has increased in many families, and this has increased women's influence and respect within the household. Many Pathways participants and their spouses stated that there is greater cooperation, harmony, and shared decision-making in their households and that men are listening to and consulting with their wives when making decisions that affect the household. Participants and key informants attribute this change to women's increased awareness about their rights through Pathways.

Reflections

Endline findings confirm that most chronically food insecure rural women that have participated in the Pathways program across five countries since 2012 have seen their lives, including social and economic relations, begin to change positively in profound and, the evaluation teams believe, in persisting ways. Pathways communities and households are seeing fundamental societal changes in attitudes about women, including enhanced acceptance of women's opinions, which are gradual and long-term. The empowerment felt and expressed to the TANGO evaluation teams by Pathways participants within male-dominated cultures should be seen as helping to bring about these long-term changes in women's status. Qualitative evidence from each of the five Pathways countries strongly suggests that gender-based violence has declined. Pathways participants credit these shifts in attitudes and practice to repeated messaging and initiatives through the program implementation process. Patriarchal attitudes about family life are slowly dissipating.

Some of the most rudimentary changes are beginning to occur in the process of redefining female and male relations and roles that will impact social as well as economic relations and wellbeing. Most Pathways project participants – both women and men – describe their lives as improved since the onset of the project more than three years ago. Why has wellbeing improved, according to most interviewed women? Not surprisingly, most Pathways participants prioritize their improved access to credit and savings as the most impactful changes to their wellbeing. They also overwhelmingly cited increased agricultural incomes (see Table 25 of this report), which they largely attribute to Pathways activities, including their participation in collectives that promoted their proactive engagement in economic and social spheres and activities previously denied to them.

The Village Savings and Loan Association, or VSLA – the Pathways collective – has developed as a new informal institution, providing Pathways with a most consequential engine as change agent. VSLA involvement has allowed women to be more frequently included in household purchasing decisions. Qualitative findings across the five countries support the proposition that various household members consider it a benefit to the household when women are able to save and access credit. Women within their households have benefited from VSLA assistance by enhancing agriculture and livestock productivity in and around their homesteads and non-cash or consumption crops over which they continue to have more control.

VSLA membership has helped to build women's capacity and confidence, and has gained recognition as perhaps the most important building block to promote women's empowerment in social as well as economic spheres. This leads to the question of how the broader process of the empowerment of women (and men) could be ensured in the long term. The sustainability of the VSLA groups and of this process of transformation of gender relations is one that the project may not have explicitly considered, but should be an issue on the agenda related to exit strategies.

Pathways women have made impressive strides economically and socially since 2012, but have observed areas with room for improvement. Less than half of all the women in each of the five countries have autonomy in production, despite great gains observed in the realm of women's agricultural production. Less than half of the women in India and Mali have control over household income and expenditures. Mobility is still a particularly large hurdle for women in India and Mali. Finally, less than half of the women express attitudes that support gender-equitable roles across the five country programs.

Finally, although some of the quantitative data differences from baseline to endline may appear slight, this should not be interpreted as a failure on the part of Pathways; women's empowerment in the economic as well as social domains may require years of Pathways-type intervention strategy to achieve in the countries where CARE works. Indeed, the simple fact that women and men are now consulting and sharing family decision-making may be the main nucleus of significant change in community gender relations.

Global Suggestions or Recommendations

The Pathways concept provides a good model that should be carried forward, either as a continuation of this project or in future projects. The eight global recommendations listed below are based on the findings of the final evaluation, complemented by some key recommendations country, by applying some of the lessons outlined in the body of the report. The global recommendations are explained and developed more fully in the Recommendations Chapter at the back of the report.

Refine some impact and performance indicators to measure outcomes in the Theory of Change. (See the Recommendations Chapter 6 at the end of the report for discussion of specific indicators.)

Use the strengthened collectives to expand women's access to formal micro-finance institutions – MFIs to increase their capacity to invest in income generating activities – IGAs.

Enhance financial management and leadership training as well as numeracy and literacy training for women participating in VSLAs and SHGs in order to increase their business skills and acumen.

Develop an effective value-chain strategy to integrate into a Pathways-type strategic programming approach.

Promote gender sensitization training in conjunction with technical agricultural and business skills training for Pathways participants, including men, and field staff from the onset of any future Pathways-type program in order to maximize women's empowerment potential.

Consider incorporating a nutrition education component into the TOC and Pathways programming strategy.

Consider strengthening an access to land component.

Systematically document Pathways impact on women's empowerment and the re-envision of gender norms through knowledge management.

1 INTRODUCTION AND BACKGROUND

Using a strong gender focus, CARE USA's Pathways program seeks to increase poor women farmers' productivity and empowerment in more equitable agriculture systems at scale. Funded through the Bill and Melinda Gates Foundation (BMGF) and implemented by CARE USA, the 5-year program targets 4317 households in two districts of Ghana, 13,006 households in two districts of India, 10,814 households in two districts of Malawi, 14,982 households in two districts in Mali and 4,865 households in Tanzania.

Aligned with other CARE initiatives, such as CARE Australia's WE-RISE program, Pathways was designed to gain a deeper understanding of the pathways that particular segments of poor women smallholder farmers take toward empowerment and toward greater household food security and resilient livelihoods for their households. CARE hoped to grow the program over time to serve as an effective programming platform with evolving networks of influence and learning partnerships at many levels, and to achieve impact at scale for prioritized segments of smallholder farmers.

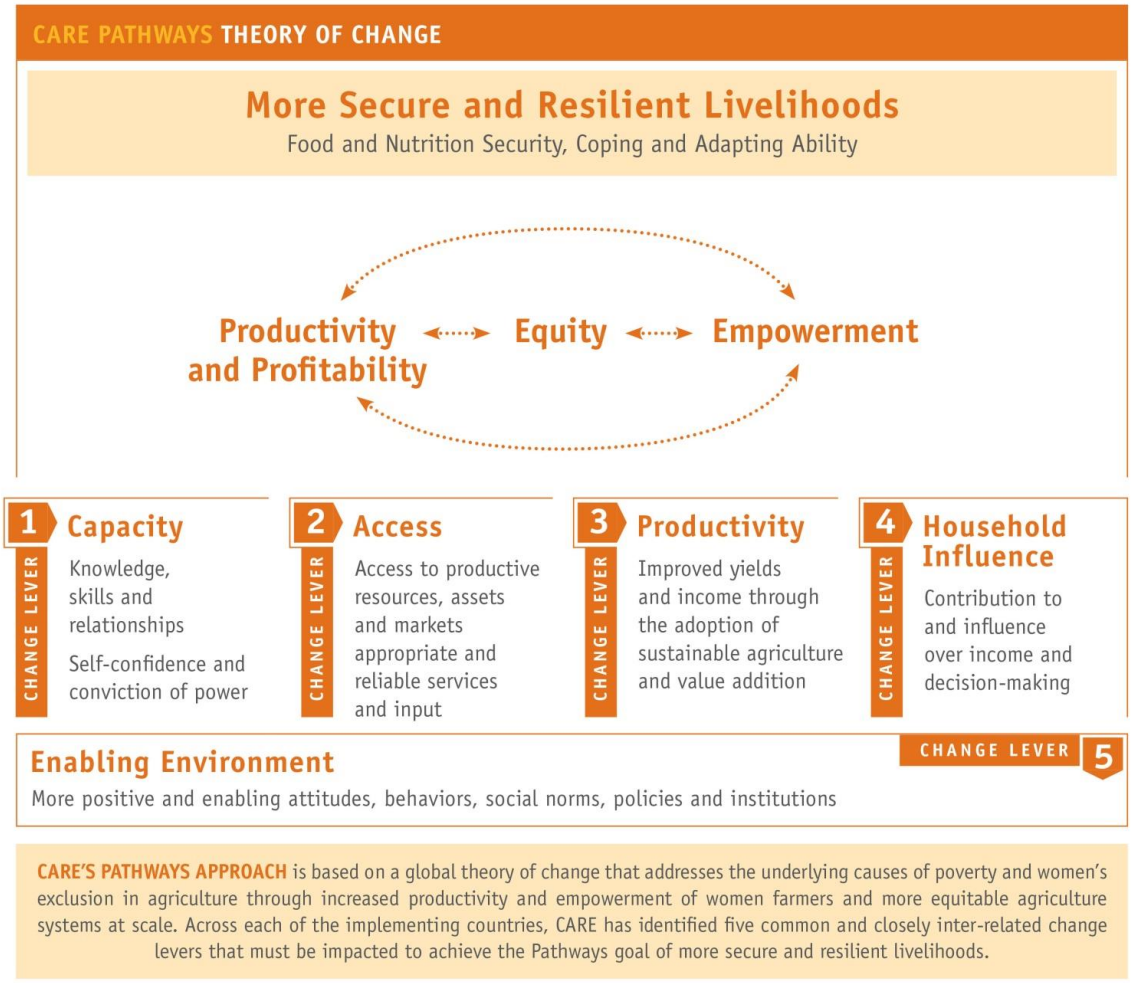
The Pathways program targets women in food insecure, poor and very poor, rural smallholder households. In some countries, this involves poor female-headed households. In other countries, it involves women from landless households who participate in agricultural activities solely through provision of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

1.1 Pathways Goals and Objectives

Pathways Theory of Change

CARE's previous work on the Women's Empowerment Strategic Impact Inquiry along with an 18-month analysis process of women in agriculture in all five Pathways countries provided the basis of the Pathways Theory of Change (TOC), which includes five domains of change, or change levers: 1) women's capacity (i.e., skills, knowledge self-confidence), 2) access to productive assets/resources (e.g., inputs, financial tools), 3) increased productivity, 4) increased influence over household decisions and assets, and 5) improved enabling environments (i.e., cultural and social norms and attitudes, gender-sensitive policies). Figure 8 represents the Pathways TOC.

Figure 8. Pathways Theory of Change



Thus, the program theorizes that marginalized, 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/implement gender-sensitive policies and programming that are responsive to the rights and needs of poor women farmers
- Agricultural service, value chain, and market environments of relevance to women are more competitive, gender-inclusive, and environmentally sustainable

The Pathways results framework (see Annex 1) illustrates the program's TOC approach, with positive change toward increased food security and empowerment resulting from the five change levers: capacity, access, productivity, household influence, and enabling environments. Objectives 2 and 3 ensure lessons learned from the Pathways experience contribute to positive change in the global discourse on equitable agricultural programming at scale.

Country Programs

CARE Ghana piloted the Pathways project for two years in the Garu-Tempane and Lambussie-Karni districts of the Upper East region to build on existing CARE programming and the vulnerability of the population. Located close to the border of Burkina Faso, this area is in one of the poorest regions in Ghana where food and nutrition security remain a priority. It is in the savannah ecological zone with unreliable rainfall and severe erosion difficulties. The project has been directly involved in 73 communities by working with 7000 poor women with the intention of impact 42,000 people from these women's households.[1]

CARE India implements the Pathways project in two very poor districts, Kalahandi and Kandhamal, in the state of Odisha. Throughout India, women farmers face inequalities, and this is especially true of those in historically poor and disadvantaged scheduled tribe (ST) and scheduled caste communities (SC). Significant ST and SC groups face considerable challenges in these districts with livelihoods impacted by often-difficult terrain and shocks, including the consequences of climate change and communal violence. Initially defining impact group for Pathways in Odisha to be 10,000 poor, marginal women farmers in SC and ST communities, Pathways ultimately reached 13,006 smallholding households. Another 40,000 individuals were impacted in the households of these women, including men - particularly husbands - in alliance building to change attitudes and social norms to promote equity for women.

The **Malawi Pathways** project is implemented two rural districts of central Malawi, Dowa, and Kasungu, which lie within the same agro-ecological zone and have similar traditional and cultural values and challenges. They were prioritized because they represent areas of entrenched gender discrimination, rural poverty, chronic food insecurity and unsustainable farming practices. The project works directly with 10,814 poor women smallholder farmers in 235 villages.[2]

The **Mali Pathways** project is implemented two rural regions of central Mali: Ségou and Mopti. They were prioritized because they represent areas of entrenched gender discrimination, rural poverty, chronic food insecurity and unsustainable farming practices. The project works directly with 14,982 poor women smallholder farmers.[3]

The **Tanzania Pathways** program is being implemented in the districts of Masasi and Nachingwea in southern Tanzania, which lie within the same agro-ecological zone and have similar traditional and cultural values and challenges. They were prioritized because they represent areas of entrenched gender discrimination, rural poverty, chronic food insecurity and unsustainable farming practices. Though rural, the area is undergoing rapid change in terms of improved roads to Dar es Salaam to the north and Mozambique to the south and greater connectivity with urban centers and coastal areas. The project targeted 16,484 households of married women in poor smallholder households and women heads of households.

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[1] At the time of the baseline report construction, CARE Ghana was reviewing its definition of the core impact group target. Though still to be finalized, the definition under consideration is women earning less than $1 per day per capita in their households and who are food insecure.

[2] CARE Malawi Pathways 2014 Annual Report

[3] CARE Mali Pathways 2014 Annual Report

1.2 Outline of the Report

The main purpose of the baseline and endline studies is to provide quantitative and qualitative data on food and livelihood security, agricultural productivity, and gender equality in each of the Pathways country program's targeted groups. The studies provide information necessary to characterize the status of participants at the project's start-up and again at endline in order to assess the effect of project interventions. The purpose of both surveys is to estimate and analyze the status of key impact and outcome indicators described in the CARE Pathways Indicator Framework (Annex 2). The baseline survey was explicitly designed to enable an evaluation of program performance through implementation of a directly comparable endline survey. Results for all indicators for which information was collected at baseline and endline are presented in Annex 3. Baseline information was used for setting short and long-term targets for tracking progress of Pathways country program activities and for refining and/or prioritizing project activities in each operational area.

This report synthesizes results from the Pathways endline reports for Ghana, India, Malawi, Mali, and Tanzania. First, it describes the methodology used in the studies, including data collection and data analysis, followed by a presentation of results and qualitative findings for food security (Section 3.2), resilience (Section 3.3), income (Section 3.4), and women's empowerment (Section 3.5) impact indicators for CARE's targeted program participants and their households. Section 3.6 presents brief findings on perceptions of program participants on project impact. Sections 3.7 through 3.10 present results and qualitative findings for CARE Pathways outcome indicators. Section 4 touches on Project Management, reviewing the successes and challenges related to staffing, resources, and monitoring and evaluation. Section 5 presents the conclusions of the evaluation team about the extent to which the Pathways goal and domains of change have been realized. The report concludes with a few recommendations for similar projects aiming to integrate agricultural productivity, profitability, and gender equality.

2 METHODOLOGY

This section gives a brief overview of the methodology. Full details on the evaluation methodology are reported in the full endline report for each Pathways country program.

The Pathways baseline and endline surveys use a non-experimental design for pre-post comparison of results (i.e., the same households are compared at baseline and endline). Both the baseline and endline surveys are "beneficiary-based" in that the sample is drawn randomly from a sample frame composed of all households with a female member in a collective (e.g., VSLA) with which Pathways is working. The sample size was determined to provide statistically representative results for household and individual level indicators at the project level.

Details are provided in the full endline report for each country.

2.1 Development of Indicators and Data Collection Tools

Pathways impact and outcome indicators were developed through discussions at the CARE M&E workshop held in Pondicherry, India in May, 2012 and subsequent comments from CARE USA management and staff. As a result of the May workshop, indicators were developed that would allow for assessing the broader impact of CARE's work with systems that affect women's productive engagement in agriculture, and in particular with the CARE AUSTRALIA WE-RISE program because of its strong gender focus, similar program approach and methodology, and overlapping countries of implementation. Thus, a set of "global" indicators was designed to align with better practices and has been validated by experts from FANTA-2, USAID, IFPRI, and others. Detailed descriptions of indicators, along with direction of change targets, are summarized in the CARE Pathways Evaluation Plan.[4] Indicators included in the plan represent those that are tracked at the impact and outcome levels. Some are composite indicators that require the combination of two or more variables. The evaluation plan disaggregates indicators by sex or sex of the household head, by women beneficiaries only, and by male and female respondents within the same household.

Impact indicators are presented below. The full set of indicators (impact and outcome levels) and results are presented in Annex 2.

Summary of Pathways Impact Indicators

Food and Nutrition Security

- Mean household dietary diversity scores
- Mean women's intra-household food access

Livelihoods Resilience

- Coping strategies index
- % households adopting negative coping strategies in past 3 months
- % households using adaptation strategies to reduce the impact of future shocks

Economic Poverty Reduction

[4] TANGO International. 2012. CARE Pathways Evaluation Plan.

- Per capita monthly household income in USD (farm and non-farm combined)
- Per capita monthly household expenditures
- % households with savings
- % women with savings
- Mean asset index

Women's Empowerment

- Women's empowerment index

2.2 Quantitative Study

Sample size

The baseline survey design was discussed at a workshop in Pondicherry, India May 21-25, 2012 and subsequently reviewed by CARE USA before implementation of the survey. Each country independently calculated their sample size based on household expenditures, with a targeted improvement of 30% (X_2) over the life of the activity. A design effect of 2, $Z_\alpha = 1.282$ (Z-value corresponding to a 90% significance level), and $Z_\beta = .84$ (Z-value corresponding to 80% power) were used for all country-level calculations. Each country determined the non-response and attrition rates and the estimated mean of the indicator at the time of the first survey (X_1).

The minimum sample size required was computed using the formula for means provided in the FANTA Sampling Guide:

$$n = N * D\,[(Z_\alpha + Z_\beta)^2 * (sd_1^2 + sd_2^2) / (X_2 - X_1)^2] * A$$

where:

n = required minimum sample size per survey round or comparison group

N = non-response factor

D = design effect

A = attrition factor (baseline to endline)

X_1 = the estimated mean of the indicator at the time of the first survey

X_2 = the *expected* mean of the indicator either at some future date or for the program area such that the quantity ($X_2 - X_1$) is the size of the magnitude of change or comparison-group differences it is desired to be able to detect

Z_α = the Z-score corresponding to the degree of confidence with which it is desired to be able to conclude that an observed change of size ($X_2 - X_1$) would not have occurred by chance (α - the level of statistical significance)

Z_β = the z-score corresponding to the degree of confidence with which it is desired to be certain of detecting a change of size ($X_2 - X_1$) if one actually occurred (β - statistical power)

sd_1 = the expected standard deviation of the indicator the time of the first survey

sd_2 = the expected standard deviation of the indicator at some future date

Using these values, the minimum baseline sample size (n) was computed for each country (Table 1). The minimum sample size for the endline was reduced in each country due to attrition and/or non-response factors, including households (or villages) who were no longer participating in the program or who had migrated out of the program area.

Table 1. Endline analysis sample size

	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
All households	173	110	925	451	611	451	795	449	849	474
Female HHHs	29	23	209	84	146	138	81	37	275	179
Male HHHs	144	87	715	384	464	313	695	412	574	295

Following discussions between CARE headquarters and TANGO, it was agreed that statistical comparisons between the baseline and endline would not include households who resided in communities where Pathways had ceased to operate in 2012. Thus, point values were calculated with the original baseline data from each country so that the baseline-endline comparisons better reflected the program participant populations.

Survey Instrument

The data collection tools originate from a standardized set of global tools developed in collaboration with CARE USA and CARE AUS. Each CARE Country Office helped to contextualize the standardized tools to the local context. The quantitative survey instrument was designed to ensure that baseline information on project indicators was sufficiently captured. The indicators emphasize women's empowerment across the five domains identified in Feed the Future's (FTF) *Women's Empowerment in Agriculture Index* (WEAI),[5] including agricultural production, access to and ownership of resources, control over income and expenditures, leadership and community participation, and allocation of time. TANGO and CARE also drew on other sources to develop the indicators, including CARE's Strategic Impact Inquiry on Women's Empowerment (SII)[6] and IFPRI's *Engendering Agricultural Research, Development and Extension*.[7]

Learning from baseline survey implementation, where the excessively long survey potentially jeopardized data quality, CARE USA, CARE AUS, and TANGO collaborated on reducing the endline survey to only the essential variables that are needed to measure and shed light on impact and outcome variables. This was a great improvement and resulted in enumerators and respondents who were much more engaged with the survey process.

For more detailed descriptions regarding the quantitative aspects of the study and tools, see the appropriate endline country report.

2.3 Qualitative Study

Qualitative Tools

A variety of qualitative participatory tools were developed to explore contextual factors, including agency, structure, and relations and their impact on poor smallholder women farmers. The

[5] USAID. 2011. Women's Empowerment in Agriculture Index.
[6] CARE International. 2006. The Courage to Change: Confronting the limits and unleashing the potential of CARE's programming for women. Synthesis Report: Phase 2. CARE International Strategic Impact Inquiry on Women's Empowerment.
[7] IFPRI. 2011.

qualitative tools allowed the team to capture information on norms that affect women's empowerment and power relationships, particularly as these factors relate to women's ability to actively engage in and have control over agricultural production and marketing activities. The tools were designed to provide insight to better understand and interpret the quantitative indicators and to help identify the key factors critical to the success of the program, including progress markers defined at midterm by participants and country teams. In addition to topical outlines, participatory tools may have included a ranking exercise that captured the perceived effectiveness of Pathways project activities, wealth ranking matrix, daily activity record for women, or social gender mobility mapping tools depending on the country.

Data Collection

Participatory methodology was used to secure information from program participants, including their views of what is most valuable and relevant. Qualitative data collection was performed through three main focus group discussions (FGDs) in each community visited. The three focus groups were: 1) female VLSA members, 2) husbands of female VSLA members, and 3) female non-members. Additional group discussions may have been held specialized groups (e.g., marketing committees, nutrition groups).

For more detailed descriptions regarding the qualitative aspects of the study and tools, see the appropriate endline country report.

2.4 Data Analyses

Quantitative analysis: The quantitative data were collated and configured by TANGO International staff using SPSS v20.0 software. This included organization of the data to align with the common indicator framework, calculation of secondary variables (asset index, coping strategy index, etc.) from primary variables where appropriate,[8] and formulation of tables and charts. Analysis and reporting is consistent with the CARE Pathways Evaluation Plan, therefore data are disaggregated by sex of respondent, female respondents only and disaggregated by gender of the household head, female respondents only but not disaggregated by gender of the household head, or disaggregated by gender of the household head (e.g., demographic data, savings, etc.)

Statistical differences were determined with t-tests or non-parametric tests (e.g., Mann-Whitney U). Probability levels are reported for statistically significant differences only.

Qualitative analysis: After each two days of data collection, the team spent one day to review all data collected, cross check information and its interpretation, and sharpen inquiry tools as necessary. All notes were recorded in English. This information was later integrated with the quantitative analysis by TANGO.

2.5 Limitations

Challenges or limiting factors that can negatively affect implementation of the survey and potentially the quality and validity of the data are discussed below.

[8] Annex 5 provides a description of how the asset and coping strategy indices were computed. Annex 6 describes the computation of the WEI, as well has how it aligns to and differs from the WEAI.

Data Quality: The endline sample size in Ghana was insufficient to detect any but very large changes between the baseline and endline. This is especially problematic for determining statistical differences between population subgroups. Female-headed households totaled only 23 at endline, under the lower limit for sample sizes (n=25) generally used by TANGO. However, Ghana results include values for sample sizes of 20 or larger in order to be able to report values for female-headed households. In addition, large numbers of 'don't know' responses and missing data limit the reliability of some indicators. Several indicators (income, net income, and agricultural yield) may also be unreliable due to low levels of literacy and numeracy, and limited financial record keeping by participants. One survey question asks about record keeping and shows about three quarters of women do not keep financial records, making suspect the quality of data on production, expenses, and income.

Language: In India and Malawi, the endline survey was programmed into the tablets in a local language. The baseline survey was programmed in English and translated by enumerators as they administered the questionnaire. While this greatly improves the accuracy and reliability of the endline data (all enumerators asked questions exactly the same way) it may also mean that baseline and endline questions were asked slightly differently. If so, survey participants may have elicited different types of responses due to differences in translation. The extent to which this limitation may have affected the results is unknown.

Timing of the survey: When the baseline and endline surveys were conducted can have important effects on data, and ultimately interpretation of results. In India, some communities were harvesting at the time of the endline evaluation, in large part due to abnormal weather patterns. This made it very challenging to convene community members for some of the participatory exercises, particularly for wealth ranking and daily activities, and for focus groups of women who are not SHG members. Information from the limited number of participants in these groups is not as strong as focus groups and ranking exercises with SHG members and their husbands.

In Malawi, surveys were conducted at the end of the harvest season for the majority of the main seasonal crops, a time when food shortages are not as prevalent as other times of the year. Although endline data were collected one month later than baseline data, the 2015 harvests were delayed due to the late start of planting.[9] Thus, the timing of the surveys was similar relative to household harvests, and therefore the data comparable. However, neither baseline nor endline data are able to determine the depth of food insecurity that households face during the lean season.

In Tanzania, the baseline and endline surveys were carried out at approximately the same time of year (i.e., during the same season). However, due to a number of delays, the baseline study was conducted during Ramadan. This timing influences the interpretation of baseline results and may not reflect true conditions that are of importance to the Pathways program. Baseline data was collected from August 8 – September 10, 2012 and endline data was collected from July 26 –August 7, 2015. Thus, the main limitation resulting from the timing of the survey will be challenges in interpreting and comparing the changes effects of interventions from baseline to endline.

[9] FEWS NET, *Malawi Food Security Outlook*, April to September 2015. http://www.fews.net/sites/default/files/documents/reports/Malawi_FSO_2015_04.pdf

Accuracy of sampling frames: CARE Tanzania's sample frames for Pathways beneficiaries contained errors that resulted in overestimation of the number of female collective members as well as difficulties in locating the selected respondent. The sources of these errors were: inclusion at baseline of women who had originally enrolled but never participated in project activities; and inclusion at endline of women who began as project participants but dropped out after some time; women no longer living in the community, of men's names, women belonging to more than one collective, and women who were no longer members of the collective. Some changes to the sample frame, resulting from attrition due to migration and women dropping out of collectives, are to be expected. Beneficiary lists were verified in advance by CARE to ensure that participants were present in their villages; however, it was not verified that the persons on the lists are currently, or have ever been, participants in the project. There are a number of instances where people who are listed as respondents at baseline state that they have never participated in the project. In some communities nearly half of the people listed from the baseline survey stated that they are no longer, or never have been participants, with the result that the total number of collective members available to be surveyed was less than the sampling target for that village. Due to management turnover within CARE since the beginning of the project, the current staff could not explain how the original lists were compiled or how the errors occurred.

Smaller sample sizes than those determined during the design phase can affect the validity of results if the reduced sample size violates underlying assumptions of the statistical tests being conducted. The sample sizes decreased precipitously from baseline to endline, thereby increasing the likelihood of non-random selection of households with an ever-decreasing sample frame and the uncertainty of whether sampling frame errors were distributed evenly across the survey population. In the end, TANGO does not feel that data were compromised sufficiently to invalidate results.

Length of survey: The questionnaire is long by TANGO's standards (on average requiring two to three hours per household to conduct). Lengthy surveys increase the likelihood of error and the quality of data being collected. Enumerators may feel pressure to complete a certain number of questionnaires per day and so may rush through or skip questions or sections. Participants may lose patience with the interview or decline to participate.

3 RESULTS AND FINDINGS

The overall goal of the Pathways program is to increase the productivity and empowerment of women farmers in more equitable agriculture systems at scale. Critical to realizing this goal are improvements and increases in four key long-term impact areas: *household food and nutrition security, household resilience, economic poverty reduction, and women's empowerment.*

Section 3 begins by summarizing the household characteristics of the sampled Pathways beneficiaries within each country. We then describe critical findings for each key impact area in which the projects seek improvement: Section 3.2- Food and Nutrition Security; Section 3.3- Household resilience; Section 3.4 Economic Poverty Reduction; and Section 3.5 Women's Empowerment. The remaining sub-sections (3.6 through 3.10) present greater detail specific to Objective 1 and the main outcomes described in CARE Pathways Indicator Framework (Annex 2). Annex 3 presents all baseline and endline results for all impact and outcome indicators.

3.1 Household Characteristics

This section summarizes the household characteristics of the sampled VSLA members.

As expected in a longitudinal study, household demographics are similar between baseline and endline surveys in all five countries, with a few possible exceptions (Table 2). Increases or decreases in household size, particularly in Ghana and Mali, may be attributable to an accompanying increase or decrease in children under 18. Female-headed households have decreased in India, perhaps due to the increase in marriages, while the number has increased in Malawi and Tanzania, possibly owing to the increase in divorces.

In Ghana, India, and Tanzania, levels of education of the household head have risen slightly as indicated by the decrease in those with no formal education. Although there was a decrease on this variable in India, the values between Primary 1 and Intermediate have all increased.

The average number of females involved in agricultural production activities has remained relatively stable for all countries with the exception in Mali, where the number decreased from 3.3 to 1.4.

Table 2. Household demographics

Indicator	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
Household size	6.2	7.0	4.5	4.2	5.1	5.7	12.0	8.0	4.1	4.3
Number of children (under 18)	3.5	4.5	1.7	1.4	2.7	3.2	6.2	4.5	1.8	2.0
Number of females in household	3.0	3.3	2.2	2.2	2.6	3.0	6.0	3.4	2.3	2.3
Number of females involved in ag in HH	1.2	1.3	1.2	1.3	1.5	1.5	3.3	1.4	1.3	1.2
Female-headed households (%)	19.2	20.9	23.5	17.9	23.9	30.6	8.2	8.2	34.2	37.8
Age of head of household	49.4	49.8	46.0	48.8	42.5	45.5	53.6	52.1	49.0	50.8
Households with a disabled member (%)	^	14.6	4.5	2.6	14.9	17.1	15.8	15.6	17.1	19.4
Education of head of household (%)										
No formal education	79.2	66.4	52.7	48.3	9.2	9.5	49.4	49.9	21.5	14.6
Junior Primary (1-4)	-	-	-	-	18.0	18.8	-	-	-	-
SP (5-8)	-	-	-	-	51.2	51.3	-	-	-	-
Junior Secondary (1-2)	-	-	-	-	11.1	11.4	-	-	-	-
SS (3-4)	-	-	-	-	8.7	7.2	-	-	-	-
Primary 1	9.2	10.9	15.7	16.5	-	-	6.0	5.1	71.5	76.4
Primary 2	3.8	2.7	11.4	13.3	-	-	4.2	3.6	-	-
High school (8-10)	4.6	0.0	16.8	18.6	-	-	-	-	-	-
Intermediate (11-12)	1.5	1.8	2.0	2.4	-	-	-	-	-	-
Graduation	1.5	4.5	1.4	1.1	-	-	-	-	-	-
Secondary or more	-	-	-	-	-	-	2.9	3.1	4.6	5.5
Tertiary (Technical or University)	-	-	-	-	1.8	1.9	-	-	1.1	0.8
Adult education	-	-	-	-	-	-	-	-	1.3	2.1
Alpha only	-	-	-	-	-	-	8.5	3.8	-	-
Koranic only	-	-	-	-	-	-	29.0	29.4	-	-
Marital status of head of household (%)										
Single	1.5	2.1	0.4	0.9	1.0	0.7	0.4	1.6	6.8	6.1
Married (< or equal to 2 years)	1.5	1.1	4.7	11.8	11.3	5.8	1.1	9.8	4.6	3.2
Married (> than 2 years)	85.4	83.2	82.5	75.4	72.0	73.3	90.6	72.8	64.1	61.8
Divorced	0.0	0.0	0.5	0.2	7.5	7.7	1.6	0.9	15.2	16.5
Widow/Widower	11.5	13.7	11.9	11.8	8.2	12.5	6.2	4.7	9.3	11.2
Polygamous marriage	0.5	0.5	4.5	2.6	-	-			-	-

^Not collected at Baseline

*Junior Primary (1-4) and Junior Secondary (1-2) in Ghana.

3.2 Impact: Food Security

Critical to realizing the overarching long-term Pathways impact goal *"More secure and resilient livelihoods for poor women farmers"* are improvements in food security. The primary indicators used in this study to measure levels of food security are: 1) the mean household dietary diversity score (HDDS), a proxy for food access, and 2) the mean women's intra-household food access score.

3.2.1 Dietary Diversity and Intra-Household Access

The main food preparer (typically the sampled CARE member) is asked to report on 12 different food groups consumed by any household member over a 24-hour period (the day and night prior to the interview). The responses produce a HDDS between 0 and 12, with the higher score demonstrating access to diverse food groups. After determining whether *any* household member consumed each of the 12 food groups, the main food preparer is asked if all, some, or no female household members over the age of 15 ate the food item. The responses for "all women" or "some women" produce an intra-household access (IHA) score between 0 and 12, with the higher score indicating greater access to diverse food groups.

The mean HDDS across the five Pathways countries ranges between 4.6 to 6.4 food groups at endline, meaning households are, on average, accessing five to six different types of food on a daily basis (Table 3). Households in India and Malawi saw an increase in dietary diversity, particularly among female-headed households in India. Access to food diversity between women living in female- and male-headed households moved from inequitable at baseline to close to equitable status over the period of the project.

Dietary diversity decrease among households in Tanzania can be attributed to several reasons. Southern Tanzania experienced a poor rainy season during the main growing season in 2015 due to the El Nino phenomenon; nearly 60% of Pathways households report major drought as a shock in 2015 (see section 3.3.2). However, beyond the poor 2015 rainy season, there is a high rate of chronic malnutrition in children under five years of age in southern Tanzania, affecting upwards of 54% of children under five in the regions where Pathways operates. In addition to the problems of food insecurity and inadequate rainfall, knowledge of adequate nutrition and childcare practices is low.[10] Since female farmers report increased production of cash crops such as sesame under the project (Table 27), the decline in dietary diversity is likely also related to lack of knowledge about the important of a diverse diet to good health. The Pathways design incorporated a nutrition component, but it had not yet been implemented at the time of the endline survey, and the project did not have a nutrition person on staff.

Table 3. Food and nutrition security

Indicator	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
IM 1.1: Mean household dietary diversity scores										
All households	4.3	4.6	4.1	5.4*	5.3	6.0*	6.4	6.4	7.2	5.9*
Female HHHs	3.9	4.2	3.8	5.4*	5.0	5.4*	5.7	6.2	6.7	6.0*
Male HHHs	4.3	4.8	4.2	5.4*	5.4	6.3*	6.5	6.4	7.5	5.8*
IM 1.2: Mean women's intra-household food access										
All households	4.2	4.0	3.9	5.3*	5.2	5.7*	6.1	5.8*	7.0	5.5*
Female HHHs	3.8	3.9	3.5	5.3*	4.8	5.2	5.6	5.9	6.6	5.7*
Male HHHs	4.3	4.1	4.0	5.3*	5.3	6.0*	6.1	5.8*	7.2	5.3*

*Statistically different at least at the 10% level.

[10] Tanzania Food and Nutrition Centre, *Tanzania Assessment for Scaling up Nutrition*, 2012.

Endline results show that across the countries, food access for women, specifically, has increased since baseline in India and Malawi, meaning females over the age of 15 years consume more food groups than other household members. The IHA pattern in Tanzania follows that of the HDDS; females consume fewer food groups than other household members. During qualitative research in Mali, most respondents asserted that the project had helped them diversify their consumption to include more vegetables, as well as new or less-commonly used foods such as *moringa* leaves or baobab seeds. The past two years have been unfavorable for agricultural production, so it would appear to be a positive impact that dietary diversity and food access continue roughly consistent since baseline. Pathways Ghana has succeeded in educating people about the economic and nutritional value of the targeted crops soya, groundnuts, rice, and maize; this effort included increased production as well as cooking demonstrations.

3.3 Impact: Household Resilience

To understand progress toward the long-term goal of "*More Secure and Resilient Livelihoods*", Pathways tracked information to inform four key areas: the coping strategy index (CSI), adoption of negative coping strategies in past three months, adaptation strategies to reduce the impact of future shocks and household asset holdings (reflected in an asset index). Measuring the resources that individuals and households can draw upon to reduce vulnerability provides insight on household capacity to absorb a range of different risks and adapt to various external drivers of change (e.g., ecological, economic, socio-cultural, etc.).

3.3.1 Coping Strategies

The Coping Strategy Index (CSI) measures behavior change in households when they cannot access adequate or preferred foods. It is a food security and early warning indicator, including longer-term changes in food security status.[11] Respondents are asked, *"What do you do when you don't have enough food, and don't have enough money to buy food?"* Scores range from 0-100 where lower scores indicate greater food security. Annex 4 provides more details on computing the CSI score.

As a preliminary understanding of the CSI score, data are presented on the number of households experiencing food and income shortages in the three months prior to the survey (Table 4). Across the five Pathways countries, there were substantial increases in food and income shortages among surveyed households in India, Malawi, and Tanzania, a significant decrease in Mali, and no change in Ghana, which remained quite high.

[11] Developed by CARE and field tested by WFP and CARE, the CSI has been used for early warning and food security monitoring in African and Asian countries, in addition to several Middle Eastern countries.

Table 4. Coping with food and income shortages

Indicator	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
% of households who did not have enough food or money to buy food in past 3 months										
All households	85.9	85.5	23.2	87.8*	12.6	24.8*	30.1	18.8*	10.6	61.0*
Female HHHs	96.0	87.0	16.9	90.5*	11.6	23.2*	30.6	31.4	13.6	67.0*
Male HHHs	83.5	85.1	25.1	87.2*	12.9	25.6*	30.1	17.7*	9.0	57.3*
IM 1.3: Coping Strategies Index (mean score)										
All households	22.9	24.8	3.2	9.7*	2.1	5.6*	2.4	3.6*	2.6	15.8*
Female HHHs	24.4	25.7	3.1	9.5*	1.7	4.2*	3.6	8.3	4.0	18.5*
Male HHHs	22.5	24.6	3.2	9.8*	2.2	6.3*	2.3	3.2	1.9	14.1*

*Statistically different at least at the 10% level.

Despite the corresponding rise in mean CSI scores with more food shortages in India, Malawi, and Tanzania, they are relatively low considering it is measured on a 100-point scale. This means that while more households experienced stress from food shortages than they did three years ago, they are able to cope with the stress rather effectively by not drastically altering their food consumption patterns. However, this should be viewed in conjunction with data in section 3.4.2 (Table 12) that shows a decline in household savings and in section 3.8.1(Table 20) which shows that women continue taking loans to purchase food, which can be considered a negative coping strategy.

A set of factors helps explain the increase in food insecure households at endline. Prolonged dry spells in the Pathways operational areas in India, Malawi, and Tanzania led to a severe decline of primary crop production (e.g., maize, rice, and other cereals), which plummeted to below-average levels.[12,13] Markets react to lower crop production by increasing the price of staple foods. Coupling higher food prices with less demand for agricultural labor (which means fewer migration and labor opportunities and thus, loss of income), renders poor households even more vulnerable to food shortages. Given these contextual factors, it is remarkable that the CSI scores at endline did not spike much higher.

Conversely, food and income shortages were significantly less problematic for households in Mali, which may be attributable to the timing of the survey which took place at the end of harvest season when food shortages are not as prevalent (Table 4). However, female-headed households still remain just as vulnerable at endline as they were at baseline compared to male-headed households as evidenced by the increase in mean CSI scores.

Table 5 offers detail on the percentage of households using eight common consumption coping behaviors at least once per week for the thirty days preceding the survey. The endline data show that significantly more households in India, Malawi, and Tanzania indicate having used all eight strategies to deal with a lack of access to adequate or preferred foods, with the exception of begging in Malawi. The most common changes revolve around reducing consumption (e.g., relying on less preferred or cheaper foods, reducing the amount of food eaten each day, not eating for an entire

[12] FAO GIEWS Country Briefs, Tanzania, 8 May 2015.
[13] FAO. 2015. GIEWS Country Briefs. Malawi, reference Date 06-August-2015, http://www.fao.org/giews/countrybrief/country.jsp?code=MWI

day), but resorting to borrowing food or money to buy food is also a frequently used strategy. Additionally, eating seed stock increased dramatically among households in India and Tanzania, and nearly one-quarter of households in Tanzania were engaged in begging or scavenging.

Table 5. Coping strategies

Indicator	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
% of HHs to use consumption coping strategy at least once a week										
Borrowed food or borrowed money to buy food	64.6	53.6	22.3	79.3*	10.6	20.6*	11.6	12.7	7.2	39.7*
Relied on less preferred or less expensive foods	66.9	63.6	20.9	41.2*	8.3	21.0*	6.9	10.0*	8.0	34.2*
Reduced the number of meals or the quantity eaten per day	72.3	67.3	17.0	39.3*	8.2	16.6*	12.9	10.5	8.2	46.4*
Skipped eating due to lack of money or food for entire day	45.4	55.5	9.6	18.6*	4.7	11.3*	1.6	4.9*	6.1	41.4*
Consumed taboo food, wild food, famine foods which are normally not eaten	10.0	13.6	5.1	19.0*	2.3	6.4*	0.5	1.8*	4.0	16.2*
Restricted consumption of some family members so that others could eat normally or more	38.5	48.2	5.6	24.6*	3.9	6.9*	5.6	3.8	3.6	13.9*
Eat seed stock held for next season	61.5	49.1	5.1	26.1*	5.6	11.1*	3.8	7.6*	6.1	35.0*
Beg or scavenge	15.4	15.5	0.4	5.6*	3.8	5.5	1.1	4.2*	3.8	24.5*

*Statistically different at least at the 10% level.

3.3.2 Non-consumption Coping Strategies

Households were asked to report on non-consumption strategies used to cope with food and income shortages in the three months prior to the survey, many of which are more likely to contribute to long-term irreversible effects, such as the sale of productive assets, sale of land, or the sale of seed needed for the next season.

The number of households who report using at least one of the "negative" coping strategies presented in Table 6 reflects the pattern seen in consumption coping strategies; significant increases in India, Malawi, and Tanzania, while male-headed households in Mali decreased and Ghana remains unchanged. At endline, use of interest-bearing loans is the most commonly reported strategy across all countries (with the exception of India where it is the second-most common strategy). While it can be argued that borrowing money with interest may not be a negative coping strategy, per se, in the context of using this strategy as a direct result of not having enough food or money to buy food, there is high potential for entering a cycle of debt. However, qualitative research in Ghana indicates that Pathways has enabled a shift away from distress sales of productive assets to procuring loans for support instead; this is supported by a decrease in fewer

houses selling off assets and no significant increase in the sales of livestock, as well as reduction in using savings. This is not the case for India, where it was more common to sell off agricultural production and slaughtering more animals than usual.

Table 6 also illustrates some notable changes in the use of informal and formal social protection mechanisms (factors considered as contributors to increased household resilience) in response to food and income shortages. Significantly more households in India, Malawi, and Mali participated in food- or cash-for-work programs, and relying on household savings increased in Malawi and Tanzania. More households in Malawi and Tanzania were receiving remittances in 2015 than they were in 2012.

Table 6. Adoption of negative coping strategies

Indicator	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
IM 1.4: % households adopting negative coping strategies in past 3 months										
All households	80.8	81.8	18.8	75.9*	8.3	16.9*	22.5	13.1*	5.3	49.6*
Female HHHs	88.0	82.6	13.8	73.8*	6.2	17.4*	21.6	30.6	7.4	52.5*
Male HHHs	79.0	81.6	20.3	76.3*	9.0	16.6*	22.6	11.6*	4.2	47.8*
Percentage of households to utilize specific "negative" coping strategies:										
Pledge or sell labor/crops/livestock in advance	48.6	54.4	2.5	51.7*	4.9	3.3*	2.2	4.2*	0.8	7.6*
Take a loan with interest	45.7	82.2*	12.6	32.3*	3.9	9.1*	13.6	5.8*	0.8	21.9*
Sell seed stock for next season	0.0	22.2*	1.4	7.9*	2.1	4.0*	0.7	3.1*	0.6	16.5*
Slaughter more animals than usual	3.8	3.3	5.8	17.1*	0.3	1.6*	0.5	0.2	0.6	3.2
Lower attendance or drop out from school	20.0	25.6	0.0	1.3*	1.0	2.7*	0.7	0.5	0.0	3.0*
Reduce expenditures (e.g., health care, education)	30.5	35.6	3.8	1.3*	0.2	3.3*	4.9	2.0*	0.4	12.0*
Reduce expenditure on livestock and agricultural inputs	60.0	30.0*	0.9	2.8*	0.3	1.6*	3.3	0.9*	0.2	6.3*
Sell a higher number of livestock than usual	44.8	47.8	0.7	8.5*	0.2	1.6*	7.8	2.5*	0.0	6.3*
Unusual sales (e.g., household assets, firewood, charcoal, etc.)	50.5	31.1*	2.3	3.6	0.7	1.8*	2.7	0.9*	0.8	4.0*
Migrate	3.8	6.7	0.9	9.2*	0.3	0.0*	2.5	0.9*	1.9	0.8*
Send children away to better-off relatives and friends	8.6	4.4	0.4	3.0*	0.5	1.6*	0.2	0.7	0.2	3.6*
Percentage of households to utilize "other" coping strategies:[14]										
Use own savings	78.1	53.3*	7.8	15.0	2.1	4.0*	5.6	3.6	1.1	12.9*
Participate in food or cash for work programs	57.1	7.1*	4.9	15.8*	1.0	12.4*	0.0	1.1*	0.8	1.7
Request local government for assistance	1.9	6.7*	-	-	0.5	0.0*	0.9	1.3	0.0	2.5
Receive remittances (food or cash) from relatives, friends	-	-	-	-	2.6	6.7*	7.1	3.8*	2.7	23.6*

*Statistically different at least at the 10% level.
- Not included in country survey

[14] At baseline, the strategies listed as "other" coping strategies were included in the calculation of "negative" coping strategies, per the M&E plan. With growing evidence related to factors that contribute to resilience, these strategies have been removed from the calculation of the index, as they normally would not contribute to irreversible decline in household well-being.

3.3.3 Shocks and Adaptation

The number of shocks that households experienced in the five years prior to the interview increased in each country with the exception of Mali (Table 7). Climate-related shocks (e.g., flooding, drought) rank among the most commonly experienced shocks in Ghana, India, Malawi, and Tanzania. Correspondingly, epidemics and food prices rose dramatically. More households in Mali and Tanzania reported shocks such as illness or a loss of job at endline compared to baseline.

Table 7. Shocks

Indicator	Ghana[1]		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
Number of shocks experienced per household										
All households	1.5	2.9*	1.4	4.0*	2.7	3.5*	1.6	1.0*	1.4	3.4*
Female HHHs	1.0	2.6*	1.4	3.7*	3.1	3.6*	1.7	1.3	1.6	3.7*
Male HHHs	1.6	3.0*	1.4	4.0*	2.6	3.4*	1.6	1.0*	1.3	3.2*
Percentage of households to experience each shock										
Sudden or dramatic increase in food prices	^	66.4	29.7	72.7*	83.5	79.3*	59.8	18.3*	44.9	48.3
Sudden market price drop of cash crops	^	38.2	-	-	-	-	-	-	-	-
Epidemic disease (crop, livestock, human)	27.9	74.6*	25.9	36.3*	49.7	56.5*	17.0	21.7*	13.5	45.6*
Crop failure	^	81.8	-	-	-	-	-	-	-	-
Major drought	-	-	40.8	85.7*	16.0	53.2*	53.2	12.3*	32.5	59.7*
Hailstorm	-	-	5.6	72.2*	30.6	47.7*	4.0	1.6*	-	-
Waterlogging or flooding	-	-	-	-	6.6	6.5	-	-	-	-
Major drought or flooding	55.4	88.2*	-	-	-	-	-	-	-	-
Loss of a regular job of a HH member	2.3	11.8*	2.7	1.1*	3.8	3.1	2.1	1.3	1.1	1.1*
Chronic illness or severe accident of HH member	37.2	24.6*	20.8	22.0	19.2	21.5	8.9	18.5*	10.5	40.5*
Death of HH income earning members	17.1	21.8	9.6	11.8	8.1	7.4	6.6	13.6*	9.9	24.5*
Divorce or abandonment	0.0	6.4*	0.0	0.9*	10.3	11.8	2.9	3.1	11.2	17.9*
Issues with division of father's property	0.0	0.0	0.7	2.4*	1.6	2.9	4.7	6.9*	1.7	4.2*
Failure or bankruptcy of business	5.4	43.6*	1.3	4.1*	31.5	40.5*	0.2	0.7	2.7	12.4*
Decreased or cut off regular remittances	4.7	17.3*	0.0	1.9*	5.1	5.3	1.2	6.0*	1.5	53.8*
Major conflicts / theft	-	-	0.4	1.1	6.2	12.9*			-	-
Major conflicts	0.0	3.6*	-	-	-	-	1.4	2.5	1.3	7.2*
Theft	^	21.8*	-	-	-	-	-	-	8.4	21.5*

*Statistically different at least at the 10% level.
[1] Out of the total of number shocks included in both surveys (max possible=10)
- Not collected by country survey.
^ Not collected at baseline.

3.3.4 Adaptation Strategies to Reduce the Impact of Future Shocks

Nearly all households who experienced at least one shock are now using at least one adaptation strategy to help buffer the impact of potential future shocks (Table 8). This is a significant gain in all Pathways countries with the exception of Mali, where there was no gain, which corresponds with the decreased number of shocks experienced in the past five years.

Compared to three years ago, households in Ghana, India, Malawi, and Tanzania are appreciably more likely to diversify their livelihood activities, use drought-tolerant or early-maturing crops, and invest in irrigation infrastructure. Purchasing additional livestock is more common among households now in India and Tanzania, although this is an interesting contradiction from the increase in selling a higher number of livestock as a coping mechanism presented in Table 6.

More farmers in India and Malawi are now accessing additional land compared to baseline, and investing in savings has increased in India and Tanzania. Malawi qualitative data partially contradict the quantitative data: Although women in Malawi have land allocated to them to produce groundnuts and soya, the most fertile land remains with men to produce the cash crops of tobacco and maize. Some women, however, have been able to use VSLA shares to rent or buy land individually or as a group of producers. Indian women reported instances where Pathways communities have helped to protect widows from traditional encroachment of their land, including forestland as well as paddy land, by relatives of their husbands.

With the exception of Ghana, the proportion of farmers who do "nothing" to mitigate shocks is reversed from the baseline in 2012 (Table 8). This significant improvement suggests that farmers have strengthened their resilience to withstand shocks and stresses.

Table 8. Adaptation to shock

Indicator	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
IM 1.5: % households using at least one adaptation strategy to reduce the impact of future shocks										
All households	56.4	87.3*	56.5	94.8*	83.0	90.4*	47.1	48.7	34.9	86.8*
Female HHHs	^	33.5*	62.8	94.0*	81.6	93.5*	48.0	29.2	29.1	83.8*
Male HHHs	60.5	90.8*	54.8	95.3*	83.5	89.1	47.0	50.6	38.3	88.7*
Percent of households using adaptation strategy										
Invested in savings	47.5	60.9	44.0	72.7*	67.1	62.6	21.0	20.8	16.0	29.4*
Diversified IGA activities	25.7	50.9*	18.2	38.3*	42.2	52.3*	24.9	20.5	9.4	64.0*
Purchase additional livestock	18.8	25.5	8.3	22.6*	27.4	29.8	18.2	13.8	3.5	20.6*
Used drought tolerant crops	14.9	29.1*	22.1	57.6*	10.4	26.1*	14.9	7.1*	12.3	43.2*
Invested in irrigation	38.6	19.1*	5.8	41.5*	3.4	7.3*	2.1	1.5	0.0	3.1*
Accessed additional land	0.0	12.7	2.3	28.8*	8.9	5.1*	12.5	10.0	12.6	13.6
Did nothing	38.6	52.7	46.8	14.2	45.2	4.8	45.3	29.7*	75.2	31.4*

*Statistically different at least at the 10% level.

^ Sample size less than 15.

3.3.5 Household assets

The mean asset index is a proxy for household wealth and measures the number and weighted value of animal and other productive and household assets. This index is computed by multiplying the number of each type of household asset by the index value for that particular asset type. Asset index values used for construction of the asset indices are presented in Annex 3. A higher asset index value indicates that households have accumulated assets over time. Households are able to accumulate assets if income is greater than the necessary expenditures to meet household subsistence requirements. Assets also provide households with a cushion to adjust to shortfalls in incomes, or sudden increases in necessary expenditures. Thus, households with a higher asset

index are less vulnerable than households with lower asset index values. The asset index is critical to understanding the resilience capacity of Pathways participants at endline. Because land measurement varied across countries, the index was calculated with and without land assets.

The mean asset index – both with and without agricultural land – shows an upward trend at endline in all of the Pathways countries with the exception of Mali where values declined (Table 9). Only households in India and Malawi, however, improved significantly between baseline and endline; the asset values for all households in Malawi doubled over time and increased by about 15% in India.

In Malawi, male-headed households experienced the greatest gains in asset holdings, and while female-headed households also realized significant increases, the gap between female- and male-headed households widened over time. This gap is shrinking slightly, however, when considering non-land assets. The rise in asset holdings in India is accounted for by the growth seen among male-headed households (Table 9). The growth was, in fact, strong enough to overshadow the decline in asset ownership among female-headed households.

Table 9. Mean asset index

Indicator	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
IM 1.6: Mean asset index (with agricultural land)										
All households	250.1	274.6	148.9	171.7*	200.1	399.8*	430.0	326.3*	399.3	418.9
Female HHHs	129.0	198.1	146.6	128.7	163.0	317.2*	235.4	221.6	321.8	334.8
Male HHHs	278.9	294.8	149.6	181.1*	211.8	436.2*	447.5	335.4*	439.8	470.1
Mean asset index (without agricultural land)										
All households	207.4	227.1	115.5	139.5*	94.4	175.6*	333.4	260.2*	114.3	103.9*
Female HHHs	104.4	162.1	113.4	106.9	68.8	139.4*	158.7	167.1	92.6	91.7
Male HHHs	231.9	244.3	116.2	146.7*	102.4	191.5*	349.1	268.3*	125.6	111.4*

*Statistically different at least at the 10% level.

The decrease of household assets among households in Mali, particularly among male-headed households, may be due to a significant decline in ownership of livestock and housing structures, which are weighted more heavily in the asset index calculation (see Annex 3). Households in Tanzania also saw a downward shift in asset holdings when land is removed from the equation, driven largely by the decline among male-headed households. Overall, female-headed households still remain more vulnerable than their male counterparts given their lower index values.

3.4 Impact: Economic Poverty Reduction

To understand progress toward the long-term goal *"to increase poor women farmers' productivity and empowerment in more equitable agriculture systems at scale,"* Pathways tracked information to inform four key economic impact areas: Per capita monthly household income (farm and non-farm); per capita monthly household expenditures; percentage of households with savings; and the percentage of women with savings.

3.4.1 Household Income and Expenditures

Monthly per capita income[15] is presented in Table 10, as is monthly per capita farm income and monthly non-farm income. It is important to acknowledge that results related to income are only indicative; conclusive findings on the relative profitability of different income sources requires a more comprehensive analysis of expenses for each source of income.[16] Income data tend to be highly skewed (i.e., not normally distributed), thus, we also report median monthly per capita income.

Table 10. Per capita monthly household income (Current 2015 USD)

Indicator	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
IM 1.7: Mean per capita monthly income (All sources)										
All households	3.41	9.90	15.47	13.25	11.60	17.38*	9.24	11.05	22.45	22.74
Female HHHs	1.40	3.58	21.29	17.82	12.04	11.25	5.68	19.11*	19.60	25.73
Male HHHs	3.89	11.57	13.68	12.25	11.47	20.08*	9.56	10.34	23.93	20.92
IM 1.7: Mean per capita monthly income (Farm sources)										
All households	1.06	1.07*	0.80	2.12*	3.36	6.04*	2.75	3.95*	6.49	7.85
Female HHHs	0.22	0.49*	0.56	1.90*	2.00	4.39*	1.36	5.36*	5.72	7.48
Male HHHs	1.26	1.22*	0.87	2.17*	3.79	6.77*	2.87	3.82*	6.89	8.07
IM 1.7: Mean per capita monthly income (Non-farm sources)										
All households	2.36	8.83*	14.67	11.13	8.24	11.33*	6.49	7.10	15.96	14.89
Female HHHs	1.18	3.10*	20.72	15.92	10.04	6.86*	4.31	13.75*	13.88	18.25
Male HHHs	2.65	10.35*	12.82	10.08	7.68	13.31*	6.69	6.52	17.04	12.85
Median monthly per capita income (All sources)										
All households	0.99	5.59	7.30	7.49	5.79	10.23	3.51	6.00	4.76	9.05
Female HHHs	0.41	1.12	6.43	8.67	4.71	7.31	4.14	8.05	4.29	8.45
Male HHHs	2.07	5.53	7.46	7.03	6.03	11.77	3.49	5.80	5.55	9.91
Median monthly per capita income (Farm sources)										
All households	0.00	1.22	0.00	1.25	1.01	2.91	0.66	1.62	1.31	3.64
Female HHHs	0.00	0.16	0.00	1.10	0.93	2.11	0.29	2.00	1.16	3.36
Male HHHs	0.22	0.76	0.00	1.25	1.05	3.63	0.70	1.62	1.50	3.93
Median monthly per capita income (Non-farm sources)										
All households	0.00	3.08	6.65	5.09	3.25	5.72	1.18	2.98	0.95	3.54
Female HHHs	0.41	0.00	6.01	6.95	3.35	4.43	2.92	4.40	0.98	3.83
Male HHHs	1.95	4.12	6.77	4.73	3.24	6.32	1.12	2.81	0.95	3.14

*Statistically different at least at the 10% level.

The only reported growth in Pathways beneficiaries' per capita monthly income was in Malawi, which increased 50% to $17.38 (Table 10). In contrast, per capita expenditures increased for surveyed beneficiaries across all countries where Pathways was implemented (Table 11). Reported growth in per capita expenditures over the life of program ranges from 132% in Tanzania to 12% in India. Per capita expenditures is often a more reliable indicator than per capita income;[17] however with contradictory evidence supporting growth or decline in income, it is instructive to triangulate

[15] Average amount of household income from all income sources/earners earned per month, divided by the total number of individuals living in the household.

[16] This type of analysis is beyond the scope of the final evaluation of the Pathways project.

[17] Respondents are often reluctant to disclose income and tend to underreport it; expenditures can be easier to recall, as they tend to occur more frequently; and in the case of this study, expenditure categories are more narrowly defined which may provide for more reliable recall.

these measures with other indicators of household wellbeing, such as household food security, assets, shock exposure, and response to shock. Regardless of any reported changes in income or expenditures, median levels, which are more reflective of the average beneficiary, remain universally low at program termination. Median monthly per capita expenditures range from $14 in Mali to $28 in Tanzania – or, $0.47 to $0.92 per person per day, well below the World Bank international poverty line of $1.90.

Table 11. Per capita monthly household expenditures (Current 2015 USD)

Indicator	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
IM 1.8: Mean per capita monthly expenditures										
All households	23.08	28.35	16.91	18.94*	19.55	27.02*	13.11	19.59*	16.35	38.01*
Female HHHs	8.75	16.15	20.16	23.96	19.36	22.97*	12.84	23.44*	17.48	38.97*
Male HHHs	26.53	31.58	15.91	17.84*	19.60	28.83*	13.13	19.26*	15.77	37.44*
Median per capita monthly expenditures										
All households	10.99	18.93	12.97	14.80	11.84	21.44	9.13	14.15	10.10	27.88
Female HHHs	6.13	9.59	13.32	16.85	12.37	17.68	10.39	15.48	10.00	28.26
Male HHHs	12.34	21.81	12.93	14.65	11.78	23.59	8.97	14.10	10.14	27.31

*Statistically different at least at the 10% level.

In Malawi, reported per capita expenditure grew strongly along with reported income (Table 11). It should be noted that Malawi over the life of the program experienced abnormally high inflation with the Malawian Kwacha essentially collapsing vis-à-vis the USD and other local trading partner's currencies.[18] If the rapidly changing headline inflation rate used to convert income numbers from nominal to real terms underestimates the true inflation experienced by Pathways program participants, the income gains reported here could be optimistic. With that in mind, it still appears likely that program participants experienced real income gains, given corresponding increases in reported assets[19], food security, per-capita expense, and relatively low rates of resorting to negative coping strategies in the face of multiple shocks. Importantly, focus group discussion indicate that women are gaining equal access to income-generating opportunities, with some suggesting that women are more likely to earn income compared to men – although, the market for small businesses is very competitive and it is hard to generate profits.

Program beneficiaries in Tanzania reported monthly per capita expenditures of $38 at endline, which translates to roughly $1.25 per capita per day and is the highest reported average expenditure value across all countries measured (Table 11). Alternatively, there was no evidence of growth in per capita income. There is not much evidence supporting strong growth in beneficiary income. Food security as measured by dietary diversity fell rather sharply, household assets did not exhibit growth, and exposure to shock and reliance on negative coping strategies both increased (Sections 3.2, 3.3; Table 6).

In India, program beneficiaries surveyed provided no evidence of change in income (Table 10), however average monthly expenditures grew slightly (12%, Table 11) to $19 per person. Unique to

[18] Between May of 2012, when Malawi devalued its currency un-pegging the kwacha from the USD, and the end of 2015, the Kwacha lost roughly 74% of its value against the USD.
[19] Granted, substitution of assets for currency, or "hoarding" of physical assets, is common in inflationary environments.

India beneficiaries, reported expenditures appear to be higher for female-headed households as compared to male-headed households, although tests were not performed to confirm statistical significance of this result. There is some evidence that income may have grown for program participants in India – food security increased sharply and average stocks of household's assets are higher. These results are encouraging in the face of a drastic increase in household exposure to shocks, including drought, food price increases, and hailstorm (Section 3.2 and 3.3).

Malian beneficiaries, much like their Tanzanian counterparts, exhibited no evidence of growth in income, however did report strong gains in average per capita expenditures (Table 10 and Table 11). Average monthly per capita expenditures increased 49% to $19. Again, like Tanzania, there is not much evidence supporting the observed increase in expenditures. Dietary diversity did not appear to improve and average household assets exhibited a severe decline (Section 3.2 and 3.3).

Qualitative data support the quantitative data expenditures growth however. More Malian women are practicing profitable agricultural activities, from growing onions, sesame, or peanuts, to community gardening. Indian communities report enhanced income diversity, including increased income earning opportunities through wage labor as well as crop production, largely, though not wholly, attributed to Pathways. These newfound income-earning opportunities have allowed women greater share of decision-making on expenditures within their households. Malawi and Tanzania focus group participants confirmed that Pathways has helped generate more income earning options for women, but their lack of mobility limit their options compared to men, who also continue to completely control cash crop marketing.

3.4.2 Savings

Household economic wellbeing and resilience to shocks may depend, in part, on a households' capacity to save and use savings to smooth consumption. Results on household savings (Table 12) demonstrate a vast differential across countries at endline. Qualitative findings offer an explanation for the decline in household and women's savings in formal or informal institutions reported throughout the five countries. The results for Tanzania (savings rates of 26% of households and 24% of women) and Mali (where only five percent of households and women reportedly save) are surprising given that the baseline surveys specifically targeted women who are VSLA members. However, qualitative findings offer plausible explanations. In Tanzania, there was a wide consensus among FGD participants that while VSLAs provide savings opportunities to women that may be less accessible than from other sources, low income-generating capacity limits women's ability to save. In Mali, qualitative data suggest that respondents may have recently exhausted their savings for seasonal investment. Additionally, the increased insecurity and conflict present near Malian project areas may have contributed to reduced savings. The majority of surveyed households in Malawi report savings in a formal or informal institution. Economic and environmental shocks have also impacted Pathways household capacity to save. It is also possible that survey respondents misunderstood the question and did not deem their savings in the VSLAs and SHGs as falling within a formal or informal institution.

Table 12. Savings

Indicator	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
IM 1.9: % households with savings										
All households	85.9	72.7*	79.1	56.8*	97.0	94.2*	34.2	5.4*	28.9	25.7
Female HHHs	^	56.5	77.7	48.8*	97.3	93.5	27.0	8.6*	22.8	24.6
Male HHHs	86.4	77.0	79.5	58.6*	97.0	94.6*	34.9	5.1*	32.1	26.4
IM 1.10: % women with savings										
All households	77.3	63.6*	78.8	53.2*	96.7	93.3*	32.6	4.7*	27.3	24.1
Female HHHs	^	52.2	77.7	46.4*	97.3	93.5	27.0	8.6*	22.8	24.6
Male HHHs	75.9	66.7	79.2	54.7*	96.6	93.3*	33.1	4.4*	29.7	23.8

*Statistically different at least at the 10% level.
^ Sample size less than 15

3.5 Impact: Women's Empowerment

3.5.1 Women's Empowerment Index

TANGO constructed a Women's Empowerment Index (WEI) for CARE that was modelled after the Women's Empowerment in Agriculture Index (WEAI).[20] Similar to the WEAI, the WEI includes the Five Domains of Empowerment (5DE) index and Gender Parity.

The 5DE reflects the percentage of women who are considered empowered, based on their empowerment score. This score is calculated from 13 weighted indicators within five domains: production, resources, income, leadership, and autonomy (Annex 6 presents the domains, their total weight within the index, and the weight of each indicator). CARE's WEI includes 9 of the 10 indicators that comprise the WEAI, [21] as well as indicators for political participation, mobility, self-confidence, and attitudes on gender, for a total of 13 indicators distributed among the five domains. A woman who achieves an empowerment score of .80 or greater is considered to be empowered. To allow for country-specific improvement, baseline values were adjusted to country-specific thresholds (see Annex 4 for details).

The 5DE index is calculated using the following formula.

$$5DE = H_e + H_d A_e = (1 - H_d A)$$

Where:

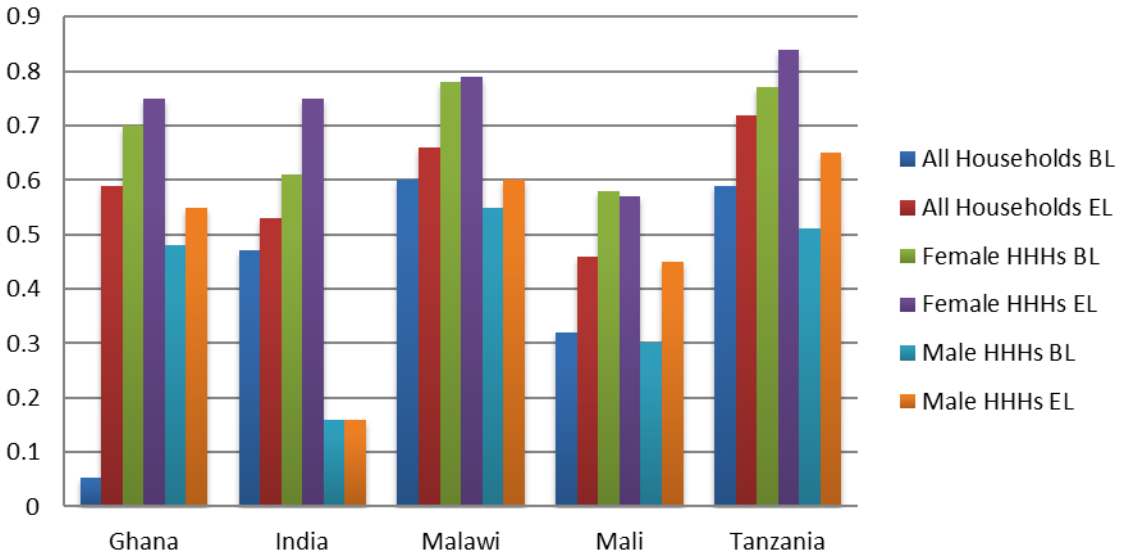
H_e is the percentage of empowered women
H_d is the percentage of disempowered women
A_e is the average absolute empowerment score among the disempowered

Women participating in the Pathways project have become more empowered since the baseline, based both on their 5DE score (level of empowerment) and the percentage of women achieving empowerment (.80 score or better) (Figure 9). (Table 36 in Annex 5 presents outcomes baseline-to-endline by indicators by domain by country.) Overall, scores in the five domains of empowerment for women rose significantly between baseline and endline in Ghana, Malawi, Mali, and Tanzania, reflecting progress towards the threshold of .80, CARE's criteria for achieving

[20] International Food Policy Research Institute. 2012. *Women's Empowerment in Agriculture Index*. Feed the Future.
[21] The WEI does not include the indicator for workload; however the qualitative team explored this topic.

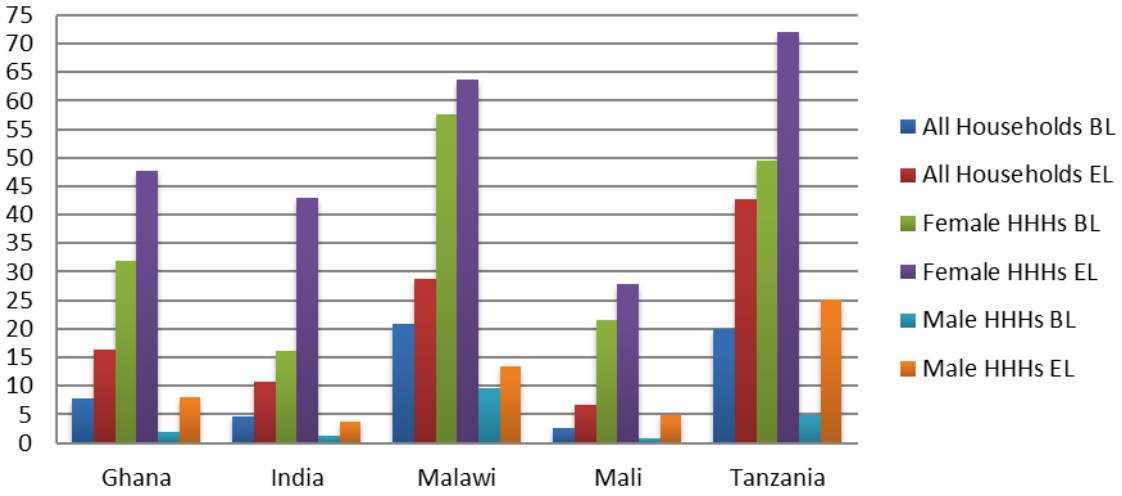
empowerment. While women in female-headed households score highest in empowerment, the overall gain is largely attributable to the increase seen among women living in male-headed households. Since women in female-headed households are more likely to already be considered empowered given they are often, although not necessarily, the primary decision-maker, the improvement for women in male-headed households ought to be regarded as a success. Interestingly, the pattern was reversed in India, where empowerment scores remain unchanged for women in male-headed households, but grew from .61 to .75 for those in female-headed households.

Figure 9. Women's Empowerment Index—Mean Score For All Women in Sample at Baseline and Endline



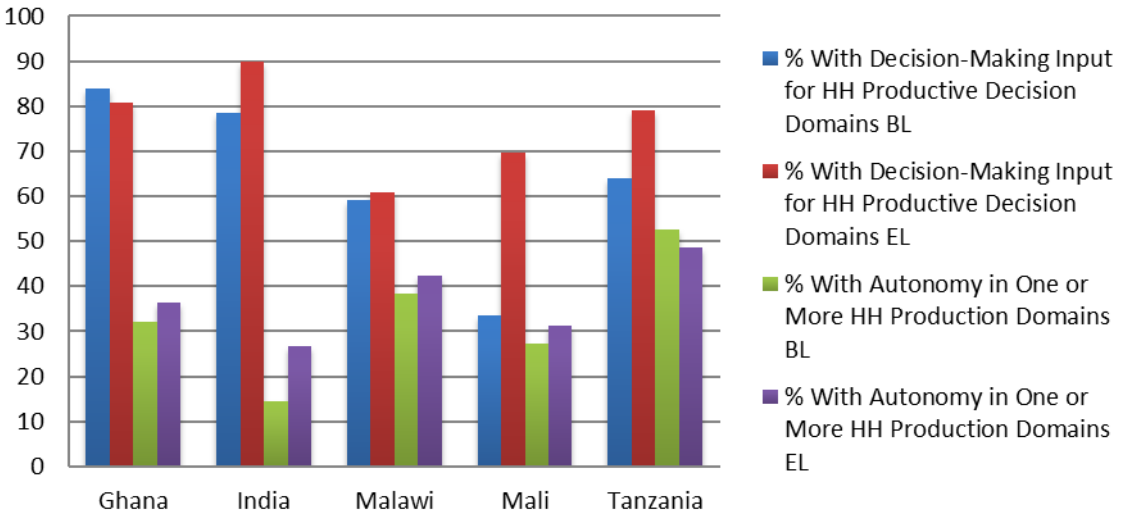
In addition to higher levels of empowerment, more women surpassed the threshold of .80. Since baseline, the percentage of women achieving empowerment doubled in Ghana, India, Mali, and Tanzania, and increased from 21% to 29% for women in Malawi (Figure 10). Of particular interest is the nearly five-fold increase in the number of women residing in male-headed households in Ghana, Mali, and Tanzania who crossed the empowerment threshold.

Figure 10. Women's Empowerment Index—Percentage of Women Achieving Empowerment (.80 or greater)



Achieving a score of .80 provides only a partial picture of the differences in empowerment over time. Figure 11 disaggregates women's achievements in the 5DE and provides a more detailed picture of areas where women have achieved or come close to achieving empowerment thresholds (refer to Annex 5 for individual country thresholds).

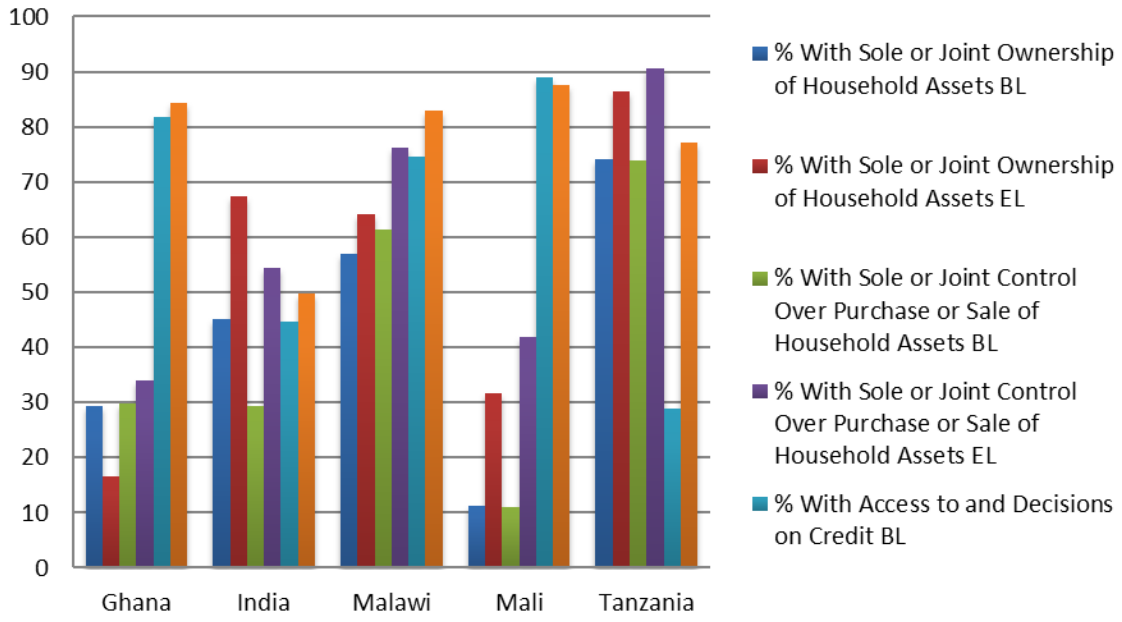
Figure 11. Domains of Empowerment—Production



Within the domain of Production, significantly more women in India, Mali, and Tanzania indicate having more decision-making input for household productive decisions, and those in India and Tanzania actually surpassed (or are on) the .80 threshold. While more women in India and Mali are also more autonomous in household production domains, the scores remain well below threshold levels (26.7% for India, 31.4% for Mali).

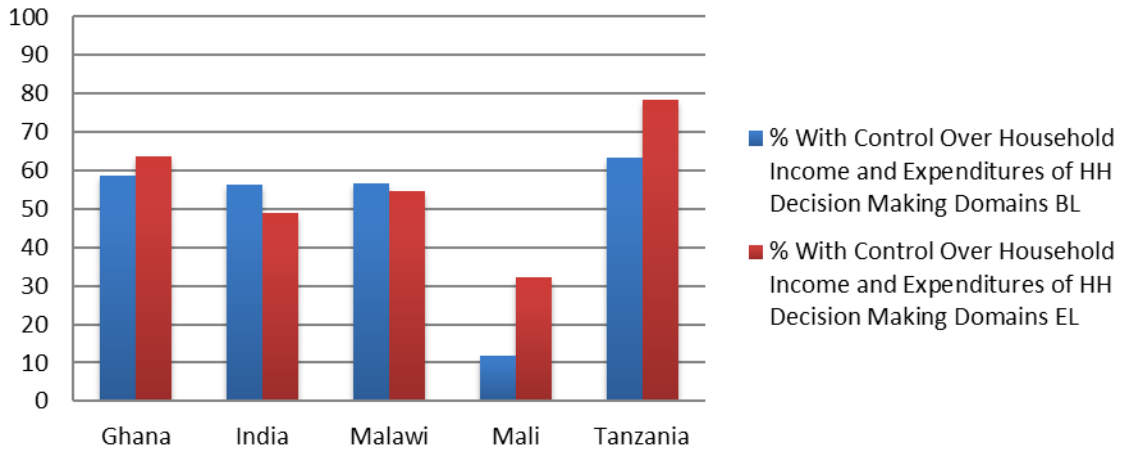
At endline, significantly more women in India, Malawi, Mali, and Tanzania are able to claim sole or joint ownership of household assets, yet only those in Tanzania achieved empowerment on this indicator (Figure 12). Empowerment actually decreased by half in Ghana. Women in India, Malawi, Mali, and Tanzania have even more say regarding the purchase or sale of household assets, and women in Malawi and Tanzania crossed the .80 threshold. Finally, accessing and making decisions on credit increased for women in India, Malawi, and Tanzania. With the exception of India, women were already empowered (Ghana=84.3%, Mali=87.5%) or approached achieving this indicator (Malawi=83.0%, Tanzania=77.2%).

Figure 12. Domains of Empowerment—Resources



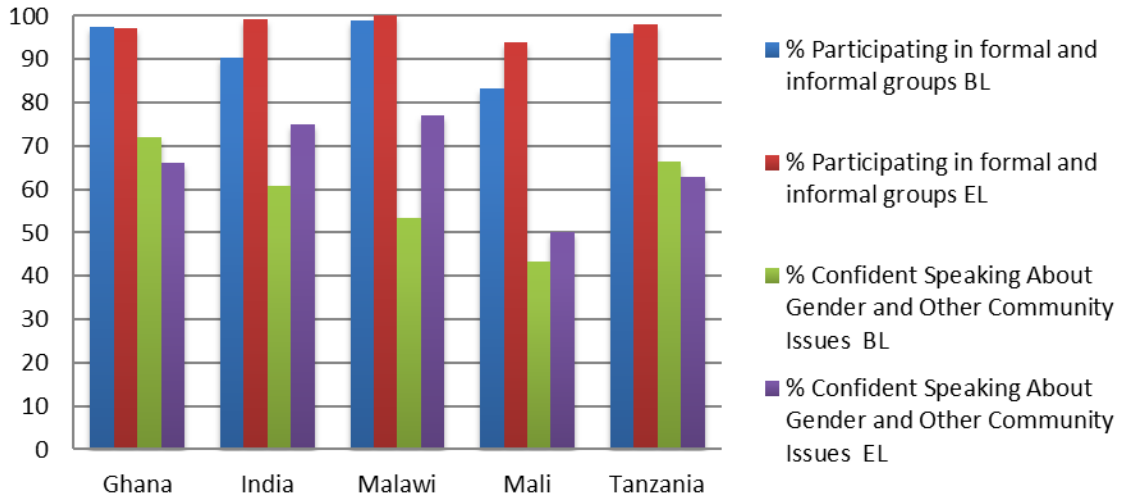
Economically, more women in Mali and Tanzania realized an increased in their control over household income and expenditures, yet only those in Tanzania came close to achievement (78.4%) (Figure 13). Although there was a decrease on this indicator among women in India, the vast majority of women in focus groups indicate at a minimum they can discuss and provide input into such decision-making, if not share some in it.

Figure 13. Domains of Empowerment—Income



Socially, significantly more women are politically involved (Figure 14). While women in Mali and India have yet to achieve empowerment in political activity, they significantly closed the gap since baseline. Nearly all of the women are actively participating in a formal or informal community group, as would be expected given that membership in a VSLA/SHG is a requirement for participating in Pathways.

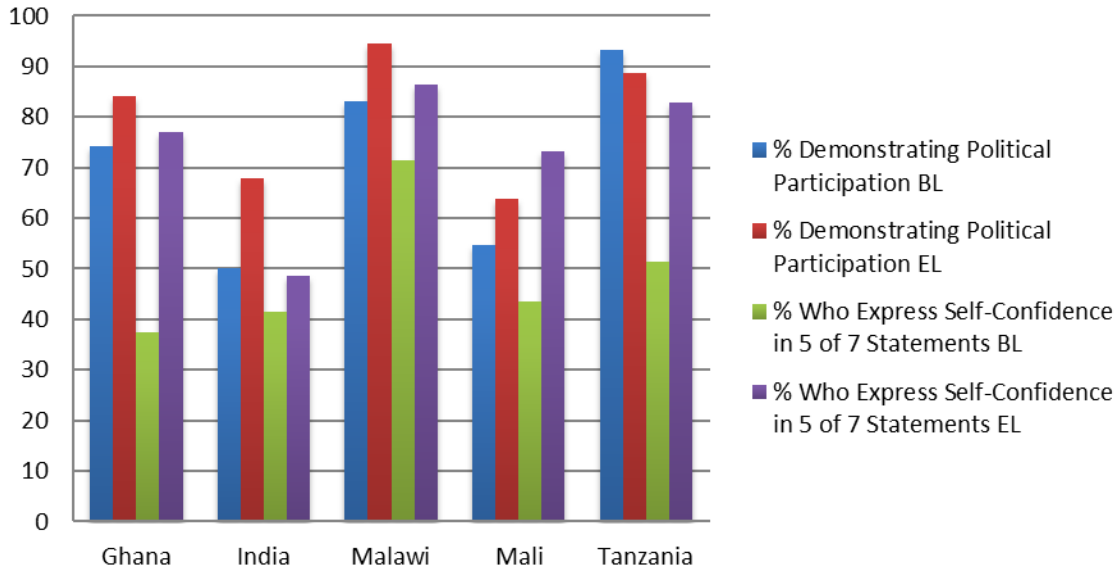
Figure 14. Domains of Empowerment—Leadership and Community: Women Participating in Formal and Informal Groups and Percentage of Women Confident Speaking About Gender and Other Issues



Women in India, Malawi, and Mali realized greater confidence in speaking publicly about gender and other community issues (Figure 15). While more than half of all women are confident on this

indicator, women in India and Malawi are closest to achieving the empowerment threshold. Finally, self-confidence improved across the board, and with the exception of India, most achieved empowerment.

Figure 15. Domains of Empowerment—Leadership and Community—Percentage of Women Demonstrating Political Participation and Percentage of Women who Express Self-Confidence

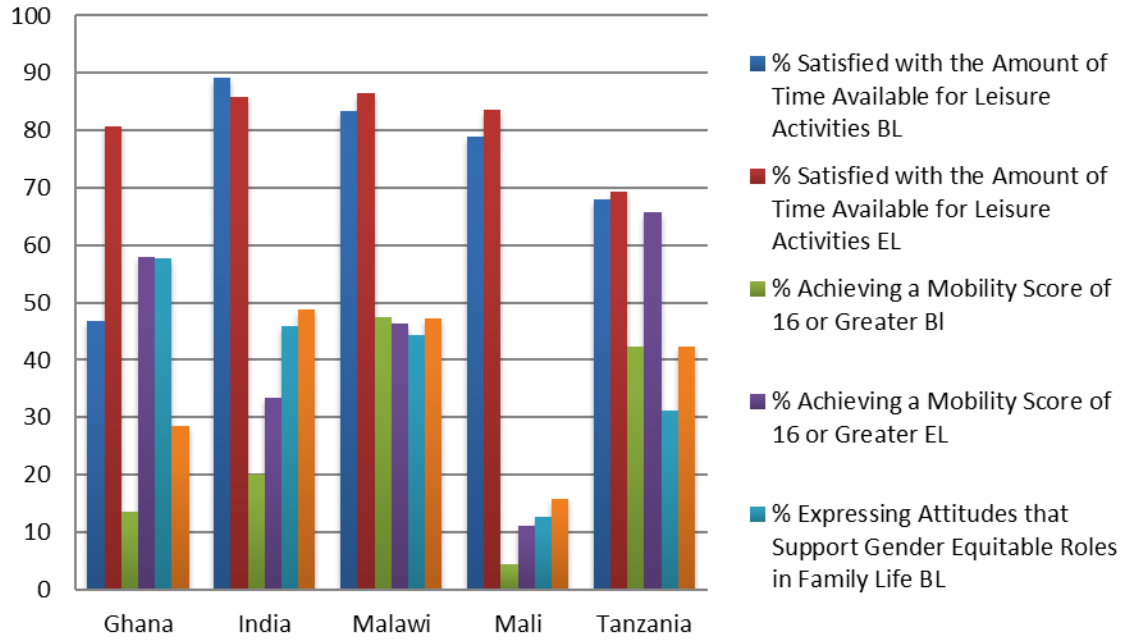


The majority of women are satisfied with the amount of leisure time they have, and this has increased significantly for women in Ghana and Mali (Figure 16). Mobility increased dramatically for women in all Pathways countries except in Malawi where scores stayed relatively unchanged. Finally, the number of women expressing attitudes that support gender equitable roles in family life has increased only among those in Tanzania; everywhere else, they have stayed the same or decreased as in the case with Ghana, even though female FGD participants report improved household relations. Despite the marked improvements, there is still quite a bit of room to support women towards achieving empowerment in mobility and attitudes that support gender equity.

Although a little less than half of the women in Pathways India project meet the threshold for self-confidence or have access to and decisions on credit, women in FGDs describe themselves as a strong influence on the use of credit they secure from SHGs, and they use it to purchase food, clothing, education, and health care for their families.

The qualitative data from Ghana indicate that gains in access to financial capital, increased agricultural production, and increased contributions to household food and income have translated to changes in gender relations and improvements in empowerment. FGD participants report improved household relations and more discussion about household issues. Female FGD participants report that their husbands no longer beat them. They also note that there are fewer quarrels about money, and that because they are busy all day, they no longer stay at home 'where quarrels arise', which corresponds to an increase in their mobility.

Figure 16. Domains of Empowerment—Autonomy/Family Life: Leisure time and Attitudes that Support Gender Equitable Roles



Qualitative data from several sources in Tanzania support the positive changes observed in women's empowerment. Female focus groups attribute increased knowledge about saving money through the VSLA, and Farmer Field Schools for helping them better understand new cultivation methods. As such, more women are actively running their own businesses and participating in more and different social activities. Agricultural extension agents have witnessed women becoming more confident speaking up at meetings, and a trend of making more decisions at the household level. Gender dialogues were cited as an effective intervention to ease the workload for women, although this is still a barrier to changing social norms, especially among men. In addition to observing more discussions between husbands and wives about how to allocate money earned from production, Pathways Tanzania project staff also state more women are expressing their opinions, participating in market place, filling leadership positions and increasingly able to travel without having to get permission from their husbands.

In addition to great strides women in the Pathways program have made since 2012, there are areas that have room for improvement. For instance, despite gains made in India and Mali, less than half of all the women in each of the five countries have autonomy in production. Less than half of the women in India and Mali have control over household income and expenditures. Mobility is still a particularly large hurdle for women in India and Mali. Finally, less than half of the women express attitudes that support gender-equitable roles across the five country programs.

Gender parity

The WEI also examines women's and men's parity in each empowerment domain. Gender parity measurements are based only on households in which a man and a woman answered questionnaire modules respective to their sex. Thus, no female-only households are included, and no households where a man was unavailable to respond to the male portion of the questionnaire are included.

Empowerment scores are constructed as defined above for all men and all women. Differences between females at baseline and endline, and between males at baseline and endline, are provided in the individual country endline reports.

Table 13 and Table 14 present results for gender parity from households where both males and females were present. Statistical significance is reported ***only*** for comparisons of gender between baseline and endline. While women are not at parity with men in most domains at endline, a larger share of female than male respondents achieved empowerment in two areas, accessing and making decisions about credit, and participating in formal or informal groups in their communities. This is not surprising given the Pathways project design involves women in VLSAs/SHGs with savings and credit mechanisms.

The largest gaps between men's and women's achievement of empowerment in Malawi remain in the domains of production, resources, and income, although the gaps are closing. The greatest change occurred in the control over the purchase or sale of assets—the 37 percentage point spread between men and women declined to 19%; likewise, the 44 percentage point spread between men and women for control of productive decisions declined to 33%.

The greatest change has occurred in the control over the purchase or sale of assets; the 35 percentage point spread between men and women has been reduced to 19%; likewise, the 44 percentage point spread between men and women for control of productive decisions has been reduced by 11 points, to 33. In the area of access to credit, women have the same perceived access as men (Table 13).

Males at endline report much greater access to and decisions about credit than they did at baseline (76% versus 57%). Like women, men are also more likely to be empowered in the Leadership and Community domain than they were at baseline, achieving gains for all four indicators that contribute to this domain (Table 14). Men are less likely than women to have access to credit or to achieve the indicator for group participation; however the gaps are relatively small.

Qualitative data confirm that women are beginning to participate in traditional male social and economic domains. Indian women are more actively participating in collectives associated with forest rights, crop cultivation, and water groups, occasionally in leadership positions. Women are increasingly accessing forests, markets, and government offices. Pathways activities have helped instill newfound women's confidence through training, animators, Reflect Circles and CRPs.

Table 13. Achievement for males and females in Production, Resources, and Income at baseline and endline (*italicized* values indicate significant difference between males and females)

	Ghana				India				Malawi				Mali				Tanzania			
	BL		EL		BL		EL		BL		EL		BL		EL		BL		EL	
Indicator	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M
Production																				
With decision-making input into HH productive decision domains	*82.1*	*96.5*	*78.3*	*97.6*	*78.9*	*96.6*	88.7	91.1	*39.9*	*84.1*	*49.8*	*82.9*	*30.8*	*98.5*	*74.8*	*93.2*	*43.0*	*78.8*	*68.9*	*86.1*
With autonomy in HH production domains	*17.9*	*75.3*	*26.5*	*63.9*	*6.4*	*36.6*	*17.0*	*22.6*	*20.3*	*59.4*	*26.6*	*51.8*	*24.9*	*96.1*	*30.6*	*69.1*	*28.0*	*62.6*	*18.5*	*31.1*
Resources																				
With sole or joint ownership of household assets[1]	*29.4*	*81.0*	*12.0*	*81.9*	*39.8*	*91.8*	*64.3*	*82.0*	*54.2*	*79.4*	*61.3*	*79.4*	*6.9*	*84.2*	*33.5*	*81.4*	*64.4*	*86.1*	*79.9*	*87.0*
With sole or joint control over purchase or sale of household assets[1]	*29.9*	*82.7*	*31.3*	*81.9*	*24.3*	*57.0*	*52.6*	*63.1*	*54.2*	*91.2*	*72.9*	*91.5*	*6.9*	*86.3*	*42.5*	*83.8*	*66.3*	*90.1*	*84.9*	*93.7*
With access to and decisions on credit	61.8	64.7	*80.0*	*54.6*	*41.1*	*53.7*	*46.8*	*29.5*	*74.0*	*57.1*	80.8	76.7	*89.0*	*91.6*	*85.0*	*70.6*	26.2	15.2	76.0	52.9
Income																				
With control over household income and expenditures in HH decision-making domains[2]	*51.2*	*90.6*	*61.5*	*95.2*	*54.1*	*83.6*	*42.6*	*67.9*	*44.0*	*84.7*	*39.7*	*78.4*	7.7	82.4	*33.6*	*69.8*	*50.5*	*80.2*	*65.3*	*91.6*

Table 14. Achievement for males and females in Leadership and Community and Autonomy at baseline and endline (*italicized* values indicate significant difference between males and females)

	Ghana				India				Malawi				Mali				Tanzania			
	BL		EL		BL		EL		BL		EL		BL		EL		BL		EL	
Indicator	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M
Leadership & Community																				
Participating in formal and informal groups	*96.5*	*74.4*	*97.6*	*81.9*	*89.2*	*61.1*	*99.4*	*78.2*	*98.7*	*82.8*	*100.0*	*93.0*	*86.6*	*52.1*	*95.8*	*80.4*	*99.0*	*83.5*	*97.9*	*88.1*
Confident speaking about gender and other community issues at the local level	75.8	75.8	*69.9*	*95.2*	*62.5*	*23.8*	*77.5*	*9.5*	*58.0*	*74.5*	*79.9*	*87.4*	*41.1*	*49.4*	*53.9*	*73.1*	*69.3*	*94.1*	*61.5*	*92.5*
Demonstrating political participation	73.0	73.0	*81.6*	*96.2*	*46.7*	*42.3*	*65.5*	*86.7*	86.0	91.1	*94.5*	*98.5*	57.1	57.9	*67.1*	*89.2*	90.1	94.1	90.8	92.9
Who express self-confidence in 5 of 7 statements	*44.8*	*66.7*	80.7	86.8	*40.9*	*56.7*	*51.9*	*69.1*	67.5	73.9	90.0	93.0	*40.8*	*73.8*	*74.9*	*91.6*	*53.5*	*79.2*	*82.4*	*93.3*
Autonomy																				
Satisfied with the amount of time available for leisure activities	60.2	56.8	79.5	79.5	89.7	91.5	86.1	85.8	82.2	82.8	84.9	86.4	77.4	81.2	82.6	85.0	72.3	77.2	68.6	72.4
Expressing attitudes that support gender equitable roles in family life (Scoring 4 of 4)	*57.8*	*28.1*	*25.3*	*33.7*	*43.5*	*33.5*	*49.3*	*39.2*	45.2	48.1	43.7	45.2	*11.0*	*6.3*	*13.2*	*7.8*	*16.8*	*24.8*	38.5	34.7
Achieving a mobility score of 16 or greater	13.6	-	*53.1*	*62.7*	8.9	-	22.8	20.5	37.0	-	*46.2*	*52.8*	2.4	-	6.0	29.3	21.8	-	*49.8*	*69.5*

3.6 Project Participant Perceptions of Impact

To understand saturation of project activities and participant's perceived impact on the household, the endline survey asks male and female respondents to list household participation by household member for each type of activity. Follow-up questions explore perceived level of wellbeing compared to four years ago.

As expected, virtually all women surveyed are members of a Pathways VSLA or SHG; in one-third of the households in Ghana and Mali, the woman's spouse is also a savings group member (Table 15). Participation in kitchen and homestead gardening vegetable production group activities are the next most common activity across countries in which Pathways members participated – with half to two-thirds of women surveyed in Malawi, Ghana, and Mali engaged in this form of Pathways programming. Gender dialogue is also a popular activity in Ghana, Mali, and Malawi with participation rates for woman surveyed in these countries ranging from roughly 40-60%.

Table 15. Women reporting HH participation in Pathways activities[22]

Activity	Ghana		India		Malawi		Mali	
	Self	Spouse	Self	Spouse	Self	Spouse	Self	Spouse
Self-help group/VSLA	98.2	30.0	94.1	2.7	96.7	19.7	80.9	30.9
Resource-based group	-	-	9.0	7.5	61.9	27.7	29.4	24.4
Marketing committee	28.2	8.2	16.5	6.7	31.9	19.7	30.9	21.7
Reflection circle	-	-	15.1	7.2	-	-	-	-
Male champion	-	-	9.7	10.1	-	-	15.9	35.2
Gender dialogue	38.2	10.0	15.7	8.1	57.2	23.1	53.9	21.8
Kitchen/Cooking/Garden	62.7	8.2	26.8	10.0	54.1	7.1	69.9	14.3
Agricultural kiosks	-	-	22.5	14.7	-	-	-	-
Seed multiplication	40.9	9.1	-	-	45.5	10.0	-	-
Literacy training	-	-	-	-	17.7	3.5	-	-
Talking book	81.8	20.0	-	-	-	-	-	-
Field demonstrations	90.0	23.6	-	-	-	-	-	-

Qualitative discussions confirmed women's participation in collectives – the VSLAs or SHPs – to be one of the most crucially important factors explaining the impact of enhanced involvement in other project activities and ultimately the impact of Pathways on their lives and wellbeing. Indian communities, for example, discussed the importance of SHGs in opening up women's access to credit, their involvement in income generating opportunities and cooperative activities, and their growth in leadership and confidence. VSLA membership in Mali has helped to build women's capacity and confidence, and has gained recognition as the most important building block to promote women's empowerment in social as well as economic spheres. Virtually all of the Tanzanian FGD participants feel that Pathways activities fit the needs of the communities and are appropriate to the local context. Agricultural production has increased as a result of the training and people are earning more income, some people are starting small businesses in tie dye, food vending, and soap-making, women are holding leadership positions and earning respect, and

[22] In other countries a section was added to the quantitative endline survey that requested male and female respondents to list who within the household was participating in each type of activity. However, this addition was agreed upon after CARE Tanzania was already engaged in data collection and the quantitative data section was not added.

people are more aware of their rights. Malawi men and community leaders cite VSLA participation as the most beneficial activity of all Pathways initiatives, specifically their increased ability to purchase livestock and farming inputs, start small businesses, pay school fees, and purchase household needs. VSLA participants greatly appreciate the ability to borrow and avoid usurious moneylenders; few other financial service options are available with attractive lending terms. Participants also appreciate access to nutritional and "family life" knowledge shared in groups and the enhanced social ties that result from being in a group together.

Belonging to a VSLA has clearly contributed to feelings of empowerment among the members; VSLA group membership has opened up social and economic worlds to Pathways women not experienced previously.

When asked about the impact of participating in Pathways activities over four years, 97% of those surveyed in Ghana reported that their households are better off as a result of their involvement in Pathways (see country report). In Malawi and Mali a majority of female program participants report being better off compared to four years ago - 91% and 72% of females, respectively (see country reports).

Given that all women surveyed are members of Pathways VSLAs, not surprisingly, two activities promoted by the women's collectives – namely, household savings and access to credit – were among the most cited as providing benefits to program participants across all countries (Table 16). Programming supporting growth in agricultural income was also one of the most mentioned beneficial activities provided as part of Pathways, with roughly one-third to two-thirds of women surveyed reporting benefits.

Table 16. Percent of women reporting benefits of Pathways activities

Activity	Ghana	India	Malawi	Mali
Agricultural income	53.6	65.3	60.5	34.5
Crop yields	30.9	61.0	38.5	34.5
Household savings	69.1	51.3	85.3	32.4
Non-farm income	10.9	40.6	34.0	23.0
Access to agricultural services/inputs	20.9	31.8	44.4	28.0
Equitable decision-making M/F	9.1	31.1	22.0	25.0
Food security	39.1	30.9	56.0	31.8
Access to credit	78.2	30.9	84.9	58.8
Equitable distribution of chores M/F	30.0	26.1	23.2	12.5
Communication M/F	21.8	24.5	22.7	41.6
Reduced exposure to risk	13.6	20.7	14.7	7.4
Confidence to speak up in public	30.9	8.6	22.7	18.2
Knowledge of nutrition	0.0	2.4	44.9	11.5
Literacy	-	-	19.9	-

The questions were implemented in the survey only after Tanzania, but data from ranking exercises indicate that VSLA group formation and participation, and improved agricultural practices received the highest ranking on effectiveness, as did sensitization on gender issues and household decision-making. Training on women's rights to land, and sensitization to GBV, ranked among the least

effective activities, mainly because participants said they received limited, or no, training in these areas.

3.7 Change Lever 1: Capacity

The anticipated outcomes for Pathways Change Lever 1 are improved knowledge, skills, relationships, self-confidence, and conviction of poor women farmers. To determine if change has taken place since baseline in any of these areas, the surveys explore women's participation and representation in formal and informal groups; women's leadership within these groups; women's comfort level with speaking up in public about important issues; and women's self-confidence.

3.7.1 Women's Participation in Formal and Informal Groups

To understand change to women's participation and leadership in formal and informal groups, the surveys first determine whether ten different types of groups exist in the community. If a group exists, women are asked about their active participation, reasons for not participating, amount of decision-making input they contribute, and whether they hold a leadership position. This section presents the results.

Across the five Pathways countries, nearly all of the women surveyed report actively participating in at least one formal or informal group that exists in their community (Table 17). This is not surprising given criteria for participation in the Pathways program is based, in part, on membership in a collective. More women from male-headed households became active participants in India and Mali, as did women residing in female-headed households in Mali and Tanzania.

Table 17. Women's participation and leadership in groups

Indicator	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
OC 1.1: % women participating in formal and informal groups										
All households	100.0	96.4	90.5	98.9*	99.0	100.0*	83.3	94.0*	96.0	98.1*
Female HHHs	^	100.0	94.4	97.6	98.6	100.0	86.1	97.1*	93.8	97.7*
Male HHHs	100.0	95.4	89.4	99.2*	99.1	100.0	83.1	93.7*	97.1	98.3
OC 1.2: % women holding leadership positions in formal and informal groups										
All households	33.3	49.1*	22.1	14.3*	53.1	72.3*	41.9	34.8*	43.5	52.1*
Female HHHs	^	39.1	15.1	9.9	61.1	76.8*	45.2	47.1	46.0	54.7
Male HHHs	37.0	51.8*	24.4	15.3*	50.7	70.3*	41.7	33.2*	42.2	50.5*

*Statistically different at least at the 10% level.
^ Sample size less than 15

In general, participants indicate a variety of benefits from VSLAs/SHGs, mostly related to learning about agriculture, having better access to credit, livelihood, and empowerment. These translate into tangible actions, such as an increased ability to purchase livestock and farming inputs, funds to be able to start small businesses, covering food and medical expenses, pay for school fees, and purchase clothing for children. In Tanzania, female collective members are able to build new houses, buy furniture and other household items, and buy and sell crops using money generated from the VSLA. Qualitative feedback also indicates that VSLAs offer friendship and encourage social cohesion, and that moreover, husbands were becoming more supportive of their membership.

Qualitative data in Mali revealed that participants stressed how education and literacy training are key limiting factors for women's participation, particularly in positions of leadership. Thus, one of the clearest recommendations given during the qualitative research was that CARE should include literacy training in future projects. What was not clear from these comments is whether there is an actual shortfall of capacity of women to play leadership roles, which literacy would address, or whether literacy would provide women with the credibility to be elected and command the respect of the community. Often, quite effective local leaders – whether men or women – can be lacking in formal education and literacy, and compensate for that through other qualities such as hard work, good networking, wisdom, business acumen, accomplishments in their personal and work life, etc.

Among women who participate in groups, the number who state they hold leadership positions increased over the project period in Ghana, Malawi and Tanzania (Table 17). Focus groups with women in Ghana and Tanzania expressed a positive impact on their ability to hold leadership positions not just in collectives, but also in government offices as women gradually gain recognition by other women and men for their roles as competent decision-makers.

Conversely, despite the promising results seen in Malawi, qualitative findings at endline suggest that women are not being recognized as capable leaders outside of their gender-normative sectors or positions (e.g., school committees, secretary of marketing committees), meaning that men are still leading the community.

3.7.2 Self-confidence

Important to the achievement of Pathways Outcome 1 are the self-confidence and conviction held by poor women farmers. Care Pathways intended to support community advocacy to ensure citizens understand their rights and responsibilities, and are able to engage with local government structures on issues that affect them. Gauging women's confidence in speaking up also contributes to better understanding of women's potential for leadership and influence in their communities. To do so the surveys asked men and women about their comfort level in speaking up about three topics (gender issues, infrastructure decisions, and the misbehavior of authority figures) and whether they had expressed their opinion in a public meeting (other than VSLA or producer group meetings) any time in the last 12 months. Respondents who responded positively to two of the four questions in Ghana and three of the four in the other four countries are considered to have achieved the confidence in public speaking indicator.

Survey data indicate that women in India, Malawi, and Mali made great strides in increasing their confidence to express their opinions in public (Table 18). Male respondents show an even more dramatic improvement over time. Qualitative data substantiate the lack of change in Tanzania where women said that even though Pathways has enabled more women to hold leadership positions in their collective, they still lack confidence in speaking up outside the group to the larger community due to a limited formal education. However, the opportunities for women's leadership also build the confidence and skills that can lead to longer-term changes in attitudes about women, and greater acceptance of women's opinions, in the broader culture. Social change of this nature usually occurs slowly and the Pathways project can be viewed as contributing to this process.

Table 18. Agency - expressing opinions about community affairs

Indicator	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
OC 1.3: % respondents confident speaking in public about gender and other community issues at the local level										
Female respondents	75.8	66.4*	60.8	74.8*	53.3	77.2*	38.9	59.3*	66.5	61.9
Male respondents	75.8	95.2*	43.7	83.7*	73.8	87.4*	45.2	82.3*	94.2	92.1

*Statistically different at least at the 10% level.

One Ghanaian focus group participant describes women's confidence building as "a slow process"; women are only gradually gaining sufficient confidence to attend and participate in various types of community meetings, a pattern across the five Pathways countries. Men in all of the five countries describe being less confident to discuss gender issues than other issues; women appear more ready to discuss gender issues after four years of Pathways participation. One common pattern described qualitatively is that women are increasingly invited to participate in meetings but subtly or not so subtly discouraged from expressing opinions. Gender equality is slowly occurring in local institutions; Pathways has succeeded in making progress in this arena given the daunting challenge that requires years to unfold. There remains a ladder that women must gradually climb in their efforts towards empowerment.

3.8 Change Lever 2: Access

To achieve Change Lever 2 outcome -- *increased access to productive resources, assets, markets, and appropriate and reliable services and inputs for poor women farmers*—the CARE Pathways Project designed activities to improve the linkages between service providers (private sector, institutions, and government) and women farmers. Key efforts of Pathways related to increased access to reliable services include training community-based extension agents in technical skills (agronomy, processing, storage, etc.) and extension skills (capacity to train others); equipping extension agents with materials and equipment to support training and their own mobility; and facilitating linkages between extension agents and district-level structures for recognition, certification and support. Key efforts to increase access to inputs include facilitating collective buying of seed, fertilizer, and other productivity enhancing inputs through the VSL-IGA groups; enabling capable VSL-IGA groups and/or individual members to operate as input suppliers; linking VSL-IGA groups with relevant input suppliers; and linking extension agents to information sources and input suppliers.

To explore the success of Pathway's linking efforts, the baseline and endline surveys include a range of questions related to women's access to financial services to support income generation; women's access to and satisfaction with agricultural extension services; women's access to agricultural inputs; and the types of output markets women are using to sell agricultural products. This section presents the results.

3.8.1 Women's Access to Financial Services

Access to and control over formal loans improved from baseline to endline for women who head households in all of the Pathways countries, but the data are mixed for women residing in male-headed households (Table 19). Women's access and control of loans in Tanzania and Malawi remains low at 37% and 25%, respectively. Qualitative results indicate that borrowing access has

improved for women in the program areas in Tanzania, while in Malawi the increase was driven by improvements in this measure, specifically for female-headed households, presumably in access. Participants in FGDs in both Tanzania and Malawi identified VSLAs within their communities as the primary borrowing source. The most significant barrier to formal loan access for program participants in Tanzania and Malawi, again identified in FGDs, is the distance required to access formal lending institutions that tend to be located outside of villages in larger cities, but Pathways participants also cited less desirable loan terms and collateral requirements. Households who do use formal financial institutions are typically those who are better off economically in the community.

Table 19. Access to and control over loans for income generation

Indicator	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
OC 2.1: % women with access to and control over loans for IGA[1]										
All households	15.3	12.7	7.1	5.2	29.9	36.8*	61.9	53.9*	18.2	24.8*
Female HHHs	10.0	19.0	49.0	51.0	56.5	68.6*	37.9	55.6	29.3	38.8
Male HHHs	16.3	14.5	5.5	2.1*	21.7	22.7	64.1	53.7*	12.8	15.7

*Statistically different at least at the 10% level.
[1]Includes households that have taken out a loan or want to take out a loan

While there is evidence of slight improvement with respect to loan access and control in Tanzania and Malawi, women in male-headed households in nearly all countries where Pathways was implemented continue to lack access to borrowing and/or control of borrowed funds (Table 20). In all countries other than Mali, the percentage of women in male-headed households with access and control of loans is less than one-quarter - ranging from 2% in India to 23% in Malawi. Access and control of loans for women in male-headed households actually declined in both India (6% to 2%) and Mali (64% to 54%). Focus group participants in the Pathways countries invariably expressed considerable dissatisfaction with the availability of credit from financial services.

In Mali, women's access and loan control is substantially above levels seen in other Pathway's countries – 54% at endline. On average across all households surveyed in Mali (both female- and male-headed), women's loan access and control declined from 62% to 54%; qualitative results suggest this was driven mostly by declines in control of loan proceeds. With VSLAs as the principal lending source for Pathways program participants in Mali (loans source for 85% of those taking loans), this might suggest that at endline women are more frequently resorting to borrowing from VSLAs and subsequently turning over loan proceeds to their husbands.

Table 20. Women's use of loans

Indicator	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
Business capital (IGA, etc.)	62.5	25.0	18.9	7.0	62.7	53.3	47.9	48.0	53.3	22.5
Purchase agricultural inputs/seed	46.9	40.6	62.7	56.5	14.4	29.1	22.3	31.4	29.3	31.8
Purchase/lease of land for ag	1.0	0.0	1.2	17.7	0.8	5.2	2.7	2.9	1.1	3.8
To purchase livestock	1.0	0.0	21.9	8.1	2.3	6.1	2.7	5.5	2.2	4.5
To buy food	31.3	29.2	30.2	39.8	43.5	48.3	35.7	25.0	8.7	39.4
Pay for school expenses	21.9	44.8	7.1	17.7	10.3	14.9	1.5	4.9	16.3	27.3
For medical expenses	5.2	8.3	14.8	43.0	12.9	12.9	8.5	9.6	5.4	26.0
Clothing	2.1	0.0	8.9	21.0	15.4	11.5	7.0	7.6	0.0	7.3
Furniture/utensils	1.0	0.0	1.2	1.1	5.3	8.1	0.0	0.6	3.3	2.8
Housing	1.0	0.0	10.7	11.8	9.7	7.7	0.0	0.0	7.6	9.7
To repay other loan	-	-	1.2	5.4	3.6	5.2	0.6	0.6	2.2	1.7
Funeral expenses	5.2	2.1	0.6	2.7	2.7	5.0	0.3	0.3	0.0	0.7
Wedding	-	-	1.8	5.4	0.8	1.6	4.6	4.1	1.1	1.0
Other	3.1	2.1	3.6	3.2	6.3	27.1	7.6	14.0	3.3	11.8

- Not collected by country survey.

Women's access to financial services to support agricultural activities remains universally high for four of the five Pathways program countries – ranging from 93% in India to 97% of women surveyed in Ghana (Table 21). Access to financial services for women farmers in Mali increased substantially from less than half (44%) at baseline to 80% at endline.

Table 21. Women's access to financial resources

Indicator	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
OC 2.4: % women accessing agricultural financial services (loans, savings, crop insurance) in last 12 months										
Female farmers	95.2	97.2	96.2	93.9	96.9	96.4	44.4	80.1*	97.6	95.7*

*Statistically different at least at the 10% level.

3.8.2 Women's Access to Agricultural Extension Services

The number of women who state they, themselves, met with an agricultural extension worker or a livestock / fisheries worker in the last 12 months increased dramatically across all Pathways countries, save for Tanzania where levels already approached 100% at baseline (Table 22). In Ghana, India, and Malawi rates of access to agricultural extension tripled or nearly tripled and at endline range between 79% and 89%. In Mali, the increase was also three-fold although from a lower base – the percentage of female farmers accessing extension services is 63%.

Table 22.Women's access to agricultural services

Indicator	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
OC 2.2: % women with access to agricultural extension services in last 12 months										
Female farmers	24.6	79.1*	23.8	89.1*	28.8	81.6*	20.3	62.5*	97.6	95.7*
OC 2.3: % women reporting satisfaction with agricultural extension services										
Female farmers	97.1	96.6	83.9	95.0*	94.0	94.0	80.5	86.2	97.6	95.7*

*Statistically different at least at the 10% level.

With the exception of Tanzania, qualitative results corroborate the significant increases in extension access seen in the quantitative study results. Focus group participants that were not beneficiaries of the Pathways program in Malawi and India also reported greater access to agricultural extension, suggesting that the work undergone by Pathways to increase agricultural service access is capable of spilling over to neighboring households and communities.

Encouragingly, increased access to agricultural extension did not appear to reduce the quality of service. Satisfaction with agricultural extension remained extremely high across all Pathways countries, with rates of satisfaction ranging from 86% - 97% at endline. Qualitative ranking exercises in Ghana, Malawi, Tanzania, and Mali verified women's access to agricultural extension services to be amongst the highest ranked Pathways intervention. The Pathways project has helped Ghana government extension service to realize the importance of addressing the specific challenges faced by women farmers to get good results by applying more gender-sensitive approaches such as targeting women to build their capacity. Malawi and Tanzania focus group participants specifically link increased access to extension services to the ability to get higher yields from small land parcels, increasing crop diversity, and adopting early-maturing varieties that help buffer increasingly unpredictable rains. Non-VSLA members discussed the spillover effect that Pathways has had to increase all women farmers' access to extension services.

3.8.3 Women's Access to Agricultural Inputs

Women's access to agricultural inputs increased in all Pathways program countries – at endline the percentage of female farmers with access to seeds, fertilizers, and other inputs ranges from 69% - 89% (Table 23). In Tanzania and India, increases in access were particularly strong, growing from roughly one-third of female farmers with access to inputs three years ago to 75% and 89%, respectively, today. Within the beneficiary population across all countries, with the exception of India[23], the sourcing of inputs from cooperatives increased substantially – suggesting that the Pathways-supported cooperatives were successful in increasing market share of input provision among their members (see country endline reports). Women farmers in India are using fertilizers, particularly composting, in their home gardens and some women use mechanical implements facilitated through Pathways subsidized with government support. Pathways' in Ghana has successfully helped women farmers access their own land for cultivation in a context where customary land tenure practices routinely deny women access to land.

[23] CARE India, with non-Pathways funding, supported agricultural kiosks as a means of increasing access to agricultural inputs. These CARE supported kiosks gained significant share among Pathways participants over the life of the program.

Table 23.Women's access to agricultural inputs

Indicator	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
OC 2.5: % women accessing agricultural inputs (seeds, fertilizers, etc.) over the last 12 months										
Female farmers	55.6	69.2*	36.5	89.1*	78.1	86.4*	59.3	69.5*	34.8	74.6*

*Statistically different at least at the 10% level.

3.8.4 Women's Access to Output Markets

Success with respect to increasing female farmer's access to output markets was mixed across Pathway's countries. In Ghana and Tanzania, access to output markets doubled among women surveyed to 35% and 56%, respectively (Table 24). Increases were also recorded among female farmers in Malawi with 63% reporting access to output markets at program termination.

A particularly positive development among Tanzanian female farmers substantiated both quantitatively and qualitatively, is the substitution of producer's groups as agricultural product sales points versus the use of the government warehouse receipt system. In the surveyed areas of Tanzania, before initiation of the Pathways program, the government-sponsored warehouse receipt system operated in many cases under monopolistic conditions, with below-market price controls. Producer groups have also grown exponentially in Malawi, helping farmers negotiate better pricing arrangements for their agricultural produce.

Table 24. Women's access to productive resources

Indicator	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
OC 2.6: % women accessing output markets to sell agricultural production over the last 12 months[1]										
Female farmers	15.4	35.0*	75.6	50.5*	41.5	62.9*	24.4	23.0	24.9	56.4*

*Statistically different at least at the 10% level.
[1] Female farmers who reported selling products themselves

Female farmers in India reported lower access to output markets, with reported market access dropping from 76% to 51% of females surveyed (Table 24). CARE staff indicated that this drop was due to collectivization of agricultural production; farmers participating in collectives marketed their produce directly through the collective to traders. Pathways did not have success promoting increased market access among participants in Mali; there was no significant change detected over life of the program in this measure.

3.9 Change Lever 3: Productivity

To realize Change Lever 3, CARE Pathways Outcome 3 aims for "*Improvement in yield and income through adoption of sustainable and intensified agriculture and value addition".* Project activities were designed to sensitize smallholders on crop production, conservation agriculture, soil and water conservation, and irrigation; to train smallholders in improved practices for production of target crops according to needs. The project design document also includes livestock and husbandry components, but limited resources (human and financial) resulted in these elements being dropped before implementation began. The project promoted crop diversification for women

with available land by procuring and distributing seed for demonstration purposes, training mature VSL-IGA groups on relevant practices for advance crop production and processing opportunities, and facilitating links to relevant input providers for higher level commodities.

To determine change in the status of poor women farmer's agricultural productivity this evaluation compares baseline and endline values for women's net income from agricultural production and/or related processing activities; the number and type of crops grown; the agricultural yield of crops supported by the project; and whether women are adopting agricultural, livestock, storage, and post-harvest practices which promote sustainable production and value addition.

Women who engage in any agricultural activity, including primary production, processing, or marketing of food, fiber, or fuel crops, large and small livestock, bees, fish, horticultural crops such as vegetables, fruit, nuts, berries, herbs or natural products (non-timber forest products and wild fisheries) are interviewed to understand numerous aspects of their involvement in and experiences with production. Women whose only involvement in agriculture is wage labor are not interviewed about these topics.

3.9.1 Women's Income from Agriculture

Women's net annual income from agricultural production increased significantly for female farmers in Malawi and Tanzania (Table 25). In Malawi, annual net farm income increased by one-half to $253, while in Tanzania it increased by about one-third to $276. Women in female-headed households made disproportionately strong gains in all of the countries except Ghana[24]. The conduits by which women experienced these strong gains in income are varied.

In Malawi, despite limited evidence from the quantitative study of agricultural productivity gains, particularly in the principal staple crop maize, farmers reported increases in soya and groundnut prices from baseline to endline that may have contributed to increased income. There was strong growth in the production of soya by female farmers, combined with reported yield increases for this crop, and improvements in market access may have contributed to higher income for female farmers. It should be noted that income measurement coincided over a time period in Malawi characterized by extreme inflationary pressure on consumer and food prices, thus the income gains reported may be overstated in real terms when deflating using point estimates of headline inflation statistics that are changing, in particular increasing, rapidly.

[24] Ghana did not collect a sample size sufficient to enable legitimate conclusions to be drawn with respect to this indicator. Please see the country report.

Table 25. Women's net annual income from agricultural production

Indicator	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
OC 3.1 Mean annual net income of women from agricultural production and/or related processing activities (USD 2015)										
All households	162.0	45.9*	64.2	76.9	165.07	253.01*	222.49	214.34	205.92	275.61*
Female HHHs	^	^	32.0	69.0	64.24	155.72*	99.84	160.56	124.56	210.58*
Male HHHs	190.0	31.0*	58.2	79.6	196.32	294.56*	231.61	219.46	246.02	314.73

*Statistically different at least at the 10% level.
^ Fewer than 20 households reporting.

Similarly in Tanzania, increases in women's earnings from agricultural production coincide with strong gains in cash crop production, particularly an improved variety of sesame introduced by the project. Women's access to agricultural input and output markets improved substantially over the life of the project, perhaps supporting prices received for agricultural products and reducing cost of purchased inputs, which together would support increases in net agricultural income margins. Discouragingly, increases in income from agriculture did not appear to translate into improvement in household food security, as average household dietary diversity scores (Table 3) declined sharply over the life of the program.

In India, there were no differences detected in women's net agricultural income over the life of the program (Table 25). Average annual net income from agriculture at endline for women in India is $77, significantly lower in dollar terms than the same measure for other Pathways countries. While Pathways India made strong inroads towards increasing the number of women active in agricultural production and growth in the proportion of total household income derived from agriculture, this source of income for women and households continues to be relatively low for households in the Pathways India program area.

There was no evidence of change in this measure for women in Mali. Reported gross income from agriculture is increasing for households surveyed in Mali – when considered in combination with increased access to inputs (Table 23), it is possible that the women surveyed on average are currently experiencing higher initial costs as a percentage of agricultural revenue that should translate to better yields, higher production, and higher net income from agriculture from upcoming harvests. While there was no reported increase in net income for women, focus group discussions indicated that participants report benefits from Pathways Mali, including increased income and food security.

3.9.2 Women's Agricultural Yields

There is mixed evidence of improvements in agricultural productivity for project-beneficiary households across the Pathways program countries (Table 26). In general, there was little measured change in agricultural yields for crops supported by Pathways and produced by project beneficiaries – although, it should be noted that agricultural yield is a notoriously difficult indicator to measure and is very sensitive to estimates of agricultural land dedicated to crop production

which can be difficult to estimate, particularly when a household is growing multiple crops. Also, yields sometimes will peak with a lag (i.e., 1-2 growing seasons) after the introduction of a new technology, depending on the new technology or practice.

Table 26. Yields from crops supported by PATHWAYS

Indicator	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
OC 3.2 Agricultural yield in crops supported by Pathways (kg/Ha)										
Rice	57.9	44.8	852.6	1200.0*	-	-	1900.8	1253.2*	-	-
Maize	72.5	67.2	567.4	392.3*	-	-	-	-	-	-
Groundnut	^	^	-	-	801.9	762.8	-	-	-	-
Soya	44.7	38.7	-	-	711.8	794.5	-	-	-	-
Millet	-	-	-	-	-	-	552.4	805.5*	-	-
Sorghum	-	-	-	-	-	-	773.7	1038.8	-	-
Sesame	-	-	-	-	-	-	-	-	191.9	300.5*
Cashew	-	-	-	-	-	-	-	-	-	-
Cassava	-	-	-	-	-	-	-	-	1007.9	798.3
Banana	-	-	-	-	-	-	-	-	-	-
Pulses	-	-	228.7	287.1	-	-	-	-	-	-
Fonio							1100	805.7		

*Statistically different at least at the 10% level.
^ Fewer than 20 households reporting.
- Crop not grown in country.

However, there were some successes. As mentioned above, growth in sesame production and productivity appeared to support higher income for female farmers in Tanzania (Table 25). In India, rice production, which is integral to the diet of the target population, has increased by nearly 27% over the project period to 1081 kg per hectare. This is considered a significant achievement for Pathways India and is verified by information from the qualitative study. According to Pathways staff, maize production was down in the two years prior to the endline due to two consecutive cyclones. For female farmers in Mali, yields for millet, one of the three principal crops supported by Pathways Mali, nearly doubled to 806 kg per hectare. Encouragingly in Mali, this increase took place in a difficult weather environment characterized by a lack of and inconsistent rains during the last two growing seasons. Yields in Ghana were affected by late rains, which deterred some farmers from planting and sowing crops at effective times to take advantage of subsequent good rains. Focus group participants, however, who note the success of soya cultivation and preparation demonstrations and training, improved yields by using Pathways recommended seed types, timing of weeding and harvesting, plant spacing, and fertilizer application.

3.9.3 Crop Diversification

Efforts to promote greater crop diversification for female farmers, in terms of the number of crops grown, were successful in nearly all Pathways countries. Female farmers at program end grew a range of 2.0 crops in India to 3.8 in Mali, on average (Table 27). Female farmers in India reported a particularly strong gain on this measure, on average adding nearly one additional crop to their household crop portfolio over the life of the program. In addition to diversifying their agricultural crops, Indian Pathways households increased their production of the forest products, the *mahula* flower and *sal* leaves.

In Malawi, the number of crops produced increased from 2.6 with 3.0, with female-headed household reporting particularly strong gains (Table 27). Soya, a Malawi Pathways supported crop, and beans appear to be the most frequent additions to household crop portfolios in Malawi. In Tanzania, farmers increased their crop diversity because of increased planting of sesame, while in Mali female farmers were engaging in higher vegetable crop production (e.g. tomato, peppers, onion, cabbage).

Table 27. Crop diversity

Indicator	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
OC 3.3 Number of different crops grown										
All households	2.6	2.6	1.2	2.0*	2.6	3.0*	3.4	3.8*	2.3	2.6*
Female HHHs	1.8	2.9*	0.9	1.5*	2.3	3.4	2.8	3.7	1.9	2.4*
Male HHHs	2.7	2.6	1.3	2.2*	2.7	2.8*	3.4	3.8*	2.5	2.7*

*Statistically different at least at the 10% level.

3.9.4 Women's Agricultural and Post-harvest Practices

Pathways was successful in efforts to promote adoption of improved agriculture practices, with greater numbers of female farmers adopting three or more agriculture practices over the life of program across all countries in which Pathways was implemented with the exception of Ghana, which reported very high baseline figures (Table 28). Nearly 70% of Malawi female farmers, who ranked this activity near the top of the Pathways activities, are using three or more improved practices, with adoption of improved seed, use of manure/compositing, crop rotation, and alley cropping experiencing the highest uptake. Among Indian female farmers, roughly half are using three or more improved practices; the most commonly reported according to the qualitative survey are line sowing, improved seed quality and preparation. Pathways animators and government extension agents have combined to provide women farmers with knowledge of improved methods that are often relayed to husbands. In Tanzania, 47% of female farmers are engaging in three or more improved practices, with minimum tillage, crop rotation, mulching, cover crops, and improved seeds among the most widely adopted new practices. Conducting training in improved agricultural practices through Farmer Field and Business Schools established through VSLAs, training on specific topics is timed to coincide with the demands of the agricultural season, from farm preparation to harvesting, so that farmers can apply the training when they receive it.

Adoption of two or more improved post-harvest processes grew among female farmers surveyed in Ghana, Malawi, and Tanzania; however, reported adoption fell in India and Mali. Growth in adoption of post-harvest practices was particularly strong among women farmers in Tanzania, growing from 28% to 60% over the life of the program (Table 28). The reduction in use of improved post-harvest practices in Mali occurred because fewer female farmers used sorting, grading, and processing techniques; Indian farmers also reduced the use of improved post-harvest techniques. However, focus group participants hailed the cereal storage facilities managed by VSLAs and networks, particularly the borrowing mechanisms of those. Members can borrow millet with no interest cost, non-members pay a modest amount, and there were no reports of non-repayment.

The use of improved storage practices remains generally low by most Pathways program participants in Ghana, India, Malawi, and Tanzania– ranging from 16% in Ghana to roughly one-third (37%) in India (Table 28). The lone exception with respect to this measure is Mali, where 60% female farmers surveyed are using improved storage practices. Collectives supported by Pathways Mali are successfully promoting and managing cereal storage facilities that include no-interest borrowing facilities (millet) for members.

The percentage of women engaging in improved livestock practices ranges from 30% in Mali to an impressive 81% in Malawi (Table 28). Some of the Pathways country programs deemphasized or suspended support of livestock and husbandry components of programming, so it is difficult to attribute any increases or decreases in adoption specifically to Pathways.

Table 28. Improved agricultural, harvest, and storage practices

Indicator	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
	% of female farmers									
OC 3.4: % women adopting 3 or more improved agricultural practices	61.1	50.5	33.0	52.4*	46.8	69.8*	19.0	26.3*	21.2	46.6*
OC 3.5: % women farmers adopting 2 or more post-harvest processes	42.9	83.2*	83.8	53.3*	61.3	73.6*	22.7	10.9*	27.5	59.7*
OC 3.6: % women adopting improved storage practices	51.6	15.9*	48.4	37.1*	27.0	25.1	33.1	62.3*	31.0	25.6*
OC 3.7: % women using one or more improved livestock practices	40.5	37.4	31.8	52.0*	45.0	80.8*	55.8	29.5*	33.1	42.7*

*Statistically different at least at the 10% level.

3.10 Change Lever 4: Household Influence

The focus of Pathways Change Lever 4 is to ensure that "*poor women farmers have increased contributions to and influence over household income and decision-making"*. To determine if there have been changes to women's contributions to and influence over household income and decision-making, the surveys measure women's control of household and agricultural income and expenditures; [25] women's control of household and agricultural assets; [26] and women's decision-making related to health care and reproductive health.

3.10.1 Women's Control of Income, Expenditure and Asset Decisions

Substantial positive changes in control of assets (both household and agricultural) occurred for women in all Pathways countries, particularly those who reside in male-headed households; women heading households normally by necessity must assume greater control of household assets and expenditures decision-making (Table 29). Endline results show that the number of women in

[25] Women's control of income and expenditures is defined as women who have input into most or all decisions relative to a household or agricultural domain AND who have input into most or all decisions regarding the use of income from the activity (if it is an income-generating activity).

[26] Women's control of household assets is defined as women who state they are a sole or joint decision maker regarding the sale or purchase of various household and agricultural assets.

male-headed households who report decision-making joint or sole control over household and agricultural assets nearly doubled for women in Ghana, India, Malawi, and Tanzania, and tripled for Malian women.

Across all five countries, men are primarily considered to be the head of the household and as such maintain control of decisions about assets. However, qualitative evidence in most countries suggest that positive changes are occurring, if slowly, that allow women to be more invested in decisions for household and agricultural assets. In Malawi, this is supported from FGD findings that women at endline no longer fear domestic violence that was once preventing women from making their own decisions on several subjects, most notably decisions about household expenditures and assets.

Table 29. Gender-equitable decision-making for assets

Indicator	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
OC 4.3: % women with sole or joint decision-making and control over household assets										
All households	32.8	48.1*	40.0	67.8*	57.2	72.9*	9.8	46.7*	68.3	87.4*
Female HHHs	^	68.4	55.1	87.7*	79.9	83.3	48.7	51.6	88.9	98.3*
Male HHHs	28.0	43.7*	35.5	63.5*	50.2	68.4*	6.2	46.4*	57.5	80.9*
OC 4.4: % women with sole or joint decision-making and control over agricultural assets										
All households	28.8	48.2*	52.8	76.7*	60.4	76.2*	21.7	48.4*	76.5	90.1*
Female HHHs	66.7	69.6	75.2	87.8*	84.1	83.3	75.0	57.1	92.6	96.6*
Male HHHs	20.4	42.5*	46.6	74.3*	52.9	73.1*	17.0	47.7*	68.1	86.1*

*Statistically different at least at the 10% level.
^ Sample size less than 15

Indian women significantly increase joint or sole control over household income and expenditures. Men are seeking suggestions for very practical reasons: women are more knowledgeable, such as about market conditions and fetching better prices, and they are more involved in income producing activities. In the baseline study women were playing important roles in purchasing basic household items like groceries and clothes. The shift through Pathways is men are now at least consulting with women more in agricultural production and sales, though decision-making may still largely be with men. Women are more freely expressing themselves and men listen more often to their wives as a part of the decision-making process. Women claim to have attained a body of knowledge through Pathways and SHG activities that men value.

The same pattern is seen regarding women's control over income and expenditures related to agriculture, with an additional improvement for women in Ghana (Table 30). Tanzanian female focus groups report an increasing number of women acquiring the financial means to purchase land through their VSLA membership, either individually or in groups. Malian women increasingly make their own decisions regarding the use of the money they earn from their own agriculture, business activities, and food stocks and money used to prepare meals as well as becoming increasingly autonomous regarding decisions about their children's education and health. Men appear increasingly consultative regarding the use of large amounts of money.

Qualitative findings in Malawi generally support this result indicating that while women are able to made decisions on the use of some income, it is the male who makes the majority of the decisions. This appears to be a pattern throughout.

Table 30. Gender-equitable decision-making for income and expenditures

Indicator	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
OC 4.1: % women with sole or joint control over household income and expenditures										
All households	67.7	77.3	58.4	52.5*	63.0	63.4	24.5	48.0*	67.5	81.6*
Female HHHs	^	91.3	73.8	84.5*	82.9	75.4	62.2	56.3	88.8	93.3
Male HHHs	64.2	73.6	49.6	42.3*	56.7	58.1	21.1	47.3*	56.5	74.5*
OC 4.2: % women with sole or joint control over agricultural income and expenditures										
All households	48.0	59.1*	53.4	52.9	54.8	57.2	9.4	24.9*	64.0	77.9*
Female HHHs	79.2	87.0	72.4	94.0*	78.1	77.5	51.4	48.4	87.6	89.4
Male HHHs	40.6	51.7	48.1	43.9	47.4	48.2	5.6	23.0*	51.8	70.9*

*Statistically different at least at the 10% level.
^ Sample size less than 15

3.10.2 Women's Control of Reproductive and Health Care Decisions

At the end of the Pathways project, survey data indicate that the majority of women in all five countries have become the sole or joint decision-makers for health care and family planning decisions in both male- and female-headed households (Table 31). Of note is the substantial increase in the number of women in male-headed households in Mali having a say over health decisions, including their reproductive health, which has nearly tripled from roughly 30% to 80%. In Malawi, fewer women actually have less control of these decisions than they did at baseline, but baseline figures were high. Qualitative data at endline may help explain this decline; although women in Malawi feel comfortable communicating with their husbands about their sexual needs, men get angry if a woman says no to sex, or they put a timeline on celibacy (e.g., can't be more than two days). The majority of women agree that it is rarely possible to refuse sex. Another FGD reported that gender-based violence is considered appropriate if a woman aborts a pregnancy.

Indian women describe themselves as the primary household decision-maker in accessing health services and the decisions surrounding education are made jointly with their husbands. The trend is for more joint decision-making on reproductive health decisions between husbands and wives throughout the five country Pathways working areas. Ghana focus group participants reinforce the idea that family planning decisions is a joint one, contravening traditional community leaders, who maintain that men should retain that decision.

Table 31. Gender-equitable decision-making for health care and reproductive health

Indicator	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
OC 4.5: % women making sole or joint decisions about health care										
All households	78.8	80.9	93.8	94.7	85.8	82.0*	31.9	80.0*	86.0	93.9*
Female HHHs	84.0	95.7*	91.1	97.5	97.9	83.9*	81.8	83.9	96.2	97.7
Male HHHs	77.4	77.0	94.6	94.1	81.9	81.2	27.5	79.6*	80.8	91.7*
OC 4.6: % women reporting sole or joint decision-making over reproductive health decisions (family planning; spacing of children)										
All households	96.1	91.2	97.6	98.0	94.9	91.9*	35.4	82.6*	95.5	98.6*
Female HHHs	^	^	98.4	96.4	98.4	92.8	77.8	69.2	92.3	100.0*
Male HHHs	95.7	90.5	97.4	98.2	94.4	91.7	31.6	83.2*	96.2	98.0

*Statistically different at least at the 10% level.
^ Sample size less than 15

3.11 Change Lever 5: Enabling Environment

The aim of Pathways Change Lever 5 is to facilitate the social changes necessary to create more positive and enabling attitudes, behaviors, social norms, policies, and institutions that promote women's rights. The VSLA (SGH in India) is the key entry point for women to discuss gender equality issues, challenging traditional gender and cultural related barriers in social and economic activities. To determine whether there is any change in men's and women's attitudes toward gender-equality, male and female respondents were asked questions about their attitudes, perceptions, and practices related to gender roles, household violence,[27] and women's mobility. The surveys also explored whether sex is a barrier to participating in various local groups.

3.11.1 Attitudes about Gender Equality in Family Life

Respondents were asked whether they agreed or disagreed with four statements that reflect men's and women's roles in family life. Responding to three of the four questions in a manner that supports gender-equity provides a positive attitude expression for the measurements underlying gender-equal attitudes. Overall, fewer than half of the respondents in Malawi and Tanzania, and less than one quarter in Ghana, India, and Mali voiced support for greater gender equity in family life (Table 32). While a little progress in shifting attitudes towards gender equity has been made in Tanzania, and held steady in Malawi, patriarchal attitudes about family life and the distinct roles of men and women in the household still dominate. In fact, support has significantly decreased by half among female respondents in Ghana, and fewer women and men in India endorse gender equity.

Table 32. Attitudes about gender equality in the household

Indicator	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
OC 5.1: % of respondents expressing attitudes that support gender-equitable roles in family life										
Female respondents	45.4	25.5*	35.7	25.2*	44.4	47.2	12.8	16.0	31.4	42.5*
Male respondents	21.5	20.0	19.3	13.7*	50.7	45.0	6.2	7.1	22.9	34.6*
OC 5.2: % of respondents expressing attitudes that reject household gender-based violence										
Female respondents	40.8	17.3*	26.5	49.4*	79.5	80.3	14.1	25.8*	29.0	74.8*
Male respondents	30.0	20.9	15.3	37.6*	83.3	81.5	55.6	19.7*	22.9	70.0*

*Statistically different at least at the 10% level.

However, the qualitative data in Ghana and elsewhere do not support the quantitative data. Focus group participants note that gender relations and communication have improved over the past four years, enhancing peace and unity in households. More men are helping their wives with household activities such as cooking, bathing children, carrying firewood and water. In turn, the increased ability of women to contribute to household expenses is cited by many women as a reason for better relations in the home. Indian women and men report changes in the household division of labor over the last three-to-four years connected to pregnant or lactating women or women busy with SHG and income generating activities, and attribute such changes to Pathways gender

[27] Male and female respondents were asked to agree or disagree with two statements: 1) *There are times women deserve to be hit,* and; 2) *a women should tolerate violence in order to maintain stability in the family.* For this study, disagreeing with both qualifies as a rejection of household gender-based violence and serves as the underlying measurement for the outcome indicator.

sensitivity awareness building. This burden sharing includes caring for children, helping to prepare them for school, fetching water and firewood, cooking, and sharing in agricultural production activities such as weeding, sowing, and harvesting.

Changes in gender relations and roles in the home and community can be expected to occur slowly, because they challenge social and cultural norms that, though inequitable, are seen to contribute to the stability of community life. Many women also accept the idea that the man is the head of the household and that a woman dominating household decisions is not desirable or socially acceptable. It is also a sensitive area for men to negotiate, because if they are seen by the community as too supportive of their wives, they are perceived as weak, which can affect their relationships and social status in the community. Part of Pathways' work in the future entails helping men, in particular, to disentangle beliefs around control and social status from their role within the household. One should note the essential role of VSLA as the key entry point for women to discuss gender equality issues and challenge traditional gender and cultural related barriers through the introduction and implementation social as well as economic activities.

Rejection of gender-based violence (GBV) increased significantly for men and women in India and Tanzania, and for women in Mali (Table 32). Qualitative results in India indicate that restrictions on the production and consumption of alcohol, reported as the leading social problem at baseline, contributed to lower rates of domestic abuse. Multiple sources in Tanzania were cited as contributing to broad-based sensitization against GBV, including the government, media, and Pathways programming.

Rejecting GBV is rather common among both men and women in Malawi and appears to have maintained similarly high levels over time (Table 32). Focus group discussions in Malawi report that GBV is a reality and prevalent; however, both women and men agreed that it is slowly declining with higher rates or reporting abuse to formal authorities compared to three years prior.

Discouragingly, attitudes with respect to gender-based violence deteriorated for women in Ghana and men in Mali, with only 17% and 20% surveyed rejecting GBV, respectively. Qualitative interviews in Mali reported modest change in attitudes regarding gender equality, in particular emphasizing that greater communication between husbands and their wives is taking place, and women are achieving a greater role in intra-household decision making. However, the results reported in Table 32 demonstrate that work remains to shift some of the negative cultural norms surrounding women's roles and rights within the home.

In contrast to survey data across the five countries, many focus group participants spoke about positive changes in attitudes related to domestic abuse and violence, less prevalence of gender-based violence, and an increased tendency to report abuse to police or other agencies than was the case four years previously. It was also agreed, however, that despite perceived improvements, the problem is far from eradicated. Indian villages report success in restricting alcohol and reducing consumption and related abuse. Non-SHG members note the impact of anti-alcohol activities within SHGs on entire communities.

3.11.2 Women's Mobility

To understand freedom of mobility, female VSLA members are asked if they have to ask permission from their spouse or another family member to go to ten different locations. Four responses are possible: 'Yes, always' 'Yes, most often' 'yes, but only now and then', and 'No, never'. A mean score of women's individual answers is created [28] where the maximum score is 30. Women with a score of 16 or greater are considered to have freedom of mobility.

Based on results presented in Table 33, women interviewed within Pathways program areas are increasingly mobile; this measure has improved substantially in all countries other than Malawi. However, even with reported increases in freedom of mobility, women beneficiaries in India and particularly in Mali still face significant constraints with respect to their autonomy of movement, with only 25% and 11% respectively having freedom of mobility. Even with this measure increasing for women collective members in most countries, the overall proportion of women with freedom of movement remains low, particularly among women in male-headed households, who face the greatest constraints with respect to movement. The percentage of women in male-headed households with freedom of mobility ranges from 9% in Mali to 52% in Tanzania.

In Tanzania, the percentage of women reporting freedom of mobility increased sharply, by half, to 66% of women surveyed (Table 33). As mentioned above, Tanzania was the only country in which over half of women surveyed in male-headed households reported freedom of mobility. However, when looking individually at the proportion of those who never have to seek permission to go to the 10 different locations asked of women (see country report), only in one instance– to the church or mosque – do more than half of women surveyed report the ability to leave home without permission. For all other destinations (e.g. to the market, to a female friend's house, etc.) the proportion or reporting they don't need to seek permission generally fell between a range of 20-40% - meaning in an overwhelming number of cases, women surveyed must gain permission in some form to leave the house for any reason. In qualitative interviews, women indicated they required permission from their husband to leave the house. This stems from a cultural norm in which a male's ability to control the mobility of women in his household is perceived as a signal to the community that he in control of the household, raising his standing in the community.

Table 33. Women's mobility

Indicator	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
OC 5.3: Women's mobility										
All households	10.2	46.4*	16.5	25.4*	47.5	46.3	4.3	11.2*	42.4	65.8*
Female HHHs	36.0	82.6*	48.5	58.3	66.4	46.4*	21.6	37.1	72.2	87.7*
Male HHHs	3.9	36.8*	6.6	18.2*	41.6	46.3	2.7	9.0*	26.8	52.4*

*Statistically different at least at the 10% level.

Indian women and men understand women's participation in economic and civic activities through Pathways and other endeavors to be positively correlated to increased women's mobility and access to markets, government offices, and financial institutions. With greater mobility to these

[28] The scores for women's mobility are calculated by taking the mean across women's individual scores. They are calculated using the following categories and score values from 3 (most mobile) to 0 (least mobile): "never" (3), "yes, but only now and then "(2), and "most often" (1) and "always" (0).

destinations, households become more accustomed to women moving about to other destinations. Women reported enhanced mobility to go to the block offices, health clinics, schools, banks, markets, and relatives homes, as well as forests these to graze livestock and collecting firewood and forest products.

3.11.3 Gender-based Barriers to Group Participation

To better understand changes to gender-based barriers to group participation, the surveys ask women who report their membership in an existing group in their community and the reasons for not participating as members. One potential response is that their sex disallowed their membership or participation. Across most countries a minority of women are reporting lack of access to community groups based on their gender, ranging from 0% of women in India to 40% of women in Mali (Table 34). Over the life of program, Pathways achieved mixed results with work done to lift barriers preventing women from participating in community groups. In Ghana and Malawi, the percentage of women reporting their sex as a barrier to group participation increased – although remain at low absolute levels of 20% and 14%, respectively. In Mali, there was no evidence that the relatively high rate of women reporting lack of group access due to their gender changed, averaging roughly 40% at both program commencement and termination. Promisingly, no women surveyed in India reported sex as a barrier to entry to groups. Women in focus group discussions in India reported more confidence in speaking publically during group meetings due to their enhanced awareness of financial and agricultural activities promoted by Pathways.

Table 34. Barriers to group participation

Indicator	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
OC 5.4: % of women reporting their sex as a barrier to participation in local groups										
All households	3.5	20.0*	10.6	0.0*	3.0	14.2*	44.5	38.3	-	-
Female HHHs	0.0	25.0*	10.0	0.0*	1.4	15.9*	40.0	61.1	-	-
Male HHHs	3.9	18.5*	10.8	0.0*	3.4	13.4*	44.9	36.6*	-	-

*Statistically different at least at the 10% level.

Some of the discrepancy between quantitative and qualitative data on gender equity may be due to misperceptions about the definition of an "empowered woman." A positive attribute in some communities, others say that they held negative views of empowered women before the project; empowered women in this view do not respect their husbands and go out to look for trouble, even though Pathways may also be credited with many positive changes for men and women in their community. Most men continue to see themselves as the heads of household responsible for making the most important decisions, even as they acknowledge that they engage in more joint decision-making at home. This is not surprising as attitudes about gender roles are embedded in local social norms and practices and the changes that Pathways seeks to encourage will take time to evolve within communities.

The Pathways approach in the five countries is to work with women, conduct gender sensitization and identify supporters such as gender champions in a community, and then allow community

members to drive changes. Male champions are expected to set good examples, such as assisting their wives in household activities such as child care. They are advocates for women's reproductive rights. They are also called on to assist in problem solving when needed with other men, such as conflict resolution. The qualitative data indicates that attitudes and practices are slowly changing in some households and communities. Men in many Pathways contexts are more reluctant to change then women. It may not be possible to say to what degree these long-term social changes have become embedded in local communities, but CARE staff believe that, since it is a community-driven change process, improvements in gender equality are permanent.

4 PROJECT MANAGEMENT

Pathways is a multi-country project that seeks to make technical improvements to agricultural production and marketing while promoting fundamental attitudinal and behavior change about women's roles and their rights in what are for the most part traditionally conservative and somewhat patriarchal societies in Ghana, India, Malawi, Mali, and Tanzania. This section presents findings regarding project staffing, partnerships, M&E, and exit strategies for each country project.

4.1 Staffing

By design, the Pathways project is a complex and comprehensive effort. Numerous outputs were planned in order for the project to reach the complex objectives. Collectively, the outputs put forth in the project design require staff with specific technical expertise, for example in agriculture, value-chain development, and gender equality.

Malawi

The project started off with a fair-sized staff; a team of eight that included four field officers, one for each targeted traditional authority. Over the course of three years, however, staffing levels varied. Approximately one year into implementation, Pathways lost three-fourths of its staff, and operated with a team of only three; a project manager, a business manager, and one agricultural coordinator. All three had to function as field officers in addition to their regular jobs, and there was no M&E coordinator or gender specialist.

Since February 2014, the project has benefitted from its own M&E coordinator, one field officer with agricultural and business expertise for every TA, an agricultural coordinator, a business coordinator, and a project manager. Interviews with all project staff show them to be highly committed to the project objectives. They are technically and professionally competent in M&E, value-chain, and agriculture sectors, and seem to enjoy experimenting with programming to see what works best.

Although Pathways is a gender-themed project, there are only two female staff members; neither are field officers. There is no gender specialist, and no other staff member has a gender specialization or hands-on experience in gender initiatives. In the past year and a half, and with the help of CARE headquarters, the project devoted significant time and resources to enhancing staff capacity in gender.

The Pathways project in Malawi faced continuous funding hurdles. Unlike other Pathways projects, Malawi is not an anchor country for the BMGF, resulting in a two-year project timeline rather than the five-year timeline in other countries. Although Pathways Malawi has been able to get funding extensions, staff and management was only able to plan one year at a time. Under the assumption that each year was the final year, the team focused on areas where results needed to be shown. As a result, they feel they have had insufficient opportunity to think creatively about how best to improve or adapt the project.

Mali

The management of CARE's Pathways project in Mali (Project Nyeleni) appears to be broadly satisfactory, with an effective and light team of three senior staff, supported by the finance and administration teams within CARE offices in Segou, Mopti, and Bamako. There is good interaction between the project team, implementing partners, villages, and government counterparts. Implementing partner effectiveness and workflow could be improved with inexpensive computers or tablets, and other office equipment. There may be a need to reassess the time allocation of staff in terms of support for the value chain approach, and possibly for advocacy on key issues for women's empowerment, such as land titling. The partner NGO senior field personnel are very knowledgeable and passionate, and it is to the credit of the project that they are creatively engaged in guiding planning and implementation activities. The value chain approach and national level advocacy are two issues that don't currently seem to receive a great deal of attention, and for the light staff of Nyeleni, it may be difficult to find time for reaching out to private sector and other actors to more thoroughly engage in this.

Tanzania

The project has a mixed record of achievement in its focal areas, and CARE staff and local government stakeholders identify management changes as the biggest obstacle to achieving project goals. There have been four Program Coordinators between 2012 and 2015, with a fifth Program Coordinator in charge of the project at the end of 2015. The quality of these individual managers has varied greatly, and implementation was further complicated with the departure of many CARE Mtwara staff in October 2014. The frequent change of managers and of management style has been confusing for the team and partners, and has slowed implementation. Staff, partners, and government stakeholders positively assess the current management of the project.

India

CARE field staff live and work directly out of each district of Pathways India. CARE personnel are also deployed out of the CARE's Odisha headquarters in Bhubaneshwar. This staffing set up enables a necessary direct and ongoing presence in the districts and also the ability to allocate specialized services to each district out of Bhubaneshwar. According to Pathways implementing partners and government stakeholders, CARE's technical staff provided valuable support, particularly in the gendered and equity approaches to rural livelihoods and in strengthening collectives. Each implementing partner indicates their own staff acquired these skills sets and this capacity will carry forward in their on-going work. Though some implementing partners already had strong technical skills in Pathway's agricultural production priorities (and CARE staff learned from these partners), others significantly benefited from CARE's agricultural expertise. Some CARE implementing partners indicate the program review and planning sessions with CARE Pathways were not sufficiently participatory. Enhanced participation could have strengthened the timing and efficacy of some Pathways training and program priorities. However, CARE Pathways staffing levels and technical expertise were sufficient to bring successful program results.

4.2 Project Design and Implementation

Malawi

The Pathways program has been continually evolving since its inception. When the project first arrived in Kasungo and Dowa districts (2012), there were many existing programs (funded by CARE and other institutions) that overlapped with a number of initiatives called for in the Pathways global design document. These included VSLA groups, post-harvest projects, and nutrition projects. As a result, Pathways selected the value chain approach as its key intervention.

According to key staff, while the in-country focus helped the Malawi team determine what type of initiatives to implement, the same type of evaluation and adaptation was taking place in the other five Pathways countries. As a result, the global Pathways program was a bit disjointed; each country was implementing projects they were comfortable with and there was no coordination or real similarity across the six countries, despite the global framework.

At the 2013 annual meeting in Ghana, Pathways country teams discovered that the agricultural production, marketing, and nutrition program components were doing well in most countries over that first year, but the gender component was struggling in all countries. A gender specialist from headquarters delivered tools for monitoring household influence and the enabling environment, and in 2014 spent considerable time building gender awareness among staff and providing hands-on practice implementing participatory gender dialogues. Additionally, the whole team was deeply involved in the internal midterm review, which specifically examined intra-household and community-level changes. Staff members report that being involved with the analysis for the midterm was a turning point. According to Pathways staff (in Malawi and at headquarters), after these adaptations to the program and the intensive awareness-building exercises, the team had more clarity about how to approach gender.

The project team would have liked to see more engagement with climate resilient agriculture. Each year brings problems with rain, drought, and hailstorms, yet there is insufficient budget – including for staff time – to attempt to address it. Pathways Malawi is making a solid effort to learn from the oversight and by early 2015 was filling some of the gap with complementary programming funded by the Margaret Cargill Foundation.

Tanzania

Project designers, project participants, and other stakeholders state that Pathways identified the right activities, in part because CARE had adequate time to design the project. National and district government partners have recognized the innovative approach of Pathways for its accomplishments with women in agriculture in southern Tanzania. CARE was invited by the Ministry of Agriculture to mount an exhibit at Nane Nane, the regional agricultural fair, in August 2015. The Pathways program coordinator has co-hosted and been invited to government forums on gender; for example, one presentation given by the program coordinator to the Agricultural Stakeholders Forum in 2014 was the sole presentation on gender. The Ministry of Agriculture also referred Irish Aid to CARE when Irish Aid was conducting its assessment of involvement of women in oil seeds in 2015.

However, project managers acknowledge that more emphasis was given at the beginning to increasing agricultural production and that gender only became the focus of the program much later. Why this happened is not clear, as many former staff had departed. This provides a critical lesson for a program that is entirely focused on women's empowerment. CARE needs to ensure that the staff responsible for implementing the project are thoroughly grounded in, and comfortable with, the gender equity goals of the project as well as the more technical aspects of agricultural production. The project deserves credit for addressing community resistance to re-envisioning gender norms by introducing male champions as volunteers. Given that many of the gains in gender have been made late in the project, and that there was some unanticipated community backlash to working only with women, it is reasonable to expect that the gains could have been much greater if they had been given equal emphasis with agriculture from the beginning.

Mali

The organization of the levers of change may not have been optimally designed in order to foster a shared vision and clear reflection and monitoring. Some might argue that having "access" as a separate lever will emphasize the importance of a value chain approach, but this does not seem to have worked very well in Pathways. Under the productivity lever, the project includes the issues of diversification, post-harvest transformation, and income, which are closely related to the themes of markets and credit and agricultural inputs. There is a risk that fragmenting these implementation components may prevent joined-up thinking and weaken the overall approach. Another design issue is that the environmental aspects of Pathways are understated and could be more elaborated and made more visible. The strength of CARE Mali's program approach is that the boundary between projects is not as pronounced and it becomes more feasible to mix and match aspects according to need and donor interest.

Another lack of clarity is how the inputs of Pathways integrate with other projects and are distinguished in terms of their relative contribution to outcomes. While Pathways (Nyeleni), PEF, IFONS and other projects appear to have excellent working relations, a lack of clarity exists from the standpoint of learning from a given intervention and demonstrating to a given donor the relationship between the resources they have provided and a given set of outcomes. Rather, the Pathways Change Levers – or project outcomes – are somewhat confusing in terms of how they differ and what is included in each. There isn't a natural logic that enables one to organize and categorize activities, and what Pathways Mali was reporting under a given Change Lever was not entirely consistent with the global project design. Though not necessarily a problem for the program, it is always better to have a coherent shared vision, to allow for a participatory reflection process that draws on project results to feedback and reinforce the design and plans. This also allows for more clear reporting, in which stakeholders all know what to expect and can compare activities and outputs against a clear and consistent framework.

CARE's gender strategy combines empowerment and economic advancement, and this has evidently paid off, laying the basis for many breakthroughs.

India

Participating Pathways women ranked "access to and use of savings and credit" and "support to

strengthen SHG governance and management" as the most effective Pathways activities as part of a program effectiveness ranking exercise. This is not surprising given the centrality of working through collectives to achieve Pathways social and economic empowerment results. The third highest ranking for women is "sensitization on gender relations".

Sustainability of Pathways strategy and activities: Most importantly, women are organized, earning income and advocating for their rights. Men are increasingly recognizing the value of sharing the decision-making and involvement with women in economic and household activities. Women are becoming increasingly more involved in linking to government strategies and interventions designed for poor rural farmers. Alcohol misuse and gender-based violence is down and communities are more strongly mobilized against its resurgence. In the agricultural realm, animators represent a new cadre of community organizers that will be engaged into the foreseeable future. Agricultural kiosks are thought to have great potential as centers of market information, reasonable prices for inputs, and technical assistance if they are profitable into the future. Kitchen gardens and the importance of the nutrition of products coming from these gardens are likely to be sustained, and they are beginning to stretch into the summer season. Farmers have sustainably incorporated row cropping and seed preparation into their cultivation practices. However, all agricultural activities have limitations due to the persistent water problems faced by poor farmers.

Ghana

CARE Ghana was unable to implement the full project package as designed because the Gates Foundation funding was less than requested. As a result, some technical pieces could not be implemented, including work with national gender networks and opening up maize and guinea fowl value chains to women. The project's lack of funding to implement some key aspects is unfortunate, especially as Pathways is the only project that targets women in agriculture in northern Ghana.

Despite the financial limitations, Pathways Ghana has introduced some innovative approaches. One of the most successful is the Talking Book, which uses 20-minute recorded messages timed to seasonal practices as a basis for group discussions. The book is particularly useful in reaching non-literate participants. Other challenges not envisioned in the design were access to ploughing services for women, which Pathways addressed by introducing zero tillage. Climate change activities were not in the original design, though the PPT includes information on weather pattern so farmers can plan, and encourages short maturation varieties, and looks at moisture retention technologies. However, CARE Ghana will work on Climate Smart Agriculture in Phase 2 to better respond to farmer concerns and needs around climate change. The introduction of gender champions has been successful, to the extent that some people are seeking counseling on domestic issues from them. This led the gender champions, initially all men, to request that women also be recruited to help address sensitive gender-specific issues. The project envisions linking farmers with private input suppliers, but identifying reliable suppliers who provide services on time to the remote northern communities has been a challenge that the project continues to work on.

4.3 Monitoring and Evaluation

Tanzania

CARE Tanzania intensively monitors and reports on the Pathways project through five major tools: 1) a monthly activity report tracks outputs and expected outcomes; 2) monthly progress reports are used to determine if an activity is going according to plan, and to identify and address issues that arise; 3) the Participatory Performance Tracking tool tracks the adoption rate of improved agricultural practices; 4) an Annual Report that comprehensively presents quantitative and qualitative monitoring data, challenges, and plans, according to change levers; 5) the Cohort Monitoring Study, which interviews 78 households in five villages annually covering all the five levers of change.

In addition, the FFBS collect information on how techniques were applied, challenges, and what the project will do differently. Project marketing tools include an estimation of production and data on yields; seed reserves and sales; buyer lists; and profit and loss reports. The VSLAs collect information on member shares, and how much money members receive at end of each distribution cycle.

CARE Tanzania is making good use of its M&E system to ensure that it is reaching targets as planned, to inform program planning, and to understand what is working and what is not and why. Staff use the progress reports to analyze interventions and to identify alternative interventions. There are quarterly, semi-annual, and annual meetings with partners. Pathways management reports that the project has derived a lot of learning from Pathways models given that gender in agriculture is a new approach in CARE. CARE Tanzania has faced some management challenges with M&E staff; the Pathways M&E person left in October 2014 due to a fraud issue and only replaced in July 2015.

Ghana

The Ghana Pathways project has a real need for usable monitoring data. Several data collection methods are in place but vary in their usefulness. Project staff cited long delays (from 6 months up to a year are not uncommon) between data collection and reporting and results that serve only to 'validate' what they already know. Pathways staff suggested adopting the PROMISE system of "PIMs and POMs" (Project Impact Matrix and Project Outcome Matrix). This could provide the needed detail in a timely manner for Pathways, and allow project staff to regularly know if they are on, or off, track in terms of project performance and targets. The M&E uses multiple processes to collect data and provide feedback.

The Participatory Performance Tracker (PPT) is used annually to track agricultural production performance. PPT uses closed-ended questions and collects data through group interviews with farmers. PPT1 covers pre-sowing through the vegetative stage of the cultivation cycle, and is followed later by PPT2, which assesses the harvest and post-harvest and collects information around Good Agricultural Practices (GAPs), gender, savings, and marketing.

The Annual Review study (ARS), is conducted on annual basis to generate an overall snapshot of program progress toward target outcomes. The ARS uses a mixed method approach to capture

information from a cohort of selected participating households. For the quantitative exercise, a subset of questions from the baseline survey is adapted to monitor progress of performance indicators among targeted households, collecting survey data from female and male household heads.

Informal monthly monitoring includes unstructured observations completed by program officers and field facilitators. Although this process does not have a formal format, is works well and provides staff with timely results. Initiated in August 2015, the Activity Reporting Template tracks outcomes and challenges. It is, in effect, a more formalized version of informal monthly monitoring. The process is intended to facilitate smoother writing of annual and quarterly reports and to identify key issues in the field sooner. Results have yet to appear. This process does not have a mechanism to aggregate results and provide reports back to program officers and field facilitators. Lastly, Cross-project Sharing takes place every two months. Field personnel from all CARE Ghana projects meet to share project lessons and best practices. Participants indicated that the time frame and feedback are appropriate, but the meeting could be completed in less than five days.

Malawi

Although the project struggled with M&E in its early stages, at times with no lead staff M&E position, the project currently has good M&E capacity. Staff appeared highly motivated to learn about and apply best M&E practices. Project monitoring documents are up to date, annual reports provide a good level of detail, and cumulative targets are very well set for the majority of outcome indicators. A few targets are set lower than what would seem necessary to achieve more impressive outcomes (e.g., 5% increase for attitudes expressing gender-equitable roles and attitudes rejecting gender-based violence). TANGO did not receive any cumulative targets for impact indicators, and thus can make no comment on how they are set. The result framework demonstrates good causal logic, with indicators that clearly relate to the outcomes under which they fall.

Two components of Pathways' monitoring for learning efforts are worth highlighting: annual review studies and progress markers. Annual review studies were conducted each year of the program with a small sample of project households. The in-depth studies track the progress of one woman and one man from the households using questions from the baseline survey tool. Additionally, key photos are taken each year that offer a visual record of progress in areas such as crop storage and asset purchase. The exercise served to strengthen quantitative skills of Pathways staff and helped staff reflect on the factors that contribute to or prevent women's empowerment.

The project set up Progress Markers following the internal midterm review. Using Outcome Mapping methodology, Pathways initiated participatory sessions to come up with a set of specific, achievable, and progressive statements of behavioral change desired by project participants themselves. The statements are aligned with the M&E framework, but are more tangible to program participants and staff than some indicators. The progress markers are not measured by targets but on behaviors that participants themselves and field staff can observe. The exercise served to strengthen qualitative skills of Pathways staff and helped staff know what to look for in the field to get a sense of whether Pathway's gender equality efforts were on track.

Mali

Some aspects of the M&E system are working well, such as the participatory performance tracker (PPT), which feeds into a dynamic learning practice among project stakeholders. One limiting factor within this PPT is that it reinforces a focus on the few selected value chain products that are supported by Pathways, such as millet, rice, and shallot, whereas in a given village the VSLAs may be more occupied with the production of peanuts or sesame. The system does require significant data input, and the needed equipment for doing so is only found at the level of partner coordinators rather than field staff who could be inputting it.

The project goals and commitments vis-à-vis donor requirements are not very clearly set out in a results framework which is harmonized with the global Pathways program, thus it is not clear whether all partners are using the PPT to work towards specific goals. That is, however, a secondary consideration, if the project has made important advances in the existing impact area. The geographic scale is not inconsiderable, as the locations are very remote and security concerns have been hugely important over the past four years.

India

The monitoring and evaluation framework for Pathways India is sufficiently detailed and structured to provide indicators of important program activities tied to and leading to indicators for result impacts. The framework enabled reporting for Pathways to make informed and evidence-based decisions and program adjustments leading to results.

Pathways India developed "Progress Markers of Outcome Challenges" in 2014 through a participatory process with the impact population and other stakeholders in their local communities. The outcome challenge for women was "A woman independently makes decisions for her household. She is able to travel from her village and regular access to institutions like the bank and market as well as opportunities to expand her skill level. She is economically independent and communicates freely with anyone. Her decisions are fully recognized by members of her household. She may occupy a leadership position in her household." The outcome challenge identified for men was "A man consistently and voluntarily engages in domestic tasks. He wakes up early to help his wife with household activities. He does not drink alcohol and commits no violence against women." Categories of progress marker statements were categorized by what the impact population would *expect, like,* or *love* to see. This participatory process provided a useful framework for the final evaluation to assess progress from the perspective of priorities identified by the impact population and other stakeholders close to this population.

4.4 Partnerships

India

The Pathways project's implementing partners in India reflect a wide diversity of experiences, strengths and weaknesses, though the relationship has been mutually beneficial. For example, implementing partners have gained from CARE's experience with, and strong capacity in, gender and management of collectives. CARE has gained from the expertise of its partners in agricultural

development and working with Scheduled Caste and Scheduled Tribe communities, particularly those in relatively remote areas, and in their forest livelihoods.

The CARE Pathways program has strong complementarity with the Government of India's priorities, including increasing production, promoting savings and loan programs through collectives, initiatives to address adverse consequences of climate change, and social-cultural norms that are harmful to women.

At baseline, government extension workers were limited in number, and focused on the needs of men and larger more productive farms in project districts. Pathways helped officials better understand the realities and limitations of very poor farmers – and especially female farmers – by involving agriculture and forest officials in Pathways training, both as presenters and participants. In particular, government partners consider Pathways' gender focus as particularly effective.

Some government officials indicated they were not very clear about the overall scope of Pathways and its impact. In some cases, government partners have not been able to move much beyond building awareness of issues of importance to Pathways, such as women's empowerment strategies, and towards actual Pathways outcomes because of their own internal challenges and limitations. That is, a longer-term bureaucratic process can potentially detract from other Pathways priorities.

Some implementing partners consider Pathways to be too training-intensive at times and the paperwork excessive, which detract from project implementation. Meetings should promote enhanced participatory interaction in order to facilitate discussion and sharing of ideas and experiences, lessons learned, and project course corrections.

Tanzania

Challenges with partners arose that were not anticipated during the design stage and that occupied management time and slowed implementation. Initially, Pathways intended to use VSLA groups formed by the Aga Khan Foundation, which would have allowed CARE to focus on its key technical areas. However, differences in approach between the two organizations led CARE to look at forming its own VSLA groups. This slowed implementation of the technical aspects of Pathways, as CARE had to wait for people to obtain capital from the VSLAs to invest in agricultural inputs. The issues with Aga Khan Foundation were eventually resolved but CARE has continued to form VSLAs, partly due to donor requirements and partly to ensure that the project is reaching its target population of poor female farmers.

Relations with the District Commissioner and the district agricultural staff are good and the current manager has done much to improve relations and ensure timely implementation, which is appreciated by DAD staff. CARE staff experienced some challenges with DAD because Pathways did not channel its resources through the department. Both sides report that cooperation has improved as the project has shown results. CARE management felt that it could have made a more deliberate effort to involve government from the beginning, and the project management in place at the time of the endline survey had worked to improve communications and to keep government informed about project activities.

However, the project has operated largely on its own, and the proposed integration with government, and thus the sustainability of project activities, has not realistically taken local government resources and constraints into account. For example, a key strategy in sustainability is to integrate the community paraprofessionals, who are responsible for organizing and training participants, into the DAD. However, DAD personnel believe that they currently lack the financial resources to absorb the paraprofessionals, even while recognizing the benefits of doing so. Another strategy is to have people pay paraprofessionals for their services, but that requires that paraprofessionals have continuing access to additional training and new knowledge. Community members value paraprofessionals but it remains to be seen if community financial support is a viable option. The loss of the paraprofessionals would be a loss to female farmers as government agricultural strategies tend to be gender-blind. Local agricultural officials stated that they appreciate the approach emphasizing women in agriculture, but do not have a lot of capacity to integrate a gender-sensitive approach into their own programs. In short, the project needs a detailed exit strategy that can focus on strengthening existing linkages between participant needs, private sector interests, and government service providers.

Ghana

The Pathways project has good working relationships with its government and non-government partners. The project collaborates with the Department of Agriculture in MoFA, which considers CARE a good partner that involves them and keeps them informed of Pathways progress and ongoing activities. MoFA staff state that they were involved in project design and the initial mobilization of communities, establishing the layout of demonstration farms, and guiding farmers on the timing of inputs. Pathways staff also works to engage government staff, consulting with them regularly and inviting them to participate in reviews and to give feedback. CARE aims to integrate Pathways activities into MoFA after the project ends. MoFA would provide technical training to CBEAs. MoFA has few staff and currently uses the CBEAs for mobilization when MoFA has messages to pass to the communities, and schedules its extension agents meetings to coincide with VSLA meetings so it can meet as many farmers as possible. MoFA also noted that the VSLA helps farmers to repay input credit from MoFA on time. Presently, CARE does not have an MOU with MoFA but is considering one for future activities.

CARE has also worked with the District Assembly in Garu-Tempane district, providing financial support to its Medium Term Development Plan and playing an instrumental role in making community development plans and budgets more gender-sensitive, according to DA members. CARE is scheduled in early 2016 to provide gender training to all DA members and heads of departments, which will include training on women's land rights, and increasing awareness of how to make the regulatory environment more favorable for crops grown by women (e.g., the government fertilizer and seed subsidy program). CARE is also engaging with other government bodies, including the recently formed Ministry of Gender and Child Protection. CARE is a member of a Gender and Social Protection Working Group chaired by the Ministry of Gender and Child Protection that will engage with the Ministry on issues around women's rights.

Another important partner is PRUDA. Project activities in Lambussie-Karni district are implemented by PRUDA, a local NGO, under an annual contract with CARE. PRUDA performance is

good and they have completed all their work on target, and are trusted by the communities. PRUDA also considers CARE a good partner. PRUDA was working on four CARE projects at the time of the endline, and its association with CARE has enabled it to attract new partners, though this has also put pressure on PRUDA to handle more activities. CARE audits PRUDA regularly and has an independent audit annually. PRUDA notes that meeting demand for services is a major challenge as Pathways has limited funds and many communities want to join the project.

5 CONCLUSIONS

5.1 Overall Impact: food security, economic security, livelihoods resilience, and women's empowerment

The regions in which Pathways operated are characterized by extremely challenging food security conditions, afflicted by severe chronic malnutrition, protracted dry spells and poor staple crop production – particularly, in Ghana, India, Malawi, and Tanzania. The incidence of drought in the program areas of these countries ranged from 53% (Malawi) – 88% (Ghana) of households.[29] Ancillary and covariate effects of drought manifested as reported sharp increases in food prices, ranging from 48% of households in Ghana to 79% of households in Malawi; epidemic disease (biological shock) – 36% of households in India to 75% in Ghana; and, chronic illness – 22% in both Malawi and India to 41% in Tanzania. To put into additional context the gravity of the food security situation in these regions, the average number of shocks out of 10 experienced by households surveyed in these four countries ranges from 3.4 to 4.0, with this measure doubling or more than doubling over the life of the program in all of these countries other than Malawi, which increased by 30%.

Not surprisingly, households in these regions were forced to resort to a wider range of coping strategies to deal with the higher rates of shocks plaguing these areas. Of the eight food reduction consumption coping strategies measured, the prevalence and use of all eight increased sharply for households surveyed in Tanzania and India. In Malawi, the use of these food reduction strategies increased, yet remained at generally low absolute levels of 2% to 13% of households measured. While there was not much observed changed in Ghana, levels remained generally high with roughly half to two-thirds of households engaging in six of the eight strategies.

Households in Ghana and India were particularly susceptible to the necessity to resort to detrimental non-food consumption strategies. Of nine negative coping strategies measured, 30% to 82% of households in Ghana were forced to utilize six – by taking a loan with interest (82%), pledging labor/crops/livestock in advance (54%) and selling livestock being among the most frequently employed strategies. Half (52%) of the households in India pledged their labor/crops/livestock in advance, one-third (32%) took a loan with interest, and nearly one in five (17%) households slaughtered animals. Tanzanian households experienced a sharp increase in all of the negative non-food consumption strategies; however, the absolute utilization rates remain low with no more than 22% of households engaged in any one strategy, and less than 10% of households reporting use of most strategies.

Given this contextual backdrop, it is remarkable that positive impacts in household food security were recorded in Malawi and India. In the program areas of these two countries, the average number of food groups consumed by households surveyed increased by 0.7 – 1.3 food groups,

[29] Households surveyed in Ghana were asked if they had experienced drought *or* flooding as a single question, while in all other countries surveyed drought and flooding/heavy rains were identified as separate events.

respectively. In Ghana and Mali, food security as measured by HDDS did not exhibit any change while in Tanzania the average number of food groups consumed by women fell.

The poor results in Tanzania were driven by a mix of a poor rainy season in the year (2015) leading up to the endline survey, combined with the inability of the project to tackle the persistently high rates of chronic malnutrition in children under 5 pre-existing in the southern regions of Tanzania where Pathways operates. In Ghana, Mali, and Tanzania it appears women in the household are consuming less diverse diets than men – roughly half, .4 - .6, food groups less, which is a meaningful difference.

In Ghana and Mali there are not any specific food groups that appear to be driving this intra-house hold disparity, perhaps with the lower score for women reflecting an overall lower quantity of food consumed by household women vis-à-vis males in the household, in these two respective regions. In Tanzania, women appear to be substituting meat for fish, eating more meat and less fish than their male counterparts in the household – and on a positive note, much of the difference in women's dietary diversity noted in Tanzania appear to be driven by less consumption of fats, oils, sugars, and condiments compared to other household members.

Changes in economic wellbeing over the life of program tell a mixed story regarding the performance of programming aimed at improving household income. One area that achieved success is in Malawi, where average per capita monthly incomes increased 50% to $17.38. Malawian households surveyed also reported strong growth in per-capita expenditures (38% to 27.02), growth in household asset stocks (106% growth in mean asset index), and exhibit nearly universal levels of savings (93%). This performance in Malawi is particularly impressive given an environment in which inflation levels were increasing at greater than 20% annually (income and expenditures are reported in real terms), putting severe pressure on household purchasing power. These increases in economic wellbeing of beneficiaries in Malawi may explain the relatively low frequency of households having to resort to food reduction and long-term detrimental coping strategies in the face of a myriad of climactic, economic, and biological shocks.

Households in both Tanzania and Mali exhibited strong growth in average monthly per capita expenditures, however there was not any clear evidence to support that this represented improvements in household earning power for beneficiaries in these countries. Monthly per capita expenditures grew 49% in Mali to $19.59 and in Tanzania grew an impressive 132% to $38.01. Alternatively, per capita income and assets did not appear to increase over the course of the program. In Mali, average assets and rates of savings actually decreased rather sharply - average assets declined 26% while the proportion of households with savings dropped from 34% to 5%.

In India, income exhibited no change; however, surveyed beneficiaries reported increases in monthly per-capita expenditures by 12% to $19. Contrary to Tanzania and Mali, there was some evidence that this growth in expenditures proxies for increases in economic wellbeing. Average assets grew 15% and while the rate of saving fell, nearly two-thirds of surveyed households (57%) continue to have the capacity to invest in some form of savings. In the face of a bevy of shocks, it is encouraging that Indian households exhibited this growth. Taken in combination with the strongest uptake across Pathways countries of adaptation strategies to shock – 73% investing in savings,

58% using drought tolerant crops, 42% invested in irrigation, and 38% diversifying income generating activities – this suggests that households in India improved resilience and might sustain improved rates of growth in income and assets necessary to cross over the poverty line.

Per-capita income and expenditures appeared to grow for households in Ghana. However, the limited sample sizes collected do not provide sufficient power to detect meaningful change in these measures.

The empowerment of women, as measured by CARE's women empowerment index, improved across all Pathways countries. The strongest increases were reported in Mali and Tanzania, with the mean score (scale: 0 to 100) increasing from 0.32 to 0.46 in Mali and from 0.59 to 0.72 in Tanzania. It should be noted that even with the strong increase cited in Mali, absolute levels of empowerment in this program region are relatively low, with only 7% of Malian woman achieving empowerment scores of 0.8 or greater (the threshold for achievement or empowerment as measured by the raw index score). Alternatively, 43% of women surveyed in Tanzania achieved an empowerment score of 0.8 or better, suggesting they are empowered. The gains seen in Tanzania and Mali were achieved in domains related to shared input in household decision making; ownership, purchase and sale of household assets; control over household income and expenditures, and self-confidence.

Nearly four years after introducing Pathways in the countries of Malawi, Tanzania, Mali, Ghana, and India, CARE and its implementing partners have successfully achieved most of the objectives of this highly ambitious project, including the five change levers of the project:

- Capacity – improved knowledge, skills, relationships, self-confidence, and conviction of women farmers: excellent progress
- Access – increased access to productive resources, assets, markets, and appropriate and reliable services and inputs for poor women farmers: very good progress
- Productivity – improvement in yields and incomes through adoption of sustainable and intensified agriculture and value addition: some progress, but deflated partly because of various environmental shocks
- Household influence – increased poor women farmer contributions to and influence over household income and decision-making: very good progress
- Enabling environment – more positive and enabling attitudes, behaviors, social norms, policies, and institutions – excellent and for some social groups and institutions, sustainable progress

Designed, developed, and implemented within highly patriarchal social-cultural contexts in each of the five countries, where women's access to and control over productive assets and resources have been highly constricted, Pathways has successfully if modestly undertaken and attained measured progress toward attaining the simultaneous empowerment of women economically and socially. This is an important project for women in each of the five countries.

Female and male participants perceive that their households have improved their wellbeing after participating in Pathways activities.

Pathways women have increasingly enjoyed a degree of economic and social empowerment; progress and positive change toward women's empowerment, however, is a very slow process. VSLA and SHG activities have undoubtedly contributed to women's increased participation in decisions about producing and expending household income as well as decisions about roles and divisions of labor within the household and participation outside of the household. VSLA formation has served as an excellent entry point for other Pathways activities and women participants offer positive role models in communities in each of the five countries. Communities have experienced enhanced discourse about patriarchal roles, relationships, and practices. Women cite their VSLA and SHG involvement as a gateway toward more equitable household decision-making and a greater voice inside and outside of the household. But this is a long process; Pathways has only begun this process.

6 RECOMMENDATIONS

The Pathways concept provides a good model that should be carried forward, either as a continuation of this project or in future projects. Based on the findings of the final evaluation, this section provides recommendations by each country for either an extension of the current project or new projects based on the Pathways model. The section commences with a few global recommendations, if there is to be Pathways 2, by applying some of the lessons outlined above in the body of the report. Some overarching themes and patterns across the five Pathways countries contribute to the reflections presented as suggestions below.

GLOBAL SUGGESTIONS OR RECOMMENDATIONS

Refine some impact and performance indicators to measure outcomes in the Theory of Change.
Although it may be desirable to simplify the Pathways Theory of Change to more clearly illustrate the intended pathways toward sustainable women's empowerment economically and socially (see Recommendation 1 for Malawi below), the TANGO team does not have a recommendation devoted to changing the TOC (and such an endeavor would undoubtedly require the major portion of a workshop). Most of the outcome indicators currently used to measure TOC impact are apropos and do not require adjustments. But some changes are in order to measure change more precisely, including:

- Drop the "per capita monthly household income" indicator and perhaps the "per capita monthly household expenditures" indicator as TOC impact indicators. Household income is a notoriously poor and unreliable indicator for measuring income because households invariably understate their incomes. Expenditures represent a better proxy for income but have reliability problems also. Household expenditures exceeded household income in all of the five Pathways countries at endline. The analysis of economic success versus failure really depended on which indicator to use. Both indictors were replete with respondent errors and non-responses. There are better proxy indicators for income. "Mean asset index" is a useful indicator to measure livelihoods resilience; it is also an excellent proxy for household income. For the Pathways program, "# of income sources" and "# of women earning farming income" as well as "% households accessing formal credit" vs. "informal credit" are excellent economic indicators.
- The two food security indicators are appropriate, but add "# of months of food provisioning"; currently, food access is the only aspect of food security that is measured.
- CSI and adaption strategies are appropriate resilience indicators but should be augmented by new indicators to take advantage of recent improvements in resilience measurement, which has advanced significantly since the Pathways M&E plan was designed. For example, TANGO has created a household resilience index, calculated using Principle Component Analysis and comprising three indexes – absorptive capacity, adaptive capacity, and transformative capacity – as inputs. Such an index could be modified for a future Pathways-type program.
- Tweak and simplify the women's empowerment index and contextualize to more effectively track TOC outcomes. For example, the autonomy indicator is not very useful and can be

jettisoned; the same holds true for the leisure time indicator. Other indicators can be simplified. The weighting of the indicators should be amended (for example, the time indicator should not be weighted the same as the other indicators). CARE-Pathways could adjust the WEI to more accurately and appropriately reflect the Pathways rural contexts.

- Redesign, shorten, and simplify the household survey questionnaire. Long and complicated questionnaires are subject to problems of validity and reliability stemming from respondent fatigue and enumerator error. Some of the questions in the questionnaire were overly complicated and subject to misunderstanding.

Use the strengthened collectives to expand women's access to formal micro-finance institutions (MFIs) to increase their capacity to invest in income generating activities – IGAs. VSLA and SHG formation has served as an excellent entry point for other Pathways activities and women participants offer positive role models in Pathways communities. VSLA and SHG involvement has allowed women to be more frequently included in household purchasing decisions. Household members consider it a benefit to the household when women are able to save and access credit. VSLAs have increased women's confidence. Their households have benefited from VSLA assistance by enhancing agriculture and livestock productivity in and around their homesteads over which they continue to have more control. Accessing sufficient credit to invest in productive enterprises, however, remains problematic. Few Pathways participants access credit from a formal institution in any of the five Pathways countries. At some point, households seeking investment and income enhancement opportunities will need to seek service from the formal financial sector. Depending on the country and context, it may be feasible to devise a strategy calling on farming households collaborating within collectives to provide collateral for each other to access formal loans.

Enhance financial management and leadership training as well as numeracy and literacy training for women participating in VSLAs and SHGs in order to increase their business skills and acumen. Focus group participants throughout the five countries reiterated that education – and in particular, literacy training - are key factors limiting women's participation, particularly in positions of leadership. VSLAs and SHGs that have successfully promoted women who have been trained into leadership positions are successfully progressing and may be sustainable. One weakness preventing sustainability is women's lack of the financial skills to properly manage savings and invest resources effectively and efficiently. Scaling up literacy and numeracy initiatives as well as entrepreneurship capacity and negation skills will multiply program impact and maximize the integration of other project activities. For those Pathways countries that have instituted such training, follow-up and more extensive approaches are necessary in future programs to sustain these skills. Creative means of delivery could be explored. Numeracy skills could be disseminated through extension services, teachers, or other types of community extension workers.

Develop an effective value-chain strategy to integrate into a Pathways-type strategic programming approach. Such an effort would require intensified business training for participating farmers within marketing and producer groups. Project staff would need additional training of their own to develop and understand the proper sequencing of marketing initiatives, including closing the information gap between producers and buyers such that producers understand market demand and how they are positioned to respond to that demand. The project would also need to emphasize

diversification and specialization to increase competitiveness and competitive advantages. Some country programs have done this but have been less successful in undertaking the linkages that require planning; human resource capacity; adequate, appropriate, and timely inputs; an effective production strategy; and successful marketing. Pathways should broaden its understanding of the production and marketing dynamics of specific products promoted in any value-chain strategy to ensure that product's competitive advantage. Such an approach therefore requires effective assessment work.

Promote gender sensitization training in conjunction with technical agricultural and business skills training for Pathways participants, including men, and field staff from the onset of any future Pathways-type program in order to maximize women's empowerment potential. CARE and partner programming staff, including government as well as NGO partners, should be sufficiently grounded in the gender equity goals and the patriarchal attitudes and practices blocking progress toward achieving objectives of the project. Men in particular require enhanced sensitivity capacity to work collaboratively with women at the household and community levels toward women's social and economic empowerment.

Consider incorporating a nutrition education component into the TOC and Pathways programming strategy. Dietary diversity scores only significantly increased in two of the five countries and significantly declined in a third Pathways country; women's intra-household food access actually significantly declined in two countries. The project has focused on food availability and access but ignored food utilization. This needed component would complement Pathway's promotion of increased food production by women by promoting more nutritious household diets.

Consider strengthening an access to land component. Customary Land tenure arrangements and the practice of land inheritance patterns vary substantially from country to country and may contradict legal land tenure and land inheritance laws. One common thread across the five Pathways countries is the patriarchal patterns of customary land rights, land tenure arrangements, and customary land inheritance patterns as practiced in rural communities. Access to good agricultural land has been a challenge for women in each of the five Pathways countries. The practical application of a programming strategy to promote women's access to cultivable land would vary by country and by region within each country, and may require an advocacy component to challenge customary practice vis-a-vis policy and law.

Systematically document Pathways impact on women's empowerment and the re-envision of gender norms through knowledge management. The Pathways program offers a unique and potentially powerful approach to increase women's participation in household and community social and economic life, including an effective roadmap toward women's empowerment. Pathways program offices have not sufficiently systematically documented the program approach or impact. Pathways could in the future adapt and improve on the effort of the sister WE RISE project to document progress through cohort case studies of ten women per country as a means of documenting Pathways participation and women's different trajectories toward empowerment status. The documentation could include specific guidelines on how to implement better practices. Strengthened knowledge management would include, for example, qualitative studies to examine

the relationships between household shock exposure, Pathways participation, and how Pathways interventions function in the face of shocks, which proved to be important phenomena affecting Pathways outcomes across each of the five Pathways countries. Strengthening knowledge management would also allow CARE to identify and advertise the achievements and outcomes of WE-RISE and therefore more effectively advocate for support of initiatives that could realize greater scale and impact.

Ghana

1. **Redefine the core impact group** using data from the survey, such as measures of food security. The current definition uses women's earnings, which are not measured. Measures of food security seem to be more reliable than income-based measures because there are fewer non-responses and less respondent reporting error. The large number of non-responses, and the small share of women reporting that they maintain financial records, indicate that they could be data quality issues with income-based measures.

2. **Estimate impacts separately** for the core impact group.

3. Build on successes of soya production and consumption and **establish market linkages**. Participants have also requested earlier access to inputs, better prices for inputs, and tractor or bullock services for tilling. Future projects should provide services and/or subsidies.

4. Given the importance of children's education, **introduce programming or funding to offset school fees or improve schools**. Consider as well the long-term benefits of having children in school and incorporate schooling into the long-term impact indicator. This could involve more in-depth research into the longer-term benefits of education and the institutional importance of schools.

5. Train women to improve basic numeracy and **build fundamental budgeting and accounting skills**.

6. Commission in-depth qualitative studies to **examine the relationship between household shock exposure, Pathways participation, and changes in Pathways impact indicators**.

7. Analyze baseline and endline data with respect to household shock exposure, and Pathways participation for a better understanding of **how Pathways interventions function in the face of shocks**.

India

1. **Strengthen the inclusion of sustainable water access in the project approach** to better assist poor farming households in their agricultural activities and thus livelihoods and resilience. Lack of access to water is, by far, the biggest challenge faced by the impact population and their communities. In most project areas the impact population and households are

dependent on rainwater for agriculture. In areas where infrastructure exists, much is in disrepair, not being utilized properly or poorer farmers have limited access. Increased access will enhance not only the primary paddy-growing season, but also second season farming and kitchen gardens, and agricultural production with greater commercial viability.

2. **Ensure better linkage of agricultural training and access to inputs**. The training farmers received in agricultural production was at times ineffective because there were not proper implements to increase production. This included seeds, use of fertilizers, insecticides, and pesticides. The timing of the training should coincide with the availability of inputs. Additionally, sometimes inputs were not provided at the time of the year needed for seasonal agricultural activities.
3. The exit strategy for Pathways should **include mechanisms for continued support to women's collectives and village organizing volunteers** such as animators and Reflect Circles, and advocacy for successful linkages to government schemes and support. These are all important project activities the impact population lacks confidence in their sustainability in a post-Pathways period.
4. Support is especially important to not lose momentum in **women's social empowerment.** CARE should consider means to include Pathways implementing partners by keeping them informed and involved in advancing the gendered approach to livelihoods resilience.
5. **Producer groups, income generating activities, and linkages to formal microfinance institutions need to be priorities** in the next itineration of projects for communities Pathways has been working in. Though there are examples of success in these activities, their overall impact of has been limited.

Malawi

1. **Strengthen the theory of change and use it to strategically sequence project activities.** The current theory of change may be useful for higher level stakeholders because it offers a broad overview of anticipated change, but the theory of change does not offer adequate detail to be useful at the field level. By having a detailed visual representation of the anticipated sequence in which change will occur, and a detailed visual representation of all of the factors that need to come together in order for change to occur, CARE could have a stronger communication tool to gain agreement among stakeholders about what defines success and what it takes to achieve success. A strong theory of change will help future projects identify the most strategic outcomes for interventions and most importantly, will help future projects identify the most strategic *sequencing* of interventions. All involved in CARE Pathways agree that the comprehensive gender approach should have been started much earlier than Year 3. This misstep could have been avoided had the program worked through the logical sequence in which change occurs in more detail, which in turn would have led to more effective sequencing of activities.

2. **Strengthen staff capacity in key technical areas prior to implementation.** Pathways Malawi management acknowledges that future programs could maximize project impact by building gender awareness among staff and giving them hands-on practice in implementing

participatory gender dialogues *prior to* starting any field work. In this way, staff will be better equipped to support volunteers to plan and implement gender equality discussions and activities designed to address gender gaps. Throughout program implementation, future programs could greatly contribute to staff capacity by involving staff in gender analyses and the setting of progress markers, as Pathways did at midterm.

3. **Continue to scale up the inclusion of men and adolescent boys in the empowerment strategy.** Toward the end of the project, Pathways began to intensify efforts to sensitize men and adolescent boys to gendered norms that contribute to inequitable entitlements between males and females. This was a significant turning point for the project. It is likely that impact could have been greatly increased had an inclusive strategy been used from day one.

4. **Place greater focus on marital status when designing and targeting specific initiatives.** Differences between females residing in male- and female-headed households should be noted and activities aligned to the circumstances of each. The initiatives Pathways began to implement after midterm show great focus on the needs of women in male-headed households; this focus is indeed critical to catalyze changes in productive decision-making and women's control of assets, expenditures, and income, and should certainly be a part of future projects. While it is commonly assumed that women residing in female-headed households have more autonomy in decision-making, Pathways results show 15- 25% of these women are not even making joint decisions on important issues, much less sole decisions. More research into who controls the decisions of women in female-headed households could help future projects design initiatives that specifically target these parties for inclusion in the gender dialogue sessions. Additionally progress for female-headed households in areas such as non-farm income, asset accumulation (especially land), and food access, could be enhanced if future projects take a more critical look at the factors hindering their ability to achieve equal status with their male-headed counterparts and specifically design initiatives to address these challenges.

5. **Expand training and follow up for business development skills.** Critical aspects of effective empowerment advocacy such as negotiation skills and small business development were not sufficiently addressed by Pathways. Training on these topics was not scaled out to most communities and typically was a one-off event. For these concepts to take root, reinforcement is necessary. Future training programs on business development should be strengthened and reinforced by offering refresher and follow-up sessions.

6. **Make changes to specific indicators that will allow programs to more precisely measure change.** The past four years of working with Pathways offers TANGO the opportunity to reflect on our own "lessons learned" regarding evaluation design for programs with a strong gender and agriculture focus. Several changes to current indicators or the survey would allow future programs such as Pathways to measure change more precisely.

Mali

1. Capacity
    - Develop exit strategy for VSLAs, taking into account their different roles
    - Bearing in mind that target group may have left out some in the past, help them think about playing a role in fostering improved livelihoods for a wider range of villagers
    - Develop a strategy for an interest group at village level to continue taking up the cause of the transformation of gender relations
    - Facilitating the engagement of empowered women in other projects in the villages, such as taking leadership roles in education, health and water supply projects
    - Explore the possibility of linking the gender education work with other local institutions that have a wider impact and may help, including revisit whether local institutional strengthening efforts can be undertaken through Pathways or other projects
2. Access
    - Work on a sustainability strategy for the *relais* to continue in their training and learning role, in conjunction with government extension officers or separately, with support from the villagers that they work with and ongoing stimulation and reinforcement from government and other development programs
    - Monitor the use of agricultural inputs and their profitability, and review existing channels and discuss with suppliers to see if more access can be extended including in challenging locations
    - Dedicate human resources and consider contracting consultants to help develop a more vigorous dialogue with the private sector, engaging in national markets or discussing with agro-enterprises about purchasing or out-grower arrangements.
    - Attempt to provide access to services (inputs, markets, extension) to project participants in a way that expands access for others as well, not exclusively for the beneficiaries
    - Consolidate the environmental aspect of the sustainable agricultural training and consider how to reinforce it within Pathways or parallel project, but still within the framework of livelihood improvement and local institutional development
3. Productivity
    - Follow-up the endline survey with monitoring of yields to verify if there are optimal yields being reached especially for rice, maize, and fonio.
    - Give more attention to post-harvest processing and linking it to a more dynamic approach to marketing, analyzing current practices for good examples and building on those
    - Conduct a more thorough analysis of appropriate crops and livestock for promotion in Mali, including the fish activity that was initially included in the Nyeleni design
    - Promote ongoing use of community storage and borrowing cereal stocks, building on the capacity of the VSLAs and networks, though investigate how to reach higher construction standards and safer food storage conditions

- Consider strengthening nutritional education and encouraging consumption of farm products, and incorporating it more explicitly into the project

4. **Household Influence**
    - Review the findings of their being a reduction in some of the domains of autonomy in female-headed households
    - Continue awareness raising of positive developments in land allocation to women (individually or collectively), documenting and disseminating the examples
    - Discuss further the arrangements in which men allocate marginal land to women and then take it back after several years of the women enhancing soil fertility, reallocating them to other marginal plots
    - One concrete step forward on the land issue could be a workshop organized with government and external agency counterparts, to engage chiefs, mayors and councilors in discussing land use for women, to promote more local titling arrangements which provide more stable access to women
5. **Enabling Attitudes and Institutions**
    - Document and share the good practices of men and women sharing household roles
    - Explore attitudes towards gender-based violence and consider how to take the next step in addressing it, both in terms of education and intervention
    - Carry out further discussions on women's apparent lack of mobility, determine if it is in fact a barrier to women in their businesses and farming activities, and undertake specific training on this topic which could be affecting the livelihoods of all household members

Tanzania

1. Integrate gender sensitization and gender equity with agriculture and market training from the beginning. Pathways managers acknowledge that the initial focus of the project was on improving agricultural productivity, and that gender equity was emphasized much later in the project. This provides is a critical lesson for a program that is entirely focused on women's empowerment. The gains in women's empowerment are likely to have been much greater if the two approaches were implemented in tandem, as intended in the design. Several critical training activities, such as those on women's rights to land and GBV, were not made available to all communities and were only one-day events that participants did not feel were sufficient. The strength of the Pathways concept is that it visualizes productivity and profitability, equity, and empowerment as complementary and mutually reinforcing outcomes that address the underlying causes of poverty and women's exclusion in agriculture. CARE needs to ensure that the staff responsible for implementing the project is thoroughly grounded in, and comfortable with, the gender equity goals of the project as well as the more technical aspects of agricultural production. Future projects should ensure that equity and empowerment are given equal weight with agricultural and market improvements.

2. Expand men's sensitization to and involvement in gender equity and empowerment activities. The survey data show that changes in men's attitudes about gender equity lag behind those of women, particularly around control of assets and income, decision-making

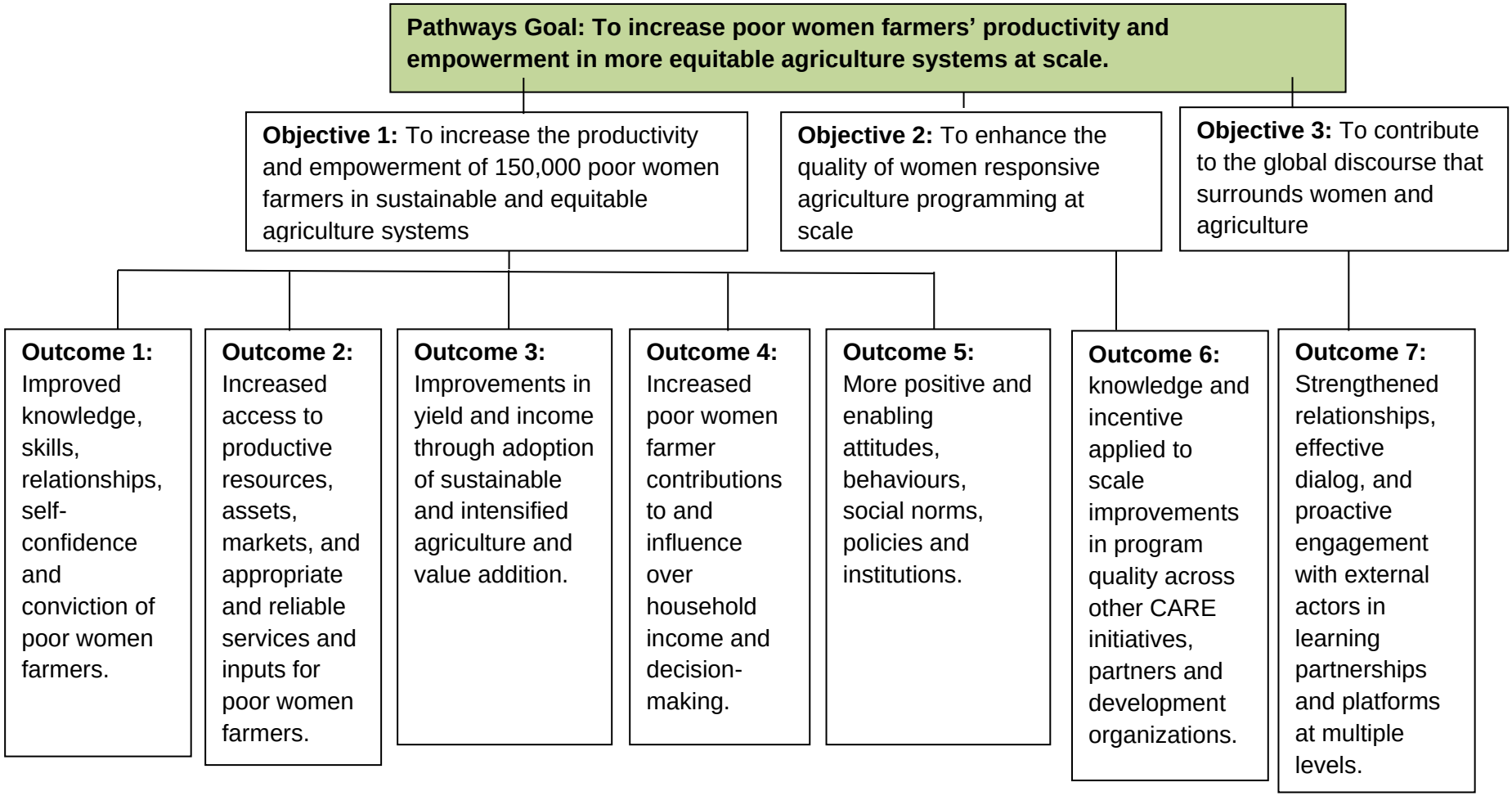
in the household, and on the mobility of women. In addition to emphasizing gender equity from the outset of the project, Pathways should focus more on sensitizing men to the negative impact of gender inequities on women, on men, and on their family life.

3. Strengthen marketing training and support to Market Research Committees. Pathways started training on marketing late in the project, in year 3. Market research committees are weak in a number of communities. As a result, some members are frustrated that they are not able to obtain better prices for their production and other group members continue to sell on their own. Training for participants on how to identify markets and expand access to local and national markets should be addressed early in the project, as women are receiving training on improved agricultural skills.

4. Expand training and follow up for entrepreneurial and business skills. There is significant interest in and demand for more training in entrepreneurship voiced by female focus group members. Given the frequent droughts and increased shocks in the districts, expansion of small business opportunities would help households to diversity their livelihoods and increase their resilience to future shocks. In order to make small business training more effective, Pathways needs to broaden its understanding of the markets for non-agricultural activities beyond tie dye, soap making and similar activities to ensure that women are reaching more markets and are not competing within their small village markets with the same products.

5. Plan with partners for exit from the beginning of the project. Pathways requires a detailed exit strategy that can focus on strengthening existing linkages between participant needs, private sector interests, and government service providers. This was undefined at the time of the endline. In particular, the project should address how to sustain support to the village paraprofessionals, who are highly valued by participants and are key to the success of Pathways. There are various proposals to do so, but those proposals need further development.

Annex 1: Pathways Results Framework



Annex 2: Pathways Common Indicator Framework

Results	Performance Indicators	Frequency	Source	Responsible
Pathways Goal: To increase poor women farmers' productivity and empowerment in more equitable agriculture systems at scale.				
Long-term impact: More secure and resilient livelihoods for households of particular segments of poor women farmers impacted through the goal.	Food & Nutrition Security • IM 1.1: Mean household dietary diversity scores • IM 1.2: Mean women's intra-household food access Livelihoods Resilience • IM 1.3: Coping strategies index • IM 1.4: % households adopting negative coping strategies in past 3 months • IM 1.5: % households using adaptation strategies to reduce the impact of future shocks • IM 1.6: Mean asset index Economic Poverty Reduction • IM 1.7: Per capita monthly household income (farm and non-farm) • IM 1.8: Per capita monthly household expenditures • IM 1.9: % households with savings • IM 1.10: % women with savings Women's Empowerment • IM 1.11: Women's empowerment index	Baseline/ end-line; annual monitoring	Quantitative / qualitative surveys; producer group records; annual HH tracer study	External consultant
Objective 1: To increase the productivity and empowerment of 150,000 poor women farmers in sustainable and equitable agriculture systems.				
Outcome 1: Improved knowledge, skills, relationships, self-confidence, and conviction of poor women farmers.	• OC 1.1: % women participating in formal and informal groups • OC 1.2: % women holding leadership positions in formal and informal groups • OC 1.3: % respondents confident speaking about gender and other community issues at the local level	Baseline/ end-line; annual monitoring	Quantitative/ qualitative surveys; producer group records; post-harvest surveys of tracer HHs	External consultant; M&E unit

Results	Performance Indicators	Frequency	Source	Responsible
Outcome 2: Increased access to productive resources, assets, markets, and appropriate and reliable services and inputs for poor women farmers.	• OC 2.1: % women with access to and control over loans for IGA • OC 2.2: % women with access to agricultural extension services in last 12 months • OC 2.3: % women reporting satisfaction with agricultural extension services • OC 2.4: % women accessing agricultural financial services (loans, savings, crop insurance) in last 12 months • OC 2.5: % women accessing agricultural inputs (seeds, fertilizers, etc.) over the last 12 months • OC 2.6: % women accessing output markets to sell agricultural production over the last 12 months	Baseline/ end-line; annual monitoring	Quantitative/ qualitative surveys; producer group records; annual HH tracer study	External consultant; M&E Unit
Outcome 3: Improvements in yield and income through adoption of sustainable and intensified agriculture and value addition.	• OC 3.1: Net income of women from agricultural production and/or related processing activities • OC 3.2: Agricultural yield in crops supported by Pathways • OC 3.3: Number of different crops grown • OC 3.4: % women adopting (project defined) minimum number of improved agricultural practices (list of improved practices TBD by country) • OC 3.5: % women farmers adopting (project defined) minimum number of post-harvest processing (list of improved practices TBD by country) • OC 3.6: % women adopting (project defined) improved storage practices (list of improved practices TBD by country) • OC 3.7: % women using [project defined] minimum number of improved livestock practices (list of improved practices TBD by country)	Baseline/ end-line; annual monitoring	Quantitative/ qualitative surveys; annual reports	External consultant; M&E Unit
Outcome 4: Increased poor women farmer contributions to and influence over household income and decision making.	• OC 4.1: % women with sole or joint control over household income and expenditures • OC 4.2: % women with sole or joint control over agricultural income and expenditures • OC 4.3: % women with sole or joint decision-making and control over household assets • OC 4.4: % women with sole or joint decision-making and	Baseline/ end-line; annual monitoring	Quantitative/ qualitative surveys; annual reports	External consultant; M&E Unit

Results	Performance Indicators	Frequency	Source	Responsible
	control over agricultural assets • OC 4.5: % women making sole or joint decisions about health care • OC 4.6: % women reporting sole or joint decision-making over reproductive health decisions (family planning; spacing of children)			
Outcome 5: More positive and enabling attitudes, behaviors, social norms, policies, and institutions.	• OC 5.1: % of the project's groups that have developed a gender policy • OC 5.2: % of respondents expressing attitudes that support gender-equitable roles in family life • OC 5.3: % of respondents expressing attitudes that reject household gender-based violence • OC 5.4: Women's mobility • OC 5.5: % of women reporting their sex as a barrier to participation in local groups / forums	Baseline/ end-line; annual monitoring	Quantitative/ qualitative surveys; annual reports	External consultant; M&E Unit

Annex 3: Baseline and Endline Indicator Values

Table 35. Pathways Baseline and Endline results for Impact Indicators

Pathways Goal: To increase poor women farmers' productivity and empowerment in more equitable agriculture systems at scale.										
Impact Indicators	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
Food & Nutrition Security										
IM 1.1: Mean household dietary diversity scores	4.3	4.6	4.1	5.4*	5.3	6.0*	6.4	6.4	7.2	5.9*
IM 1.2: Mean women's intra-household food access	3.9	4.2	3.9	5.3*	5.2	5.7*	6.1	5.8*	7.0	5.5*
Livelihoods Resilience										
IM 1.3: Coping strategies index	22.9	24.8	3.2	9.7*	2.1	5.6*	2.4	3.6*	2.6	15.8*
IM 1.4: % households adopting negative coping strategies in past 3 months	80.8	81.8	18.8	75.9*	8.3	16.9*	22.5	13.1*	5.3	49.6*
IM 1.5: % households using adaptation strategies to reduce the impact of future shocks	56.4	87.3*	56.5	94.8*	83.0	90.4*	47.1	48.7	34.9	86.8*
IM 1.6: Mean asset index	250.1	274.6	78.8	53.2*	200.1	399.8*	527	392*	399.3	418.9
Economic Poverty Reduction										
IM 1.7: Per capita monthly household income (Farm and non-farm)	3.41	9.90*	15.47	13.25	11.60	17.38*	9.24	11.05	22.45	22.74
IM 1.8: Per capita monthly household expenditures	23.08	28.35	16.91	18.94*	19.55	27.02*	13.11	19.59*	16.35	38.01*
IM 1.9: % households with savings	85.9	72.7*	79.1	56.8*	97.0	94.2*	24.2	5.4*	28.9	25.7
IM 1.10: % women with savings	77.3	63.6*	78.8	53.2*	96.7	93.3*	32.6	4.7*	27.3	24.1
Women's Empowerment										
IM 1.11: Women's 5 domains of empowerment score	0.52	0.59*	.47	.53*	.60	.66*	.32	.46*	.59	.72

Table 36. Pathways Baseline to Endline results for Outcome Indicators

Outcome Indicators	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
Outcome 1: *Improved knowledge, skills, relationships, self-confidence and conviction of poor women farmers*										
OC 1.1: % women participating in formal and informal groups	90.5	98.9*	90.5	98.9*	53.1	72.3*	83.3	94.0*	96.0	98.1*
OC 1.2: % women holding leadership positions in formal and informal groups	22.1	14.3*	22.1	14.3*			41.9	34.8*	43.5	52.1*
OC 1.3: % respondents confident speaking about gender and other community issues at the local level										
Female respondents	60.8	74.8*	60.8	74.8*	53.3	77.2*	38.9	59.3*	66.5	61.9
Male respondents	43.7	83.7*	43.7	83.7*	73.8	87.4*	45.2	82.3*	94.2	92.1
Outcome 2: *Increased access to productive resources, assets, markets, and appropriate and reliable services and inputs for poor women farmers.*										
OC 2.1: % women with access to and control over loans for IGA	9.0	5.2*	7.1	5.2*	29.9	36.8*	61.9	53.9*	18.2	24.8*
OC 2.2: % women accessing agricultural inputs (seeds) over the last 12 months	36.5	89.1*	36.5	89.1*	78.1	86.4*	59.3	69.5*	29.7	66.2*
OC 2.3: % women accessing output markets to sell agricultural production over the last 12 months	75.6	50.5*	75.6	50.5*	41.5	62.9*	24.4	23.0	74.1	55.5*
OC 2.4: % women with access to agricultural extension services in last 12 months	23.8	89.1*	23.8	89.1*	28.8	81.6*	20.3	62.5*	97.6	95.7*
OC 2.5: % women accessing agricultural financial services (loans, savings) in last 12 months	96.2	93.9	96.2	93.9	96.9	96.4	44.4	80.1*	34.8	74.6*
OC 2.6: % women reporting satisfaction with agricultural extension services	83.9	95.0*	83.9	95.0*			80.5	86.2	24.9	56.4*
Outcome 3: *Improvements in yield and income through adoption of sustainable and intensified agriculture and value addition.*										
OC 3.1: Net income of women from agricultural production and/or related processing activities	64.2	76.9	64.2	76.9	165.07	253.01*			205.92	275.61*
OC 3.2: Agricultural yield in crops supported by Pathways (kg. per hectare)										
Rice	852.6	1200.0*	851.9	1080.6*			1901	1253		
Maize	567.4	392.3*	356.9	320.5			1876	556		
Pulses	228.7	287.1	194.6	193.2						
Millet							552	806*		
Fonio							1100	806		
Sorghum							774	1039		
Groundnuts					802	763				

Soya					712	795				
Cassava									1007.9	798.3
Sesame									191.9	300.5*
OC 3.3: Number of different crops grown	1.2	2.0*	1.2	2.0*	2.6	3.0*	3.4	3.8*	2.3	2.6*
OC 3.4: % women adopting at least three improved agricultural practices	33.0	52.4*	33.0	52.4*	46.8	69.8*	19.0	26.3*	21.2	46.6*
OC 3.5: % women farmers adopting at least two post-harvest processing practices	83.8	53.3*	83.8	53.3*	61.3	73.6*	22.7	10.9*	27.5	59.7*
OC 3.6: % women adopting improved storage practices	48.4	37.1*	48.4	37.1*	27.0	25.1	33.1	62.3*	31.0	25.6*
OC 3.7: % women using at least one improved livestock practice	31.8	52.0*	31.8	52.0*	44.9	80.2*	55.8	29.5*	33.1	42.7*
Outcome 4: *Increased poor women farmer contributions to and influence over household income and decision making.*										
OC 4.1: % women with sole or joint control over household income and expenditures	58.4	52.5*	58.4	52.5*	63.0	63.4	24.5	48.0*	67.5	81.6*
OC 4.2: % women with sole or joint control over agricultural income and expenditures	53.4	52.9	53.4	52.9*	54.8	57.2	9.4	24.9*	64.0	77.9*
OC 4.3: % women with sole or joint decision-making and control over household assets	40.0	67.8*	40.0	67.8*	57.2	72.9*	9.8	46.7*	68.3	87.4*
OC 4.4: % women with sole or joint decision-making and control over agricultural assets	52.8	76.7*	52.8	76.7*	60.4	76.2*	21.7	48.4*	76.5	90.1*
OC 4.5: % women making sole or joint decisions about health care	93.8	94.7	93.8	94.7	85.8	82.0*	31.9	80.0*	86.0	93.9*
OC 4.6: % women reporting sole or joint decision-making over reproductive health decisions	97.6	98.0	97.6	98.0	94.9	91.9*	35.4	82.6*	95.5	98.6*
Outcome 5: *More positive and enabling attitudes, behaviors, social norms, policies, and institutions.*										
OC 5.1: % of respondents expressing attitudes that support gender-equitable roles in family life										
Female Respondents	35.7	25.2*	35.7	25.2*	44.4	47.2	12.8	16.0	31.4	42.5*
Male Respondents	19.3	13.7*	19.3	13.7*	50.7	45.0	6.2	7.1	22.9	34.6*
OC 5.3: % of respondents expressing attitudes that reject household gender-based violence										
Female Respondents	26.5	49.4*	26.5	49.4*	79.5	80.3	14.1	25.8*	29.0	74.8*
Male Respondents	15.3	37.6*	15.3	37.6*	83.3	81.5	55.6	19.7*	22.9	70.0*
OC 5.4: Women's mobility	16.5	25.4*	16.5	25.4*	47.5	46.3	4.3	11.2*		
OC 5.5: % of women reporting their sex as a barrier to participation in local groups or forums	10.6	0.0*	10.6	0.0*	3.0	14.2*	44.5	38.3	0.4	1.2*

*Statistically different at least at the 10% level.

Annex 4: Computation of secondary variables related to household economic status and food security

Household Dietary Diversity Score (HDDS)

This indicator is computed by summing the number of different food categories reported eaten by the household in day prior to the interview. This indicator was measured as recommended by FANTA, using the following 12 food groups: cereals, tubers, legumes, dairy, meat, fish, oils, sugar, fruits, eggs, vegetables, and others. The HDDS provides a measure of a particular household's food access. A higher HDDS represents a more diverse diet, which is empirically highly correlated with a household's income level and access to food.[30]

Asset Indices

The weighted asset index is computed by multiplying the number of each type of household asset by the index value for that particular asset type. Index values of household assets used in the construction of the asset index are presented in the table below. A higher value of the asset index indicates that households have been able to accumulate assets over time. Households are able to accumulate assets if income is greater than the necessary expenditures to meet household subsistence requirements. Assets also provide households with a cushion to adjust to shortfalls in incomes, or sudden increases in necessary expenditures. Thus, households with a higher asset index are less vulnerable than households with lower asset index values.

As shown in the table below, for some assets, context-specific weighted values were used across countries. For example, in Mali land is plentiful and is not the constraining factor of production, also warranting a lower weight, and items such as beds and/or bookshelves were included the category of "large consumer durables" justifying a lower weight.

	Weighted values		
Asset type	**Malawi, Ghana, India**	**Tanzania**	**Mali**
Agricultural land (pieces/plots)	50	50	25
Large livestock (oxen, cattle)	25	25	25
Small livestock (goats, pigs, sheep)	10	10	10
Chickens, ducks, turkeys, pigeons	3	3	3
Fish pond or fishing equipment	5	5	5
Fishing equipment – canoes / nets	-	-	2.5
Non- mechanized farm equipment (sickle)	1	1	1
Farm equipment (mechanized)	10	10	10
Nonfarm business equipment	10	10	10
House (and other structures)	10	10	10
Large consumer durables (TV, sofa)	10	10	10
Small consumer durables (radio, cookware, iron)	1	1	1
Cell phone	5	5	5
Other land not used for agricultural purposes (pieces, residential or commercial land)	10	10	10
Means of transportation (bicycle, motorcycle, car)	10	15	10

[30] Swindale, Anne, and Paula Bilinsky. *Household Dietary Diversity Score (HDDS) for Measurement of Household Food Access: Indicator Guide (v.2).* Washington, D.C.: Food and Nutrition Technical Assistance Project, Academy for Educational Development, 2006.

Annex 5: Women's Empowerment Index (WEI)

The Women's Empowerment Index (WEI) indicator used as part of CARE's evaluation plan was adapted from, and closely follows, the Women's Empowerment in Agriculture Index (WEAI) developed for Feed the Future. The WEAI includes two sub-indices: the 5 domains of empowerment index (5DE) and the Gender Parity Index (GPI).

The 5DE index is a direct measure of women's empowerment split into two main components:

- Incidence of Women's Empowerment: calculated as the percentage of women that are empowered
- Adequacy of the Disempowered: empowerment score of those women that are disempowered

Empowerment, as defined in the WEAI, is achievement in 80% or better of a weighted-index of the 10 indicators underlying the WEAI. Table 37 shows the weighting used for both the WEAI index and the adapted WEI index being used in this evaluation. The differences in weighting between the two are driven in large part by additional indicators that were included as part of CARE's evaluation plan. Those new indicators include:

- Women's self confidence
- Women's mobility
- Women's attitudes towards gender equitable roles in family life
- Women's political participation

The addition of the new indicators adds several important dimensions directly related to women's empowerment that were previously unaccounted for in the WEAI. Women's engagement in the political process and a measure of self-confidence were added to the leadership domain. With the expansion of that domain from two to four indicators, the indicators were re-weighted to 5% from 10%, leaving the domain weighted at 20%.

The WEAI "Time" domain was relabeled "Autonomy" to more accurately reflect the indicators contributing to this domain in the WEI. The workload indicator, weighted at 10% in the WEAI, was replaced by two indicators measuring women's mobility and their attitudes concerning gender equity in the home. Questions related to women's workload were explored through qualitative interviews rather than the quantitative survey. Again, the addition of an extra indicator to the time domain resulted in the need to adjust indicator weights in order to leave all domains equally weighted at 20%.

Table 37. WEAI vs. WEI: Indicator weights

Domain	Indicator	WEAI weight	WEI (CARE) weight
PRODUCTION (20%)	With decision-making input for HH productive decision domains	10%	10%
	With autonomy in HH production domains	10%	10%
RESOURCES (20%)	With sole or joint ownership of household assets[a]	6.67%	6.67%
	With sole or joint control over purchase or sale of household assets[a]	6.67%	6.67%
	With access to and decisions on credit	6.67%	6.67%
INCOME (20%)	With control over household income and expenditures in HH decision-making domains[b]	20%	20%
LEADERSHIP & COMMUNITY (20%)	Participating in formal and informal groups	10%	5%
	Confident speaking about gender and other community issues at the local level	10%	5%
	Who express self-confidence	N/A	5%
	Demonstrating political participation	N/A	5%
TIME/ AUTONOMY (20%)	Satisfied with the amount of time available for leisure activities	10%	6.67%
	Workload	10%	0%
	Achieving a mobility score of 16 or greater	N/A	6.67%
	Expressing attitudes that support gender equitable roles in family life *	N/A	6.67%
	Total	100%	100%

[a] excluding poultry, small consumer durables, and non-mechanized farm equipment as modeled in the WEAI.

[b] excluding minor household expenditures as modeled in the WEAI.

Table 38: Domains of empowerment

% women achieving the indicator	Ghana		India		Malawi		Mali		Tanzania	
	BL	EL	BL	EL	BL	EL	BL	EL	BL	EL
Production										
With decision-making input for HH productive decision domains	84.0	80.9	78.4	89.9*	59.2	60.8	33.5	69.6*	64.0	79.2*
With autonomy in one	32.0	36.4	14.6	26.7*	38.4	42.4	27.4	31.4*	52.6	48.6

or more HH production domains										
Resources										
With sole or joint ownership of household assets	29.4	16.5*	45.1	67.5*	57.0	64.1*	11.3	31.6*	74.2	86.3*
With sole or joint control over purchase or sale of household assets	29.9	33.9	29.3	54.3*	61.4	76.1*	11.0	41.9*	73.9	90.7*
With access to and decisions on credit	81.7	84.3	44.7	49.7*	74.6	83.0*	88.9	87.5	28.9	77.2*
Income										
With control over household income and expenditures of HH decision-making domains	58.7	63.6	56.2	48.8*	56.7	54.8	11.7	32.3*	63.5	78.4*
Leadership & Community										
Participating in formal and informal groups	97.6	97.3	90.5	99.1*	99.0	100.0*	83.3	94.0*	96.0	98.1*
Confident speaking about gender and other community issues at the local level	71.9	66.1	60.8	74.9*	53.3	77.2*	43.2	50.1*	66.5	61.9
Demonstrating political participation	74.2	84.0*	50.1	68.0*	83.1	94.5*	54.8	63.8*	93.2	88.8*
Who express self-confidence in 5 of 7 statements	37.5	77.1*	41.4	48.7*	71.5	86.5*	43.4	73.3*	51.5	82.9*
Autonomy/Family Life										
Satisfied with the amount of time available for leisure activities	46.9	80.7*	89.2	85.8	83.3	86.5	78.9	83.5*	68.0	69.3
Achieving a mobility score of 16 or greater	13.6	58.0*	20.0	33.3*	47.5	46.3	4.3	11.2*	42.4	65.8*
Expressing attitudes that support gender equitable roles in family life	57.8	28.4*	45.9	48.7	44.4	47.2	12.7	15.8	31.2	42.4*

*Statistically different at least at the 10% level.

Analysis was initially conducted using the WEAI thresholds for indicator achievement, or those specified by CARE in the case of new indicators. These thresholds often resulted in baseline levels of achievement of 90% or greater, leaving little room for project improvement over time. To allow for country-specific improvement, baseline values were adjusted to country-specific thresholds. In cases where baseline indicator values were greater than 50% using the WEAI thresholds, the threshold for the indicator was adjusted until the value fell between 45-60%. In some cases, values remain above 60% when the threshold cannot be adjusted any further. The table below gives both the initial WEAI thresholds and the ending country-specific thresholds.

As an example where a threshold was adjusted for Ethiopia, the initial guidance for the indicator measuring the decision-making import for household productive decision domains was defined as achievement being realized for those women that had input in 2 or more (of 5 total) domains. When calculated, the percentage of women achieving this was 74.7%. Thus, the indicator was recalculated increasing the threshold for achievement from (2 of 5) to (3 of 5) production domains. Again, this was greater than 50% (72.6%) so the threshold was increased until the value fell between 45-60%. Finally, the threshold was adjusted to 5 of 5 production domains at which point the value fell to 64.8%. Generally, one would continue adjusting the threshold, however in this case the threshold could not be adjusted further. Those indicators with "N/A" signify cases where there was no threshold to adjust (i.e., participating in formal and informal groups – either they participated in at least one group or they didn't).

		Country-specific Thresholds					
Domain	Indicator	WEAI	Malawi	Tanzania	Ghana	Mali	India
PRODUCTION	With decision-making input for HH productive decision domains	2 of 5	5 of 5	5 of 5	2 of 5	5 of 5	3 of 5
	With autonomy in HH production domains	1 of 5	1 of 5	1 of 5	1 of 5	1 of 5	1 of 5
RESOURCES	With sole or joint ownership of household assets[a]	≥ 50%	≥ 75%	≥ 75%	≥ 50%	≥ 75%	≥ 50%
	With sole or joint control over purchase or sale of household assets[a]	≥ 50%	≥ 75%	≥ 75%	≥ 50%	≥ 75%	≥ 80%
	With access to and decisions on credit	N/A	N/A	N/A	N/A	N/A	N/A
INCOME	With control over household income and expenditures in HH decision-making domains[b]	≥ 50%	≥ 60%	≥ 60%	≥ 50%	≥ 60%	≥ 70%
LEADERSHIP & COMMUNITY	Participating in formal and informal groups	N/A	N/A	N/A	N/A	N/A	N/A
	Confident speaking about gender and other community issues at the local level	2 of 4	3 of 4	3 of 4	2 of 4	3 of 4	3 of 4
	Demonstrating political participation	N/A	N/A	N/A	N/A	N/A	N/A
	Who express self-confidence *	2 of 7	5 of 7	5 of 7	5 of 7	5 of 7	5 of 7
AUTONOMY	Satisfied with the amount of time available for leisure activities	N/A	N/A	N/A	N/A	N/A	N/A
	Achieving a mobility score of 16 or greater [c]	N/A	N/A	N/A	N/A	N/A	N/A
	Expressing attitudes that support gender equitable roles in family life *	N/A	N/A	N/A	N/A	N/A	N/A

[a] excluding poultry, non-mechanized farm equipment, and small consumer durables as modeled in the WEAI.

[b] excluding minor household expenditures as modeled in the WEAI.

[c] Highest possible score is 32.

To accommodate the addition of CARE's new indicators, adjustments were also made to the GPI portion of the WEI. The most conspicuous change comes in the removal of the aggregated GPI component itself. Although a single index number for gender parity was not calculated, examination of the differences in response between males and females for each indicator allows CARE to gain an understanding of parity as it relates to each WEI domain.

Removal of the aggregated GPI component was necessary because of differences between men and women for three indicators. Including these three indicators as part of the GPI would have violated the spirit of what the GPI represents. The three indicators are: women's mobility, women's ownership of assets, and women's input in the purchase in sale of assets.

The GPI includes two components:

- Percentage of women achieving gender parity: measured by the percentage of empowered women + percentage of women that have empowerment scores ≥ to the empowerment score of the male respondent in their household
- (Avg.) Difference in empowerment between men and women: calculated for those women that don't achieve gender parity.

The WEAI is structured to ask both men and women about their own mobility. The question was adapted as a result of input from the Ethiopia baseline survey (the first baseline study to be conducted) wherein men felt it absurd to be asked about their own mobility. The WEI, therefore, asked for men's perceptions about their spouse's mobility. Thus, there was no measurement of men's empowerment as regards their own mobility, making it impossible to measure differences between male and female empowerment in mobility (i.e., parity), as men and women were asked different questions.

Both questions related to asset ownership were only asked of the female household member (in part to help shorten the lengthy survey), again making it impossible to calculate a relative difference in empowerment between males and females for ownership and control of assets.

One option would have been to exclude all three of these indicators from calculation of the gender parity index. However, that would have meant a lack of valuable information and muddied interpretation of the results. Thus, rather than calculating a single, somewhat meaningless number as indicative of differences in men's and women's overall empowerment, men's and women's empowerment in each domain is used to understand parity. Mobility was excluded due to the interpretation issues cited above. The two asset indicators were included because, as constructed, the questions asked of household females still captured the relative difference in asset ownership and decision-making between household males and females (even if only from the perspective of the household female). Finally, the percentage of women achieving women's parity and the average difference in empowerment between men and women respondents was excluded due to the issues cited above.