

# Impact Evaluation:

## Zambia Gender and Groundnut Value Chains (GNVC)



Impact Evaluation:  
**Gender and Groundnut  
Value Chains in Zambia**

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# Overview



# Feed the Future

- U.S. Government's global hunger and food security initiative
- Mechanisms of interest to this impact evaluation:
  - Production, Finance & Improving Technology Plus (PROFIT+)
  - Better Life Alliance (BLA)



# Research questions

Aimed to test the hypothesis that the gender interventions implemented by PROFIT+ and BLA assisted in maintaining or increasing women's control over groundnut production, marketing, and proceeds

Do women maintain control over production of groundnuts as commercialization efforts are expanded?

What interventions might assist in maintaining women's control over production of groundnuts?

Do women maintain control over marketing/sales of groundnuts and proceeds as commercialization efforts are expanded?

What interventions assist in maintaining women's control over marketing/sales of groundnuts and control over the proceeds?

# Gender and the GNVC



Groundnuts are considered a woman's crop in Zambia. Most of the production and processing of the crop is controlled by female members of the households.



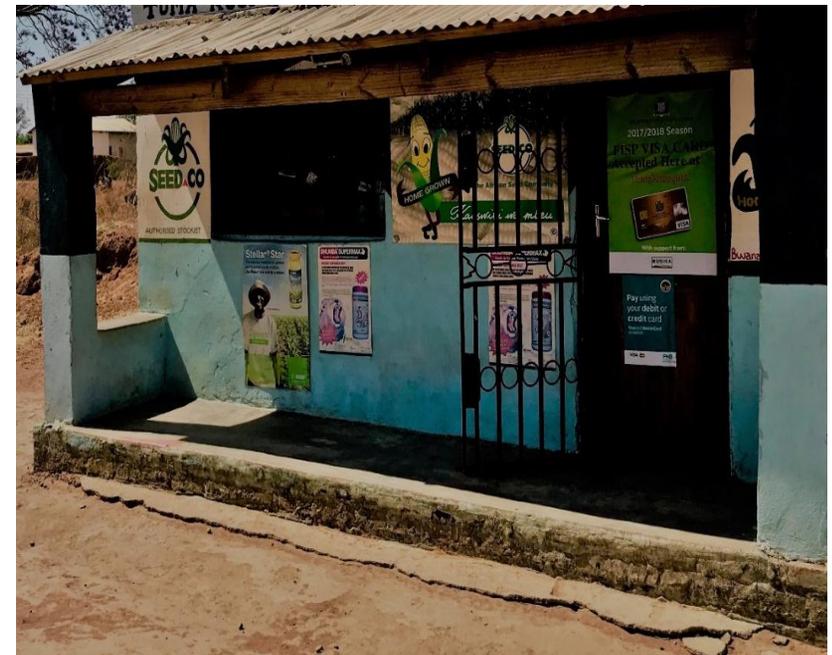
Commercialization of female-controlled crops can result in women being displaced from the value chain due to a male takeover as crops become more profitable.



Interventions that aim to commercialize value chains, especially those that are perceived as women's crops, need to take steps to ensure that women's relative control of income and other assets is maintained, if not increased.

# PROFIT+

- Implementation dates July 2012 – May 2017
- Led by ACIDI/VOCA
- Targeted 200,000 smallholder farmers
- Eastern Province districts of Chipata, Katete, Lundazi, and Petauke
- One focus of PROFIT+ was strengthening the GNVC
  - Conservation farming
  - Linking smallholder farmers, input suppliers, and buyers of crops

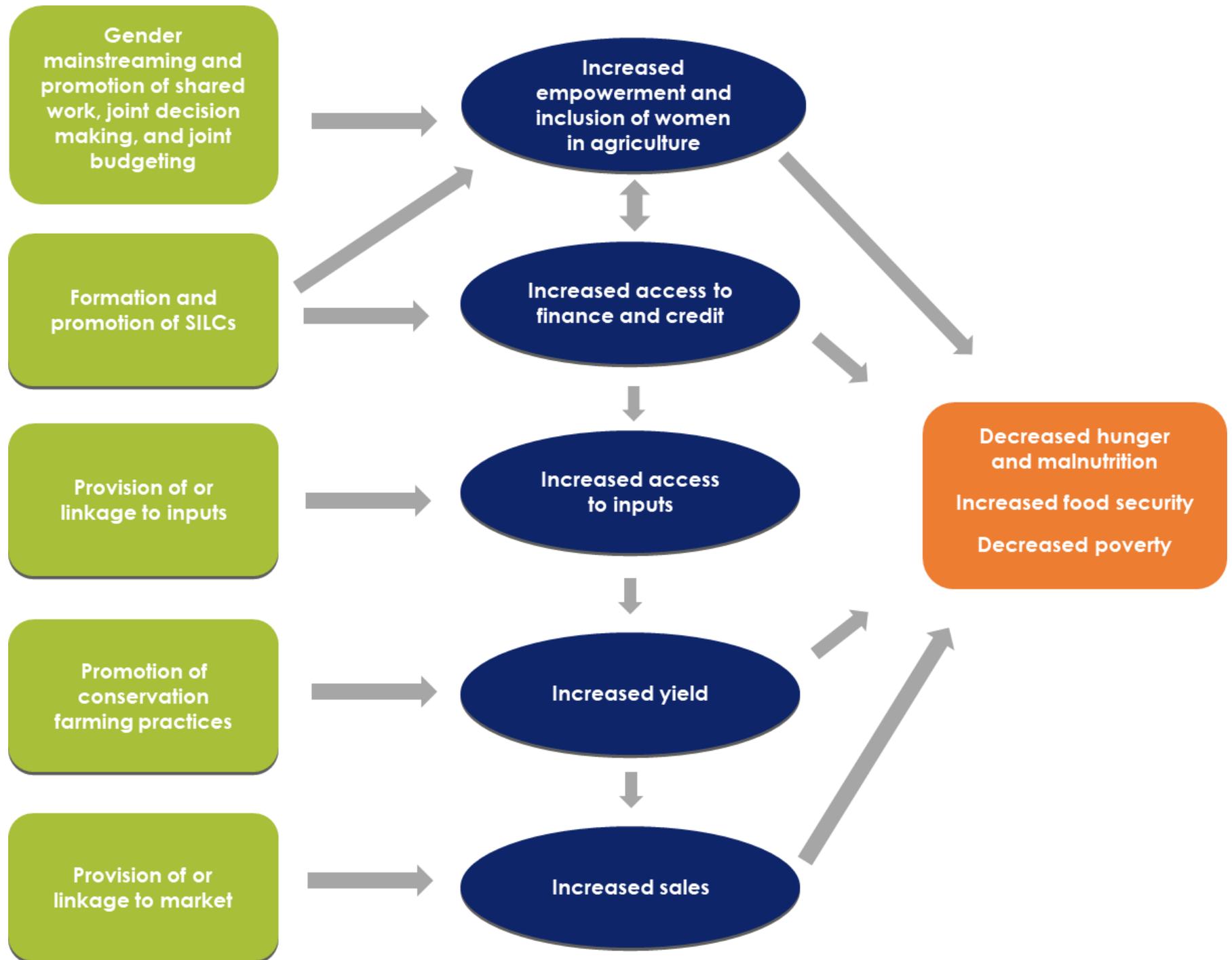


# Better Life Alliance (BLA)

- Implementation dates December 2011 – April 2016
- Led by COMACO
- Targeted 40,000 households
- Selected environmentally-sensitive areas in Chipata, Katete, Lundazi, Mambwe, Nyimba, and Petauke
- Strengthened the GNVC by
  - providing agricultural inputs
  - farmer training
  - value-added food processing
  - access to markets



# Evaluation conceptual framework



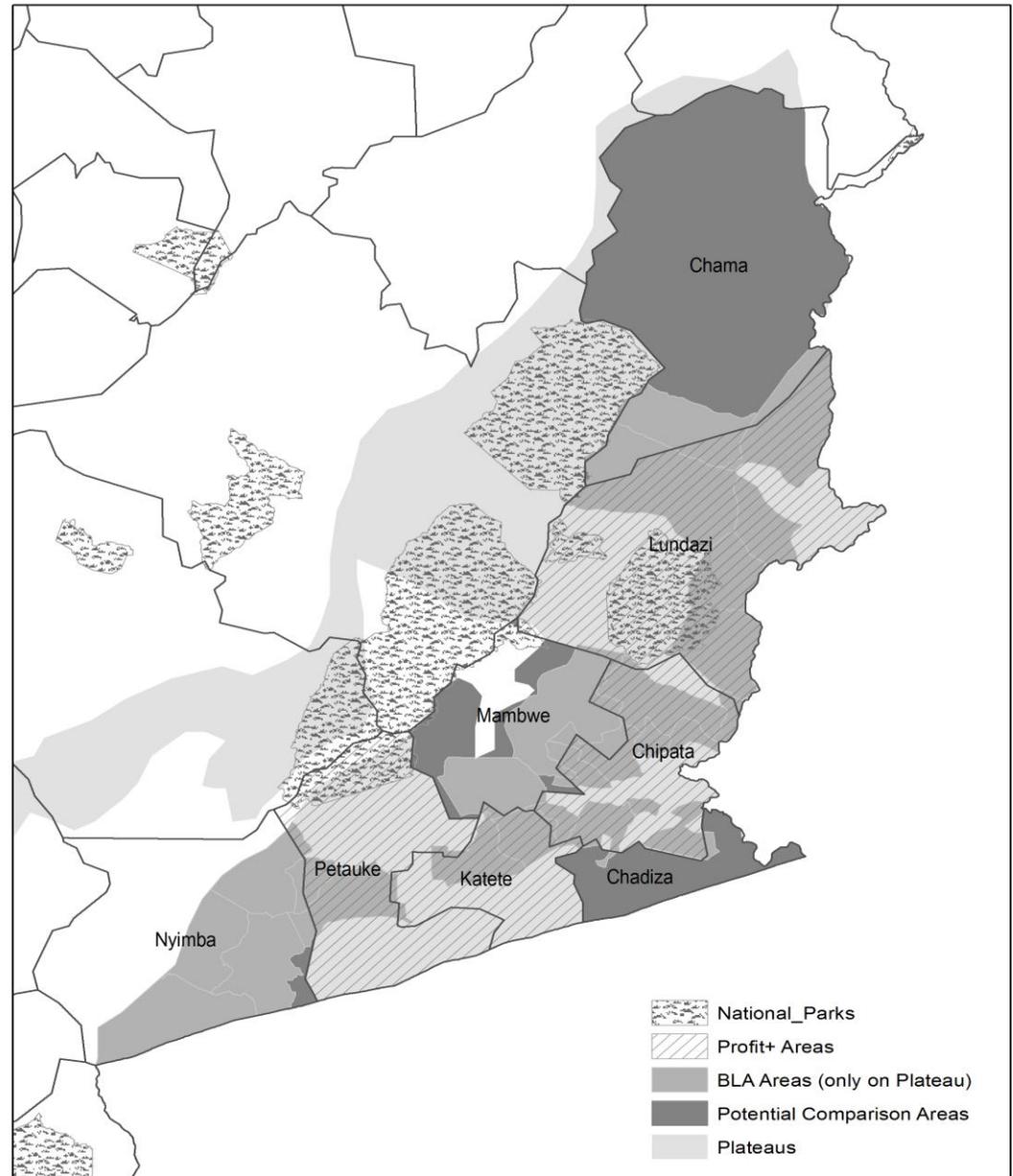
# The research team



▪ USAID ▪ MEASURE Evaluation ▪ IAPRI ▪ Central Statistical Office

# Research methods and study areas

- Baseline (2014) and end line (2017) quantitative longitudinal household survey in project and comparison domains
- Baseline and end line qualitative studies
- Implementation process monitoring



# Quantitative Survey



- Household, female and male questionnaires
- Covered range of topics including
  - groundnut production and sales,
  - household decision-making,
  - gender norms
  - exposure to interventions
- Descriptive and differences-in-difference analysis

# Household eligibility and response rates

## Eligibility:

### Baseline

- grew groundnuts in the 2012–2013 agricultural season and
- contained both a female and male household member age 18 or older

### Endline

- Same households were revisited in 2017
- Eligible if the same female household member was present in the household

## Response Rates:

### Baseline

- exceeded 97% for both households and women in both project and comparison domains
- 3,868 women interviewed

### End line

- ranged from 84.2% to 87.2% (women)
- No evidence of significant selection in re-interviewed sample
- 3,315 women interviewed

## Baseline

- Six communities selected —3 where only PROFIT+ was operating and 3 where only BLA was operating.
- 2 focus group discussions in each community —one with married women and one with married men
- 3 married couples participated in interviews in each community.

## End line

- Three active PROFIT+ community agrodealers (CADs) and three active BLA lead farmers were selected for interviews
- A community leader was interviewed in each community where the CAD or lead farmer was based
- Focus group discussions with female beneficiaries
- in-depth interviews with married couples (separately) where the female was a beneficiary and the household grew groundnuts

# Qualitative sample

## Baseline

- 131 individuals (70 women and 61 men) participated in the baseline qualitative study

## Endline

- 117 individuals (87 women and 30 men) participated in the end line qualitative study



# Results



# Research question 1: Groundnut production

Do women maintain control over production of groundnuts as commercialization efforts are expanded?

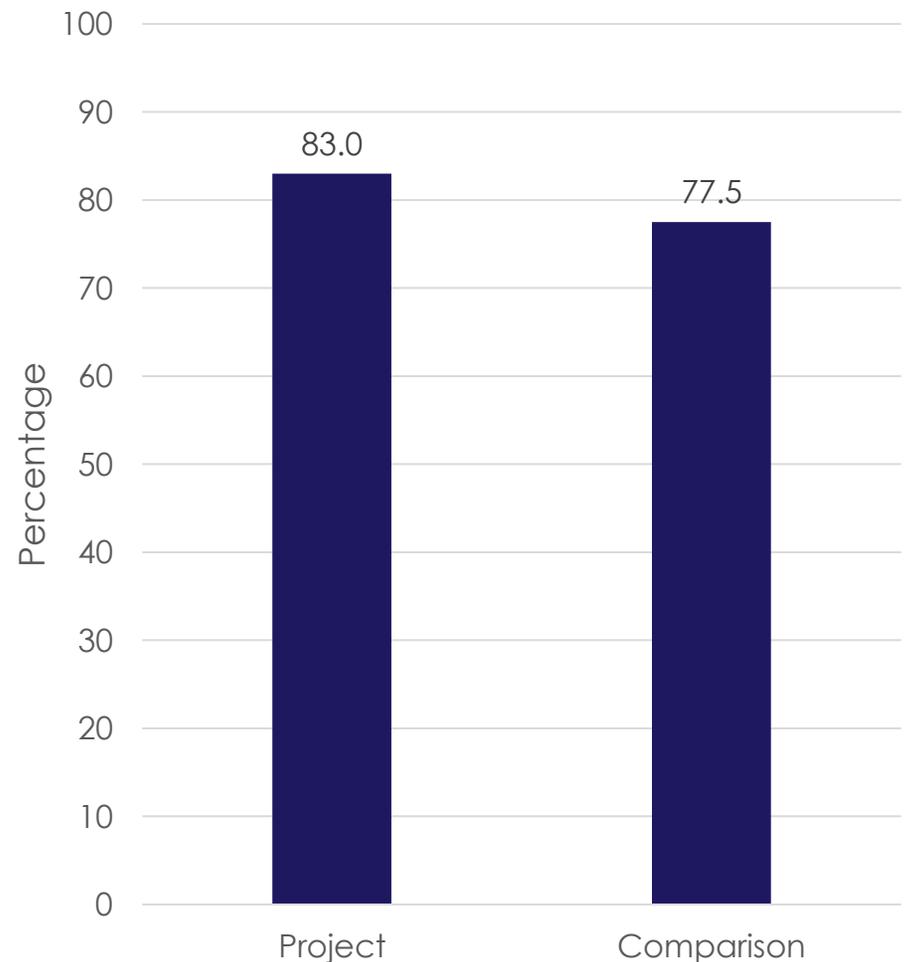


# Decision to plant groundnuts

Some households were no longer growing groundnuts in the 2015–2016 agriculture season.

- The main reason households did not plant groundnuts at end line was lack of seed
- The second most commonly reported reason was that land was needed for other crops
- Women were involved in the decision not to plant groundnuts at end line in approximately 75% of the households in both domains

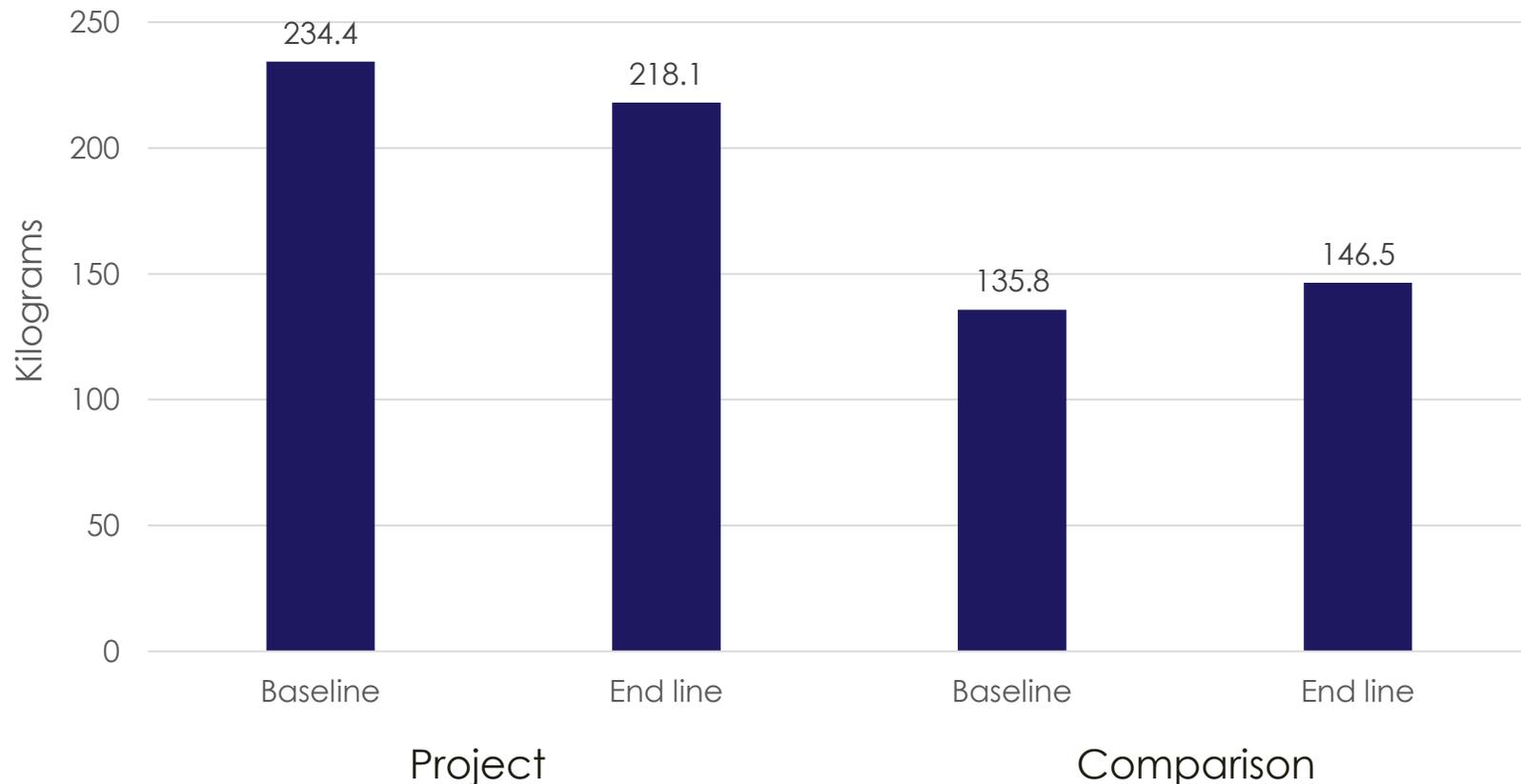
Household planted groundnuts at both baseline and end line



# Quantity harvested

Mean groundnut harvest decreased slightly in the project domain and increased slightly in the comparison domain, but the changes were not statistically significant.

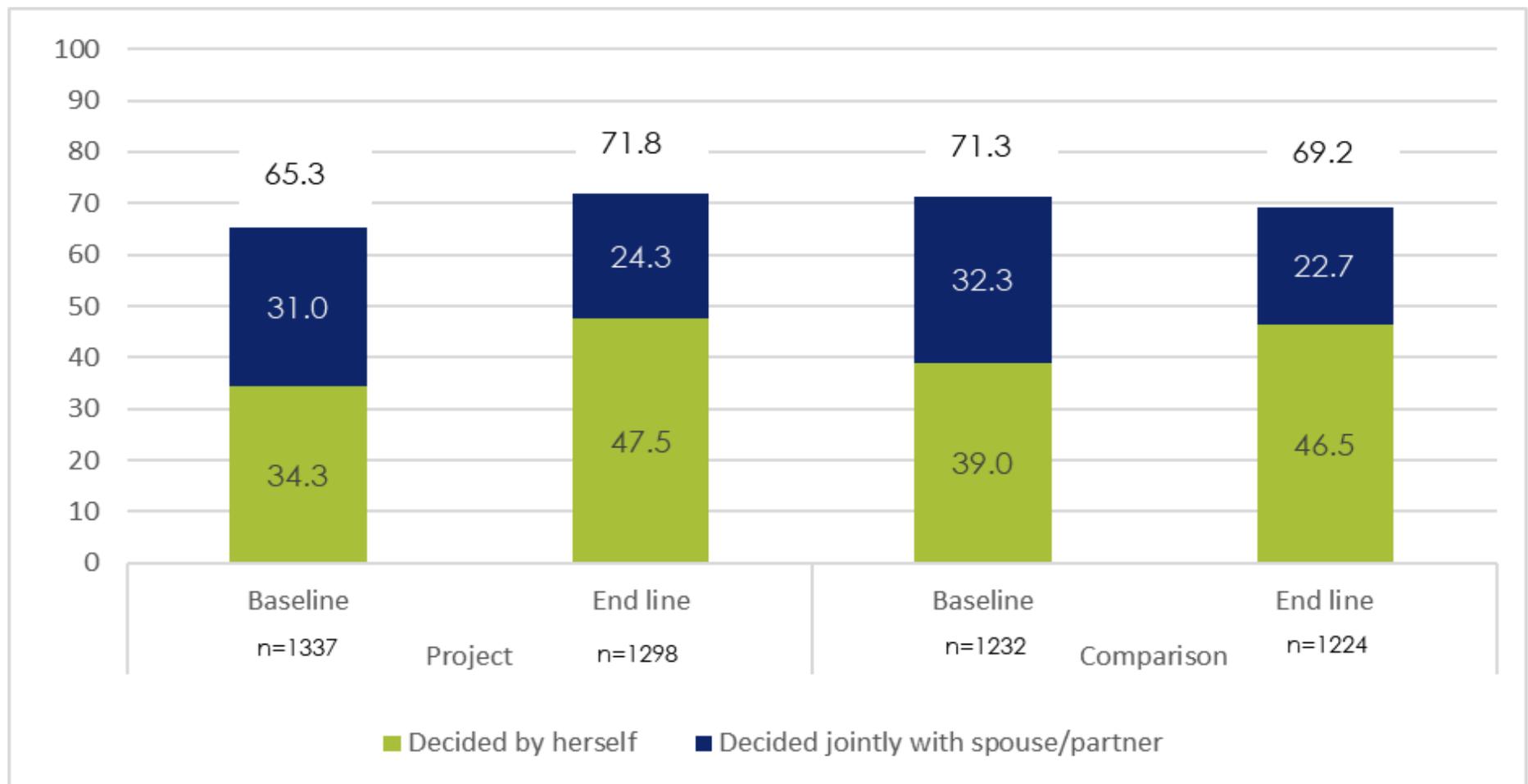
Mean total groundnut harvest among households that grew groundnuts at both baseline and end line



# Women's participation in production decisions

Women's participation in deciding to grow groundnuts increased over time in project areas ( $p < 0.05$ ) and decreased slightly in comparison areas.

Percentage of groundnut fields where women participated in deciding to grow groundnuts, among households that grew groundnuts at both baseline and end line



# Women's participation in production decisions

Women's participation in deciding which seed variety to plant increased over time in project areas ( $p < 0.01$ ) and decreased slightly in comparison areas.

Percentage of groundnut fields where women participated in deciding which seed variety to plant among households that grew groundnuts at both baseline and end line



# Research question 1: Conclusion

Do women maintain control over production of groundnuts as commercialization efforts are expanded?

## **Essentially, yes:**

- The percentage of women who participated in groundnut production decisions, either solely or jointly, increased significantly in the project domain but stayed the same in the comparison domain
- There was an increase in sole female decision making in both domains
- However, there was no change in production of groundnuts among households who grew groundnuts in both seasons

## Research question 2: Interventions aimed at maintaining women's control over groundnut production

What interventions might assist in maintaining women's control over production of groundnuts as commercialization efforts are expanded?



Main interventions: Gender messaging and SILCs

# Gender messaging

**In qualitative interviews, PROFIT+ CADs and BLA lead farmers reported that three main gender messages were promoted: shared household labor, joint decision making, and joint budgeting.**

*“The messages that have been promoted are that working together is a good thing because it brings unity and development in the community and even at the house. If you work together you will see development... a man... should not let a woman do all the household chores alone.”*

– Female CAD, Chipata

*“When it comes to joint decision making, COMACO tells us that decisions must be made together because both man and woman are human beings so there shouldn't be any segregation of duties.”*

– Female BLA lead farmer, Lundazi

# Exposure to gender messages

The quantitative survey data shows that around one-quarter of women had received training related to gender messages by 2017 in both project and comparison domains.

	Project		Comparison	
	Baseline	End line	Baseline	End line
<b>Percentage of women who received training on:</b>				
Women's rights/roles in agriculture	20.2	23.9	17.2	26.1
Women's ability/right to own land	16.6	25.2	9.7	28.5
Women's rights/roles in the family	21.5	29.4	21.9	30.1
Number of women	1,499	1,499	1,542	1,542

# Changes in gender attitudes

Both shifts towards and away from more gender-equitable norms were found in project and comparison areas.

Percentage of women who agree with each statement	Project		Comparison	
	Baseline	End line	Baseline	End line
A good wife obeys her husband even if she disagrees	63.1	49.9	64.3	53.8
It is important for a man to demonstrate to his wife/partner that he is the boss	52.7	55.7	61.7	61.7
A woman's most important role is to take care of her home and cook for her family	90.0	92.2	91.0	95.2
Taking care of the children is the mother's responsibility	81.4	85.8	79.3	89.0
A man should have the final word about decisions in the home	67.9	59.4	71.5	66.3
A married woman should be able to own land	67.8	61.8	72.1	63.0
Women should be able to travel alone to markets to sell crops	70.6	68.3	71.3	67.8
A married woman should be able to attend agricultural training	95.1	94.4	91.4	93.5
Number of women	1,499	1,499	1,542	1,542

Note: Green shading = shift to more gender-equitable norms; red = shift to less gender-equitable norms

# SILCs

**Membership in SILCS was common among female respondents in the qualitative study. Their experiences were mostly positive.**

*“We have done a lot of things out of these savings. Sometimes we share the money when we are broke. If you do not have money to buy fertilizer, you buy from savings. The same with seed. We no longer use recycled maize seed, we now buy maize seed from our savings. Some have built houses from their savings.”*

– Female farmer, Chipata (FGD participant)

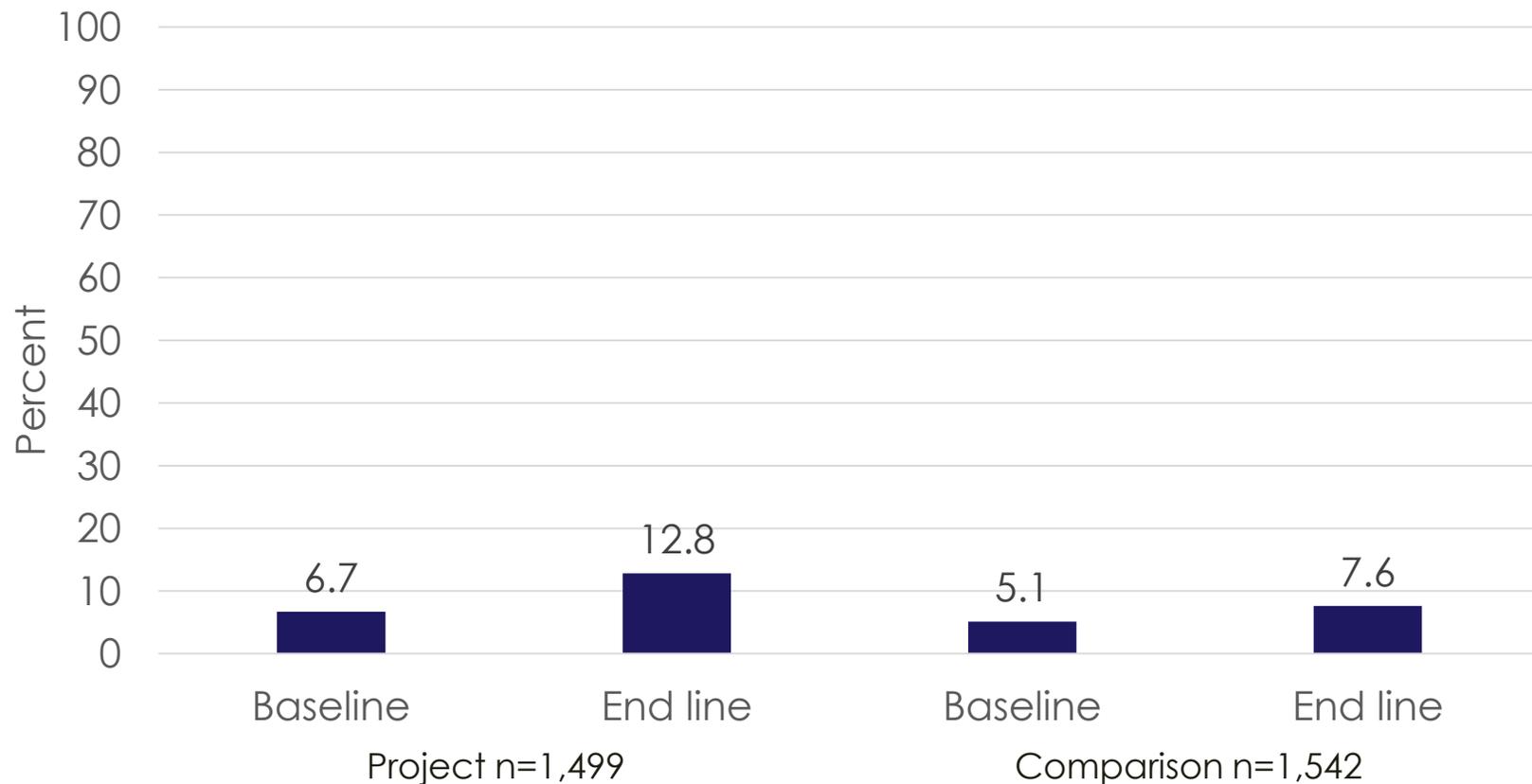
*“The savings group is a very progressive idea and it is really helpful. We have easy access to cash whenever we have a problem, especially school fees and inputs... I’m very comfortable with my wife’s participation in this group... I have encouraged her to continue.”*

– Male farmer, Chipata

# Participation in SILCs

Quantitative data show an increase in participation in SILCs, particularly in the project domain, but population-level coverage is relatively low.

Percentage of women who are an active member of a credit or microfinance group



# Research question 2: Conclusion

What interventions might assist in maintaining women's control over production of groundnuts as commercialization efforts are expanded?

- ⑩ Qualitative analysis suggests that promotion of gender messages and SILCs had a positive effect on maintaining women's control over groundnut production
- ⑩ However, quantitative results suggested little change in gender attitudes at the population level in either project or comparison areas
- ⑩ Women's participation in SILCs increased, particularly in project areas

# Research question 3: Commercialization of groundnuts

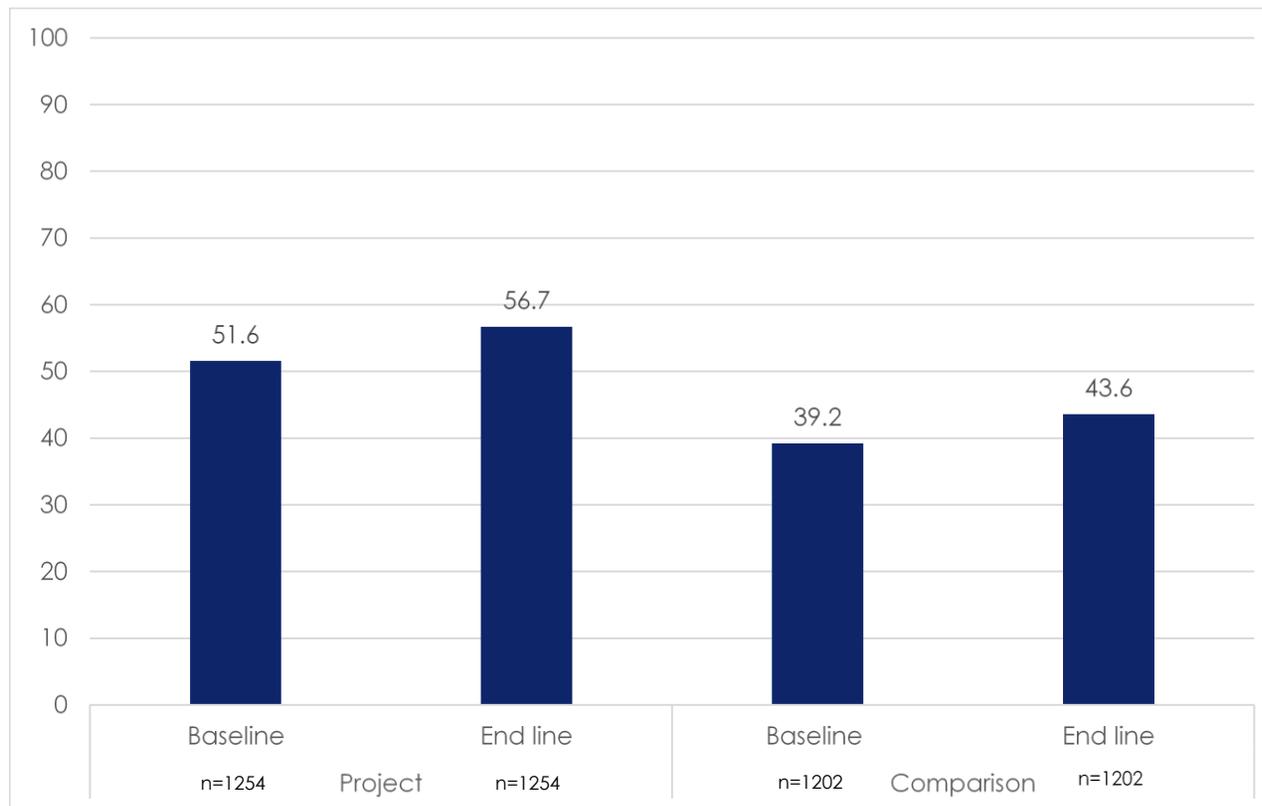
Do women maintain control over marketing/sales of groundnuts and proceeds as commercialization efforts are expanded?



# Sale/barter of groundnuts

The percentage of households that sold or bartered groundnuts increased in both project ( $p < 0.05$ ) and comparison ( $p < 0.05$ ) domains. The changes were the same in project and comparison domains.\*

Percentage of households that sold or bartered groundnuts among households that grew groundnuts at both baseline and end line

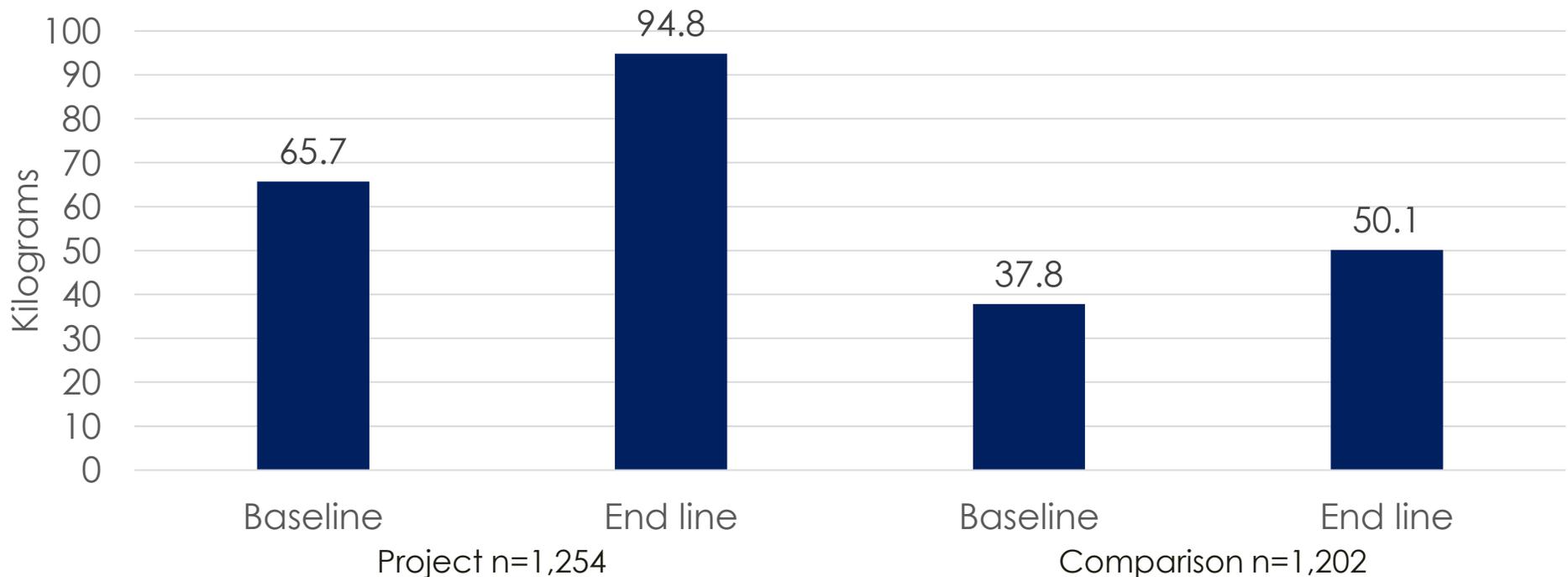


\*  $p > 0.05$  for interaction term in DID model

# Sale/barter of groundnuts

Mean total household sale/barter of groundnuts increased in both the project ( $p < 0.001$ ) and comparison ( $p < 0.01$ ) domains. The increase was significantly greater in the project than in the comparison domain.\*

Mean total household sale/barter (kilograms) of groundnuts among households that grew groundnuts at both baseline and end line

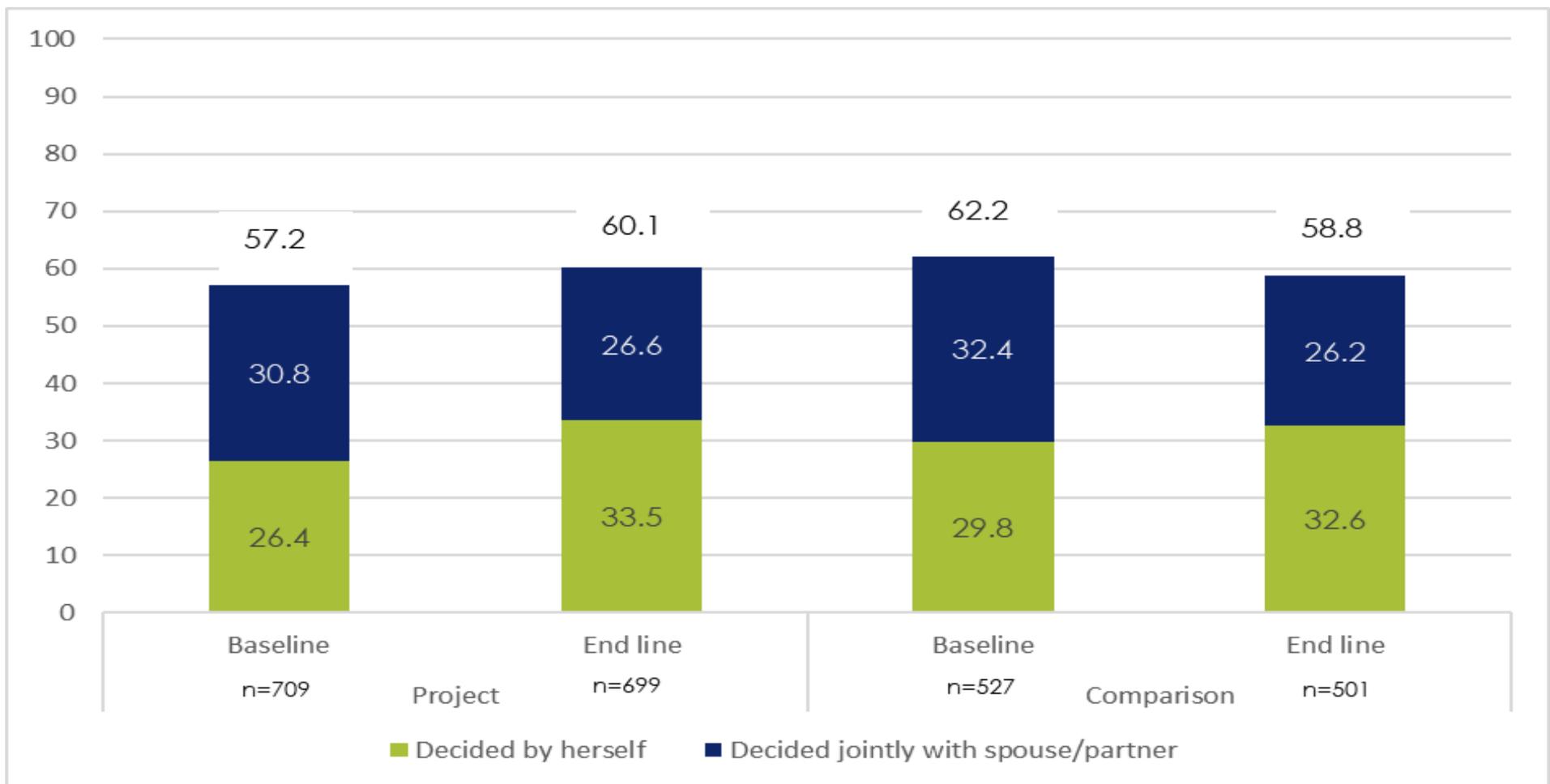


\*  $p < 0.01$  for interaction term in DID model

# Women's participation in sales

Women's participation in deciding whether to sell groundnuts did not change significantly over time in either project or comparison domains.

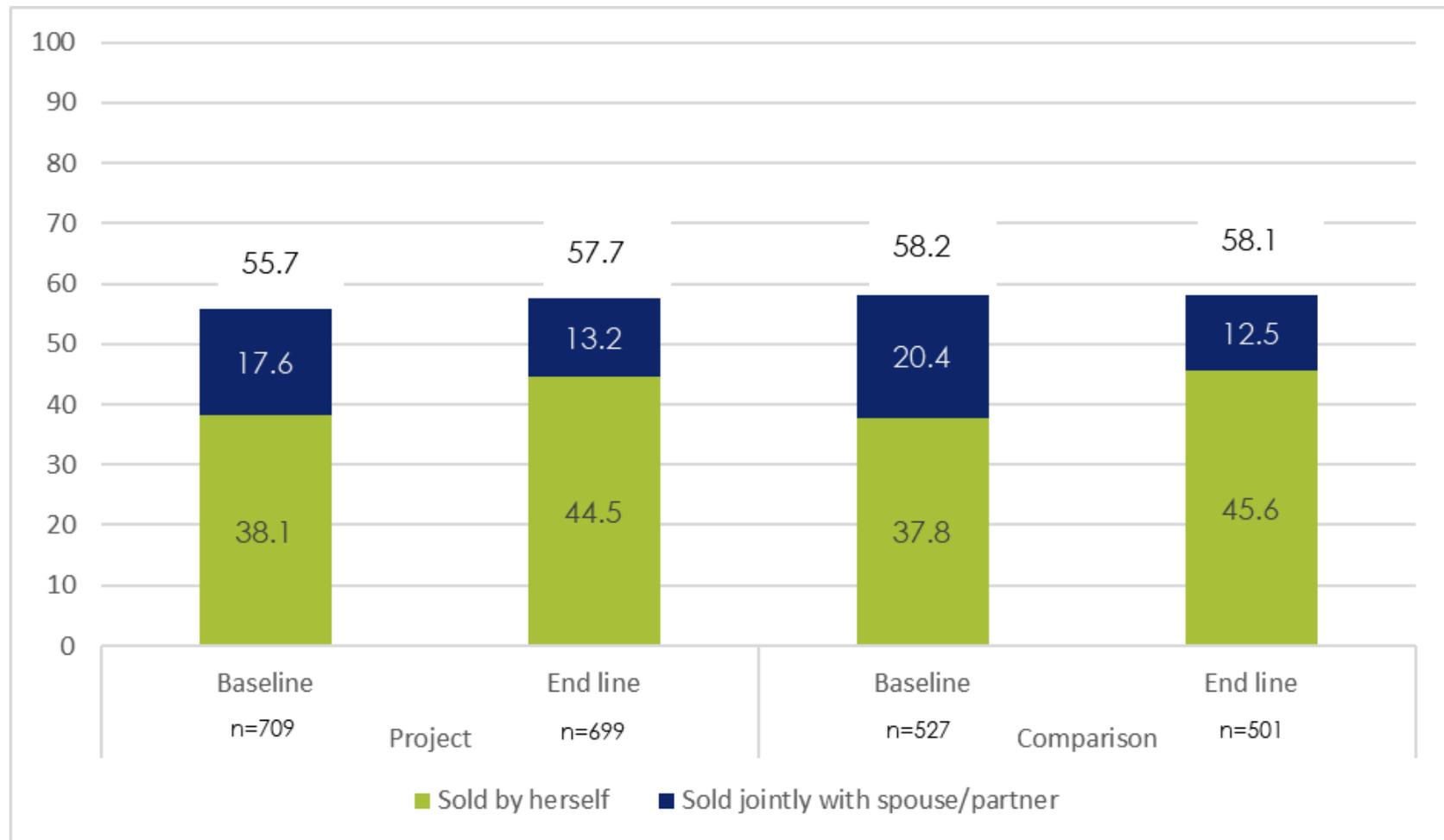
Percentage of households' groundnut fields from which groundnuts were sold where women participated in the decision to sell



# Women's participation in sales

Women's participation in selling groundnuts did not change significantly over time in either the project or comparison domains.

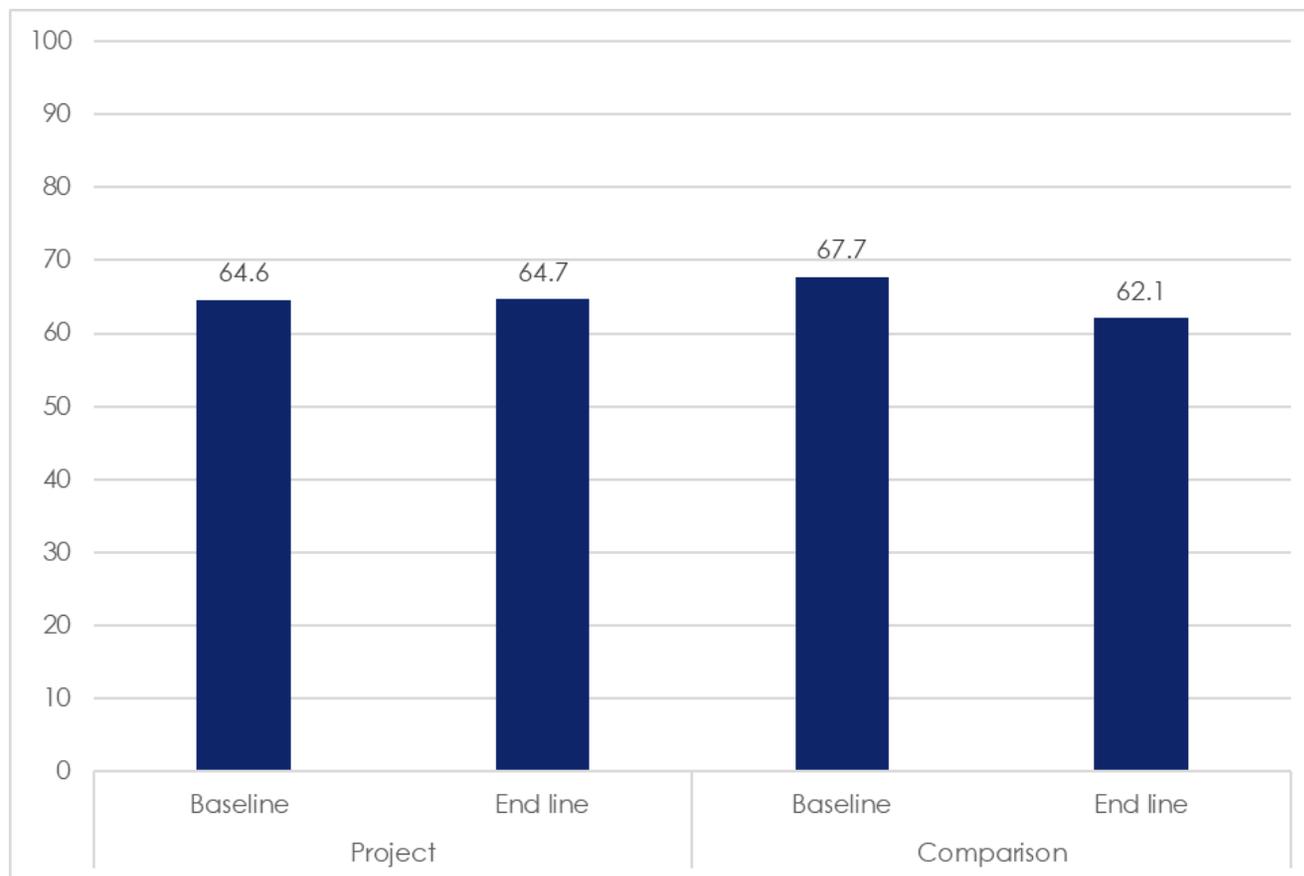
Percentage of households' groundnut fields from which groundnuts were sold where women participated in selling



# Women's control over proceeds

Women's participation in deciding how to use the proceeds from selling groundnuts did not change significantly over time in either the project or comparison domains.\*

Percentage of women who participated in deciding how to use proceeds from the largest sale of groundnuts, among households that sold groundnuts at both baseline and end line



\*  $p > 0.05$  for interaction term in DID model

# Research question 3: Conclusion

Do women maintain control over marketing/sales of groundnuts and proceeds as commercialization efforts are expanded?

- ⑩ Women's roles in decision-making over groundnut marketing and use of proceeds were maintained as sales/barter increased
- ⑩ Most qualitative respondents reported that women were actively involved in decision making for groundnut marketing and use of proceeds and that there hadn't been any change over the past three years because households had been practicing joint decision making over this period

# Research question 4: Interventions aimed at maintaining women's control over sales and proceeds

What interventions assist in maintaining women's control over marketing/sales of groundnuts and control over the proceeds as commercialization efforts are expanded?



Main intervention: Gender messaging

# Gender messaging

## Promotion of joint budgeting encouraged women's participation in decisions about use of proceeds from sales of crops.

*“We encouraged them to start making budgets together from the beginning of the season until they sell their produce, that in itself is a big motivation to women. Even children are supposed to be involved as well.”*

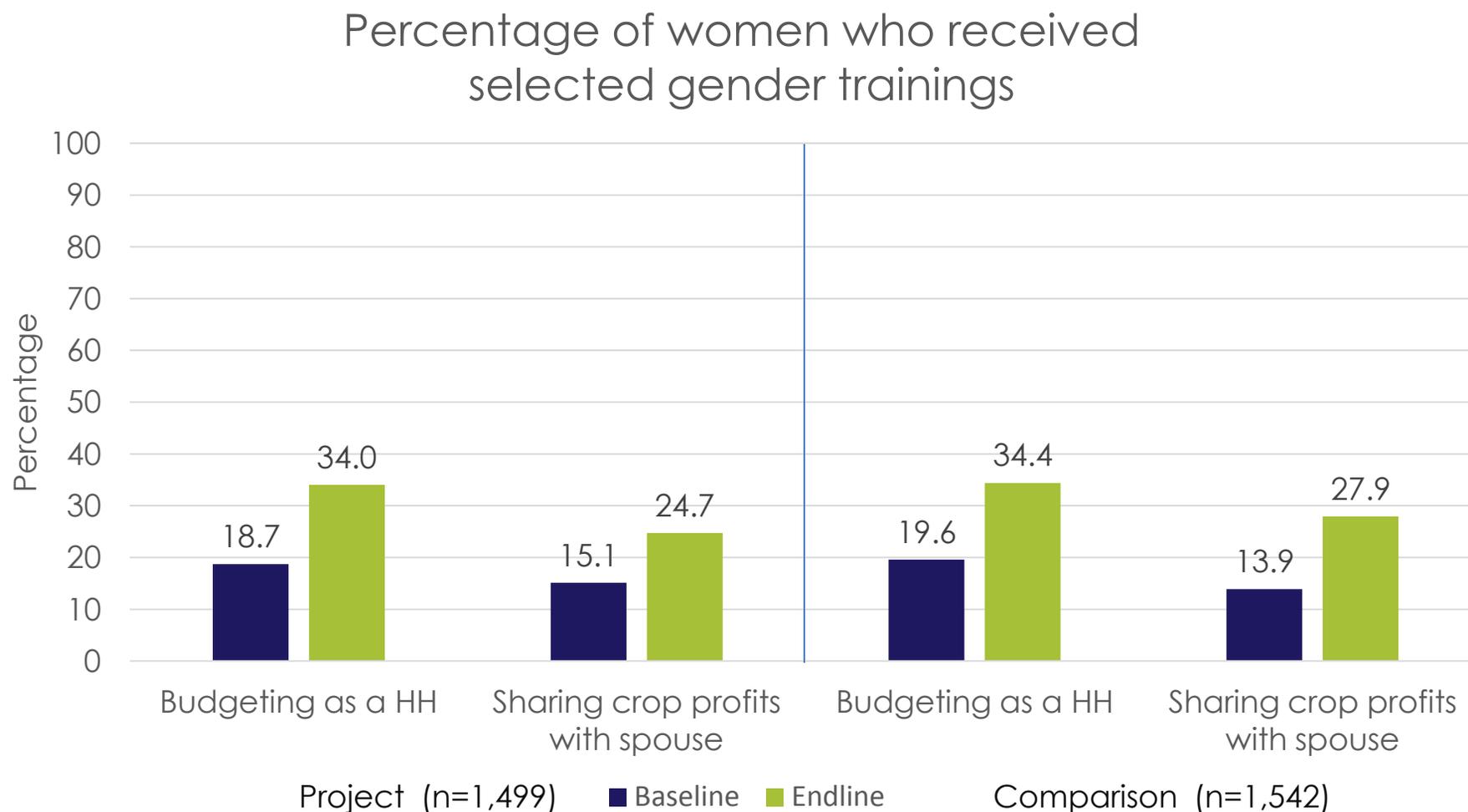
– Female CAD, Chipata

*“They taught us budget should be made by both wife and husband together and that we are supposed to be working together at home. They said a woman should not borrow money from somewhere without the husband knowing, but that in everything husband and wife must be open to each other and share information... for it is not good for people from one household to do things independent of the other.”*

– Female BLA lead famer, Lundazi

# Exposure to gender messages

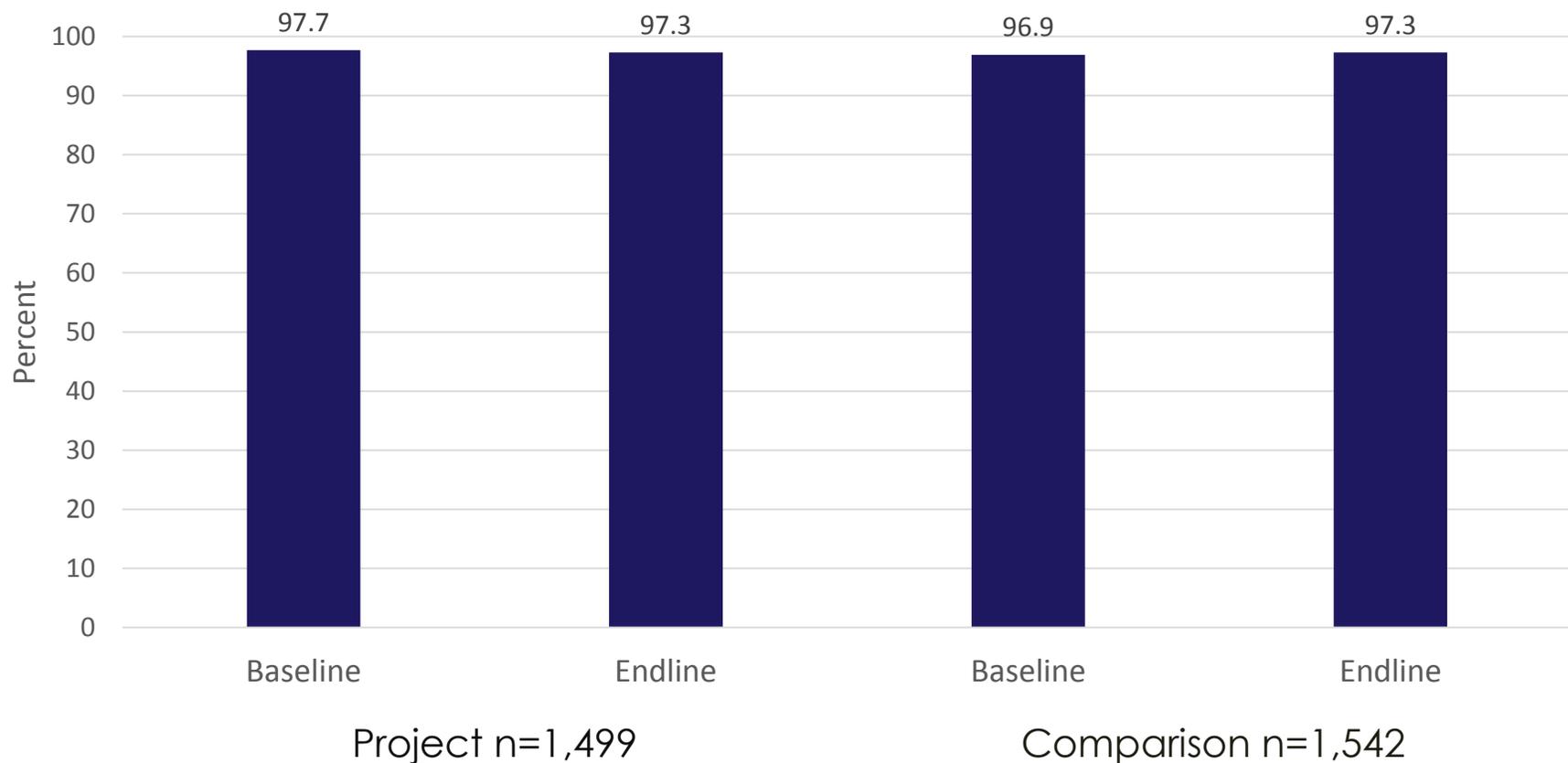
Women's exposure to gender messages in training increased over time and was similar in both the project and comparison domains.



# Changes in gender norms

**Almost all women agreed that couples should decide together how to spend money from crop sales.**

Percentage of women who agree that a husband and wife should decide together how to spend money from crop harvests



# Research question 4: Conclusion

What interventions assist in maintaining women's control over marketing/sale of groundnuts and control over the proceeds as commercialization efforts are expanded?

- ⑩ Qualitative respondents identified gender messages, particularly those related to joint budgeting, as facilitating women's involvement in decisions about use of proceeds from crop sales
- ⑩ In the quantitative findings, almost all women agreed that husbands and wives should decide together how money from crop harvests should be spent at both baseline and end line in both the project and comparison domains

# Conclusions

- Commercialization of groundnuts, as measured by volume of sales among HHs that grew groundnuts at both time points, increased, particularly in the project domain
- Women were not displaced from the GNVC by this increase in commercialization:
  - Women's participation in groundnut production increased in the project domain and stayed the same in the comparison domain
  - Women's participation in marketing/sales and control of proceeds from sales was maintained in both project and comparison domains
- Findings are consistent with PROFIT+ and BLA contributing both to increased commercialization of the GNVC and to maintaining women's place in that value chain

# Conclusions (continued)

However:

- Causal attribution to PROFIT+ and BLA is limited by the complex development environment in Eastern Province and the many external factors that influence the GNVC
- No significant change in production of groundnuts
- Exposure to the types of interventions implemented by PROFIT+ and BLA was often relatively low at the population level
- No consistent positive change in gender norms found in quantitative data
- Possible that the level of increase in the commercialization of the GNVC was not sufficient to attract male interest

# Questions?



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Additional contextual slides on  
interventions to increase  
commercialization of the GNVC

# Interventions aimed at increasing commercialization of groundnuts

- The research questions for the Zambia GNVC impact evaluation focus on whether women maintain control over groundnut production, marketing/sales, and proceeds as commercialization efforts are expanded
- Interventions aimed at increasing commercialization of groundnuts included:
  - Promotion of conservation farming practices and linkage to inputs (seed) to increase production
  - Linkage to markets to improve sales

# Promotion of conservation farming practices

Nearly all qualitative respondents were familiar with demonstration plots in their community managed by PROFIT+, BLA, or another organization and had visited them personally.

Many respondents reported they were also taught about:

- Ripping
- Making planting basins
- Use of manure

The practices demonstrated for groundnut production most frequently reported by respondents were:

- Plant spacing
- How to make compost/manure
- How to dry groundnuts using the Mandela cock method (help to reduce aflatoxin)
- Planting gliricidia trees to enhance soil fertility
- Crop rotation and the use of herbicides

# Promotion of conservation farming practices

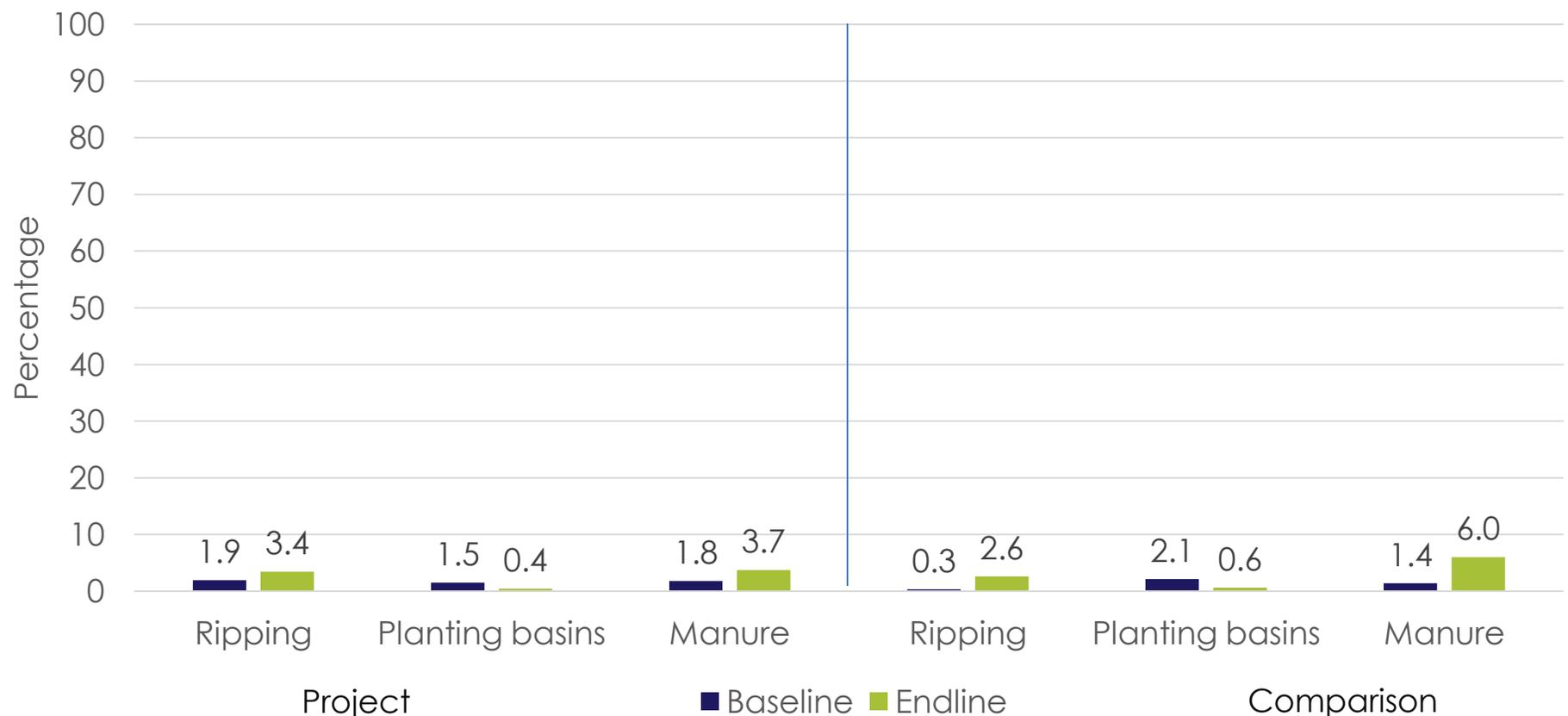
Qualitative respondents reported improved yields from conservation farming practices:

- *“There are a lot of benefits in using conservation farming. Our yields have greatly improved and we are able to maintain soil fertility in our fields.”*
  - Female farmer, Lundazi (FGD participant)
- *“Before COMACO, we used to grow groundnuts in ridges, but when they came they discouraged it and introduced us to conservation farming which is very good looking at the current rainfall patterns. We do not receive rains the way we used to, but with little rains we have good yields.”*
  - Male farmer, Lundazi

# Promotion of conservation farming practices

Use of conservation farming practices on groundnut fields was low at the population level in both project and comparison domains

Percentage of groundnut field where selected conservation farming practices were used



# Linkage to inputs (seed)

- Both BLA and PROFIT+ promoted the improved groundnut seed varieties MGV4, MGV5, and Chishango
- BLA's input strategy was to supply farmers with groundnut seed at the start of the agricultural season and recover an agreed upon amount of seed at harvest
- PROFIT+'s input strategy was to strengthen the legume seed value chain to make more seed available on the market, and to link farmers to inputs through CADs

# Linkage to inputs (seed)

Use of the promoted seed varieties is low at the population level. There was a shift from local groundnuts to Chalimbana.

Percentage of fields planted with:	Project		Comparison	
	Baseline	End line	Baseline	End line
MGV-4	2.1	1.5	0.7	1.0
MGV-5	1.3	0.5	0.2	0.1
Chishango	2.5	5.5	0.8	1.9
Chalimbana	18.4	27.8	31.2	45.9
Local groundnuts	36.7	15.2	38.5	14.1
Hybrid groundnuts	1.7	0.7	0.6	0.2
Recycled hybrid groundnuts	1.8	1.4	1.5	3.4
Kanjute	17.0	22.7	14.0	17.0
Makuru Red	12.0	13.0	8.8	3.9
Other	6.3	10.4	3.5	10.5
Don't know/refused/missing	0.1	1.3	0.3	2.0
Total	100.0	100.0	100.0	100.0
Number of fields	1,590	1,298	1,580	1,224

# Linkage to market

While BLA's approach included directly buying groundnuts from beneficiaries, PROFIT+ largely sought to link smallholders to buyers through CADs.

Some PROFIT+ and BLA beneficiaries reported that selling groundnuts through CADs or to BLA (COMACO) was a positive experience—prices were good, weighing scales were accurate, and the need to transport groundnuts for sale was eliminated:

- *“The price we are receiving now is far better than it used to be previously, especially if we sell to the [community] agro-dealer ...the presence of the agro-dealer has really helped to change things here.”*  
– Male community leader, Chipata
- *“They [COMACO] come to us...transport cost would have been a problem for us. But they come to buy here and they come with their own transport to get the groundnuts.”*  
– Female farmer, Lundazi (IDI respondent)

# Linkage to market

However, other PROFIT+ and BLA beneficiaries lamented that CADs and COMACO did not consistently buy groundnuts each year, or could not buy all that was produced, resulting in an unreliable market:

- *“We used to sell our groundnuts to COMACO...but for the past few seasons they have bought from very few farmers. They were buying, but not compared to previous years. We had a very active lead farmer who used to encourage even men to be working together with their wives to grow groundnuts, but they have become inactive as well.”*  
– Male community leader, Lundazi
- *“We are actually complaining because we do not understand why she [CAD] stopped buying...We take our groundnut to Malawi or the Lundazi boma and sell...sometimes when we take the groundnuts to the boma we find that the scales are tampered with and so we lose out.”*  
– Female farmer, Lundazi

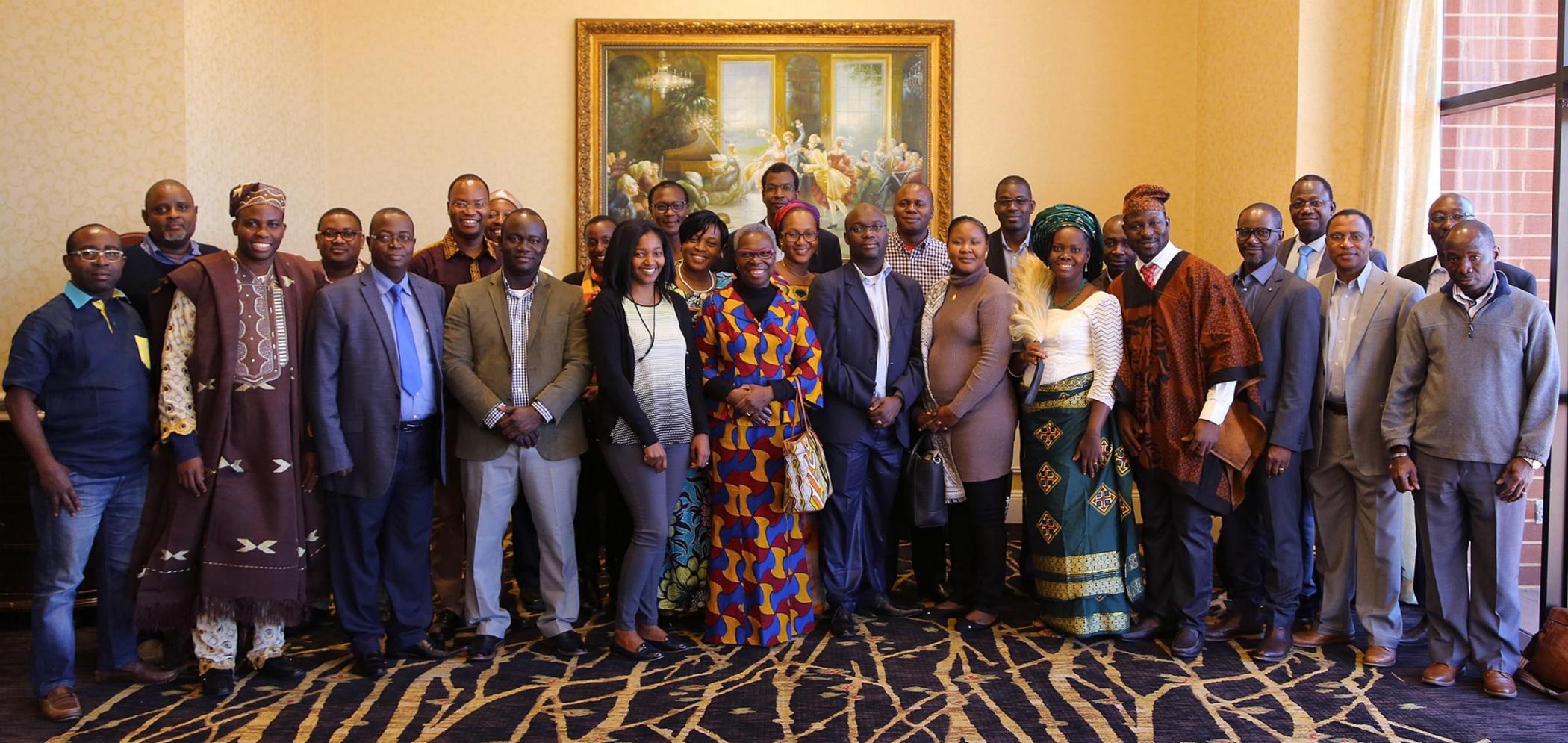
# Linkage to market

Those that did not sell to either CADs or COMACO reported that the market could be poor and unreliable, with low prices. These respondents reported they sold to mobile vendors or their neighbors:

- *“Sometimes when you grow a lot of groundnuts you find there is not market for your crop. The only way our groundnuts finish is when people pass by buying groundnuts...people put that much more attention into growing maize and soya, saying that groundnuts have little market.”*  
– Female farmer, Chipata
- *“There is no reliable market other than the vendors, but the prices they offer are not helping farmers. We do not have an alternative market apart from the vendors. We are forced to sell at their prices because we need money.”*  
– Male farmer, Chipata
- *“There is no market here. If you are to sell groundnuts it means you sell to your neighbors and at a low price.”*  
– Female farmer, Lundazi

# Linkage to market

- Sales to COMACO in the project domain increased from 1.6% at baseline to 2.3% at end line for the largest sale of shelled groundnuts, and from 1.7% to 7.2% for the largest sale of unshelled groundnuts
- In the comparison domain, sales to COMACO were negligible for the largest sale of shelled groundnuts and increased from 0% to 4.3% for the largest sale of unshelled groundnuts
- CADs were added as a category for the end line quantitative survey but were rarely mentioned as the buyer of the largest sale of shelled or unshelled groundnuts



Global, five-year, \$232M cooperative agreement

Six partners, led by the University of North Carolina at Chapel Hill (UNC)

**Strategic objective**

Strengthen capacity in developing countries to gather, interpret, and use data to improve health

# Local partners and capacity building are key

- The prime is UNC and its partners are:
  - ICF
  - John Snow, Inc.
  - Management Sciences for Health
  - Palladium
  - Tulane University
- MEASURE Evaluation works with more than 72 smaller subawardees in more than 27 countries
- Over 26 percent of project funding goes back to minor subawardees

# Global footprint (more than 40 countries)

