

Agriculture support services: Direct effects, complementarities and time dynamics

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UIUC Revalorising Extension: Evidence and Practice

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What we do?

- Implement a multifaceted program with NASFAM (in Malawi)
 - Newly registered farmer clubs
 - Provide intensive support over known, limited time period
- Explicitly vary certain elements:
 - One-season series of large framed cash *or* input transfers
 - Different modes of extension support (Lead farmers vs Intensive extension)
 - Combination of above services
- Examine impacts, using RCT
 - One and two years post implementation
 - Outcomes: agricultural production, productivity, input use, knowledge and adoption of practices, and welfare

Design: Treatments (Transfers/Inputs)

- Group 1: Cash Transfers

- Three transfers totaling approximately 84USD (\$36; \$22; \$26)
- Strategic timing of disbursements

- Group 2: Input Packages

- Combination package equilibrated to same value as inputs
- Includes: Seed, hoes, storage bags, inoculant, ganyu

- Group 3: Control (no transfer)

Design: Treatments (Extension services)

– Group 1: Intensive extension

- Two key aspects:
 - Expert technical advice from Agricultural Field Officers (AFOs) [\[Visual Aid\]](#)
 - Development of farm management plan (Accounting exercise of expected income and expenses, timing of activities, develop 3 focal goals for farm) [\[Accounting Exercise Example\]](#)

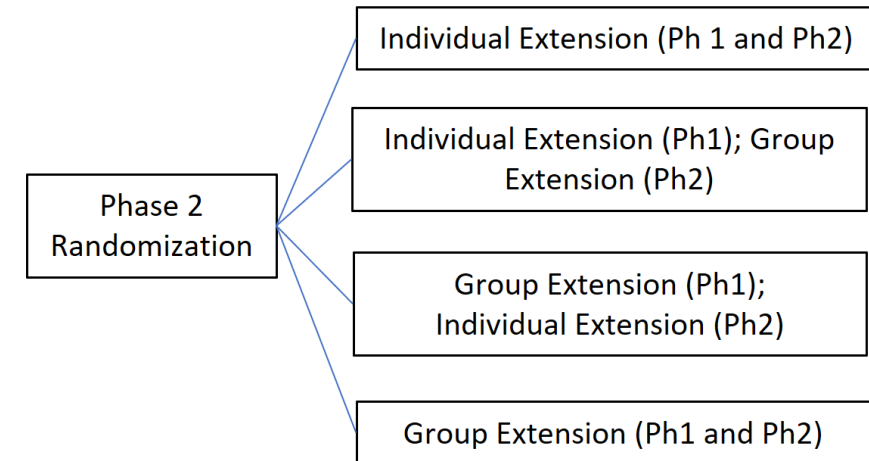
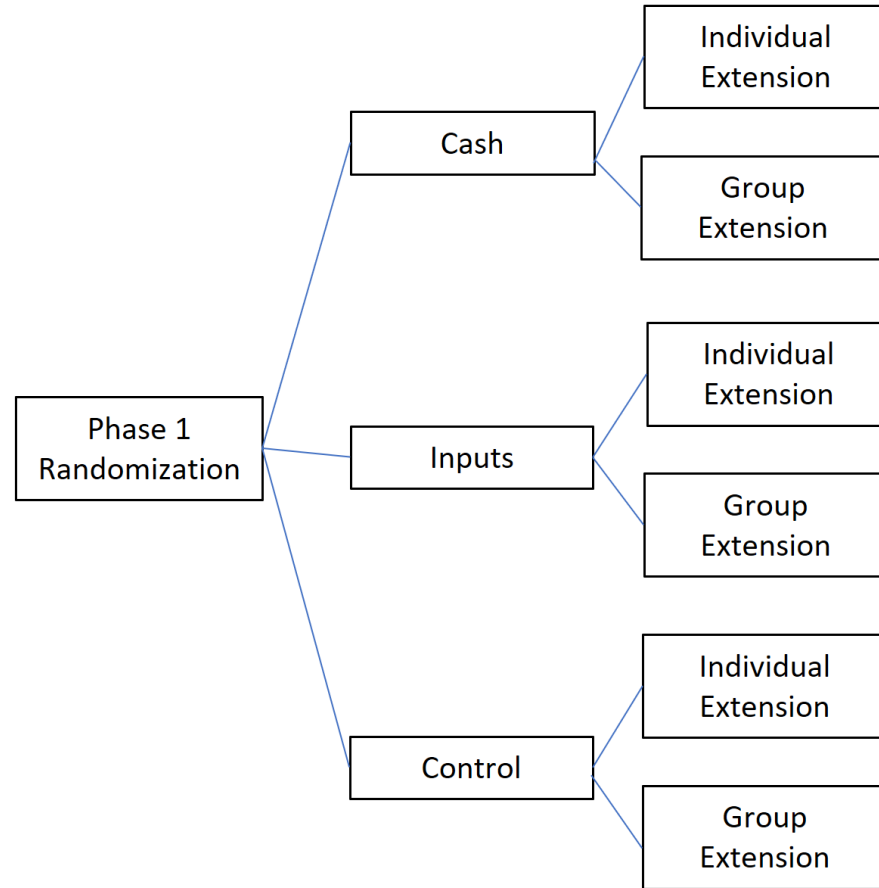
– Group 2: (Primarily) Lead farmer extension

- Group based activities led by lead farmer (e.g. demonstration plots; adopt practices on own fields; trained by extensionists)

• Rerandomization of treatment in year 2

- Group 1: Two years of intensive extension
- Group 2: One year of intensive extension (in year 1)
- Group 3: One year of intensive extension (in year 2)
- Group 4: No intensive extension

Timeline and Experimental Variation

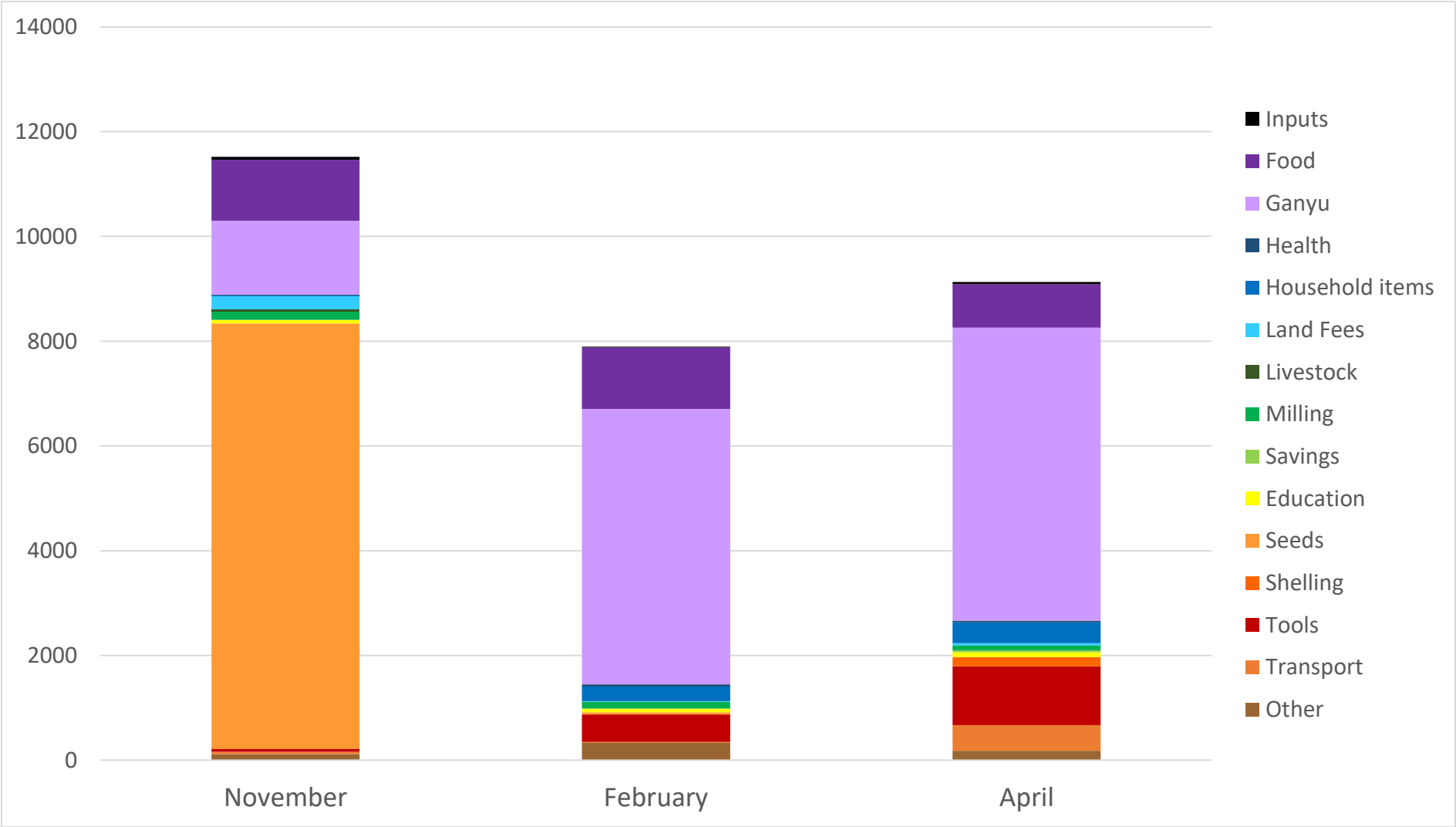


Interventions

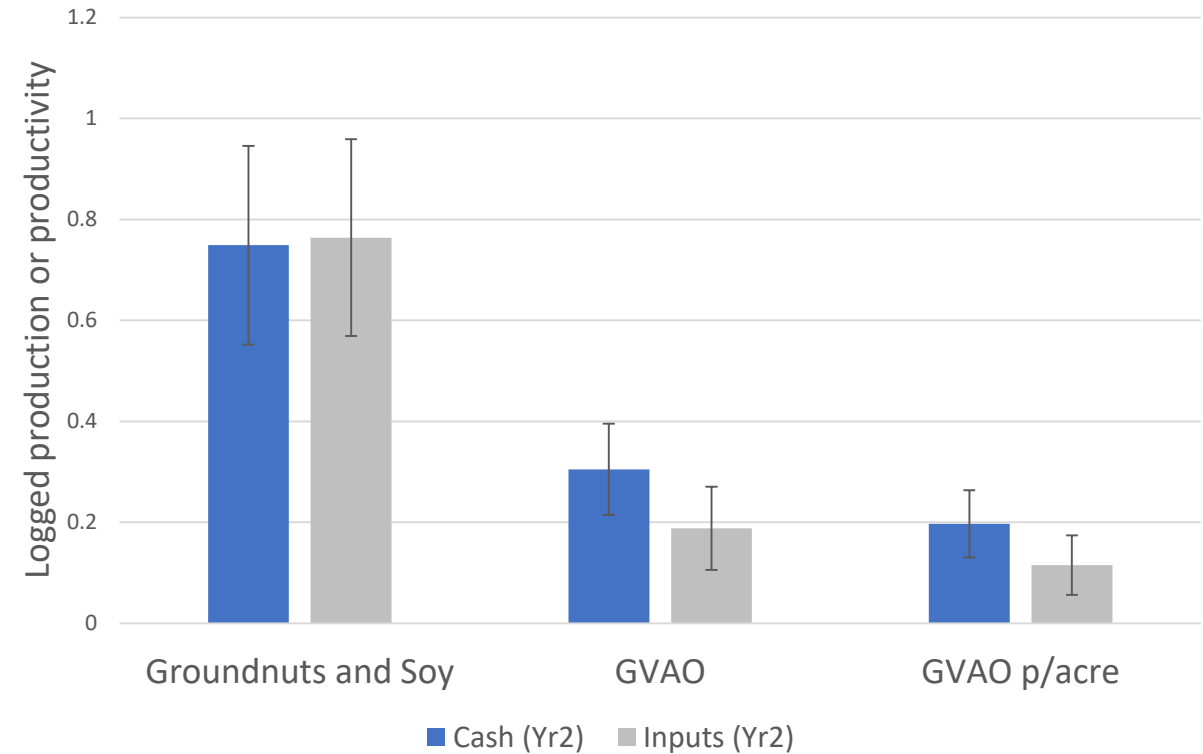
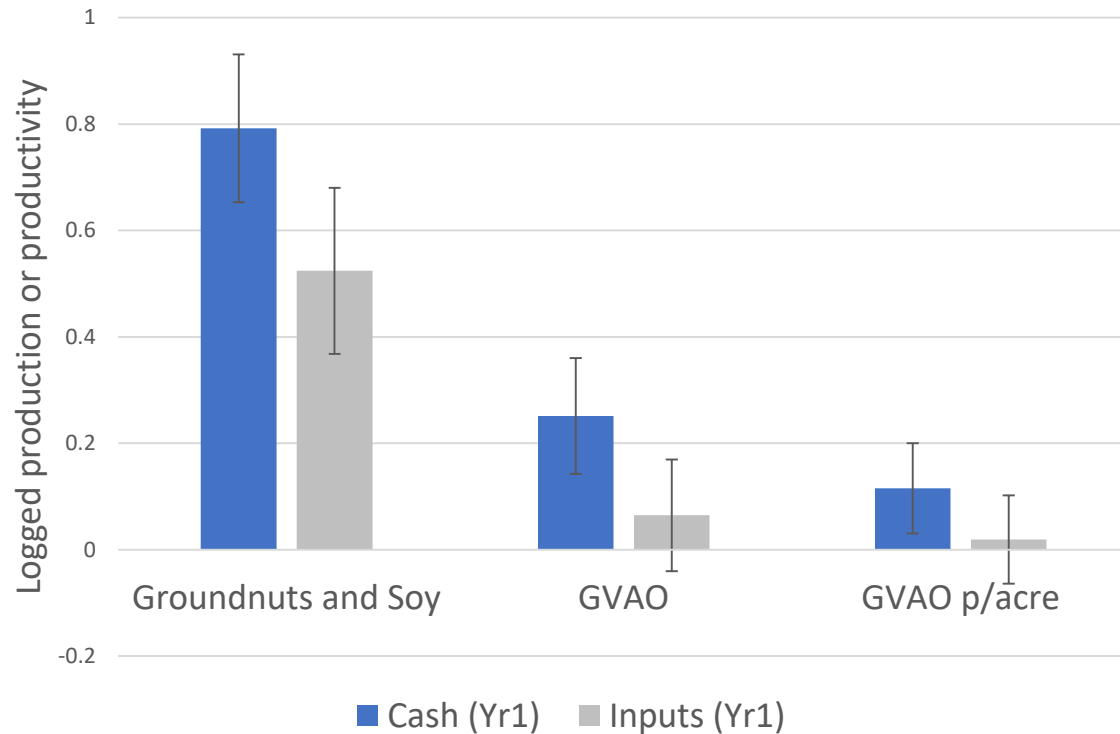
Map of results

- Transfer impacts
- Extension impacts
- Complementarities between transfers and extension

What did people say they spent the money on?



Production and productivity impacts (logged)



- Production of focus crops increases substantially in both years
- Overall GVAO increase in SR for cash
- Overall GVAO increase in MR for cash and inputs (approximately 20%)
- Suggestive improvements to productivity in SR (cash), significant improvements in MR

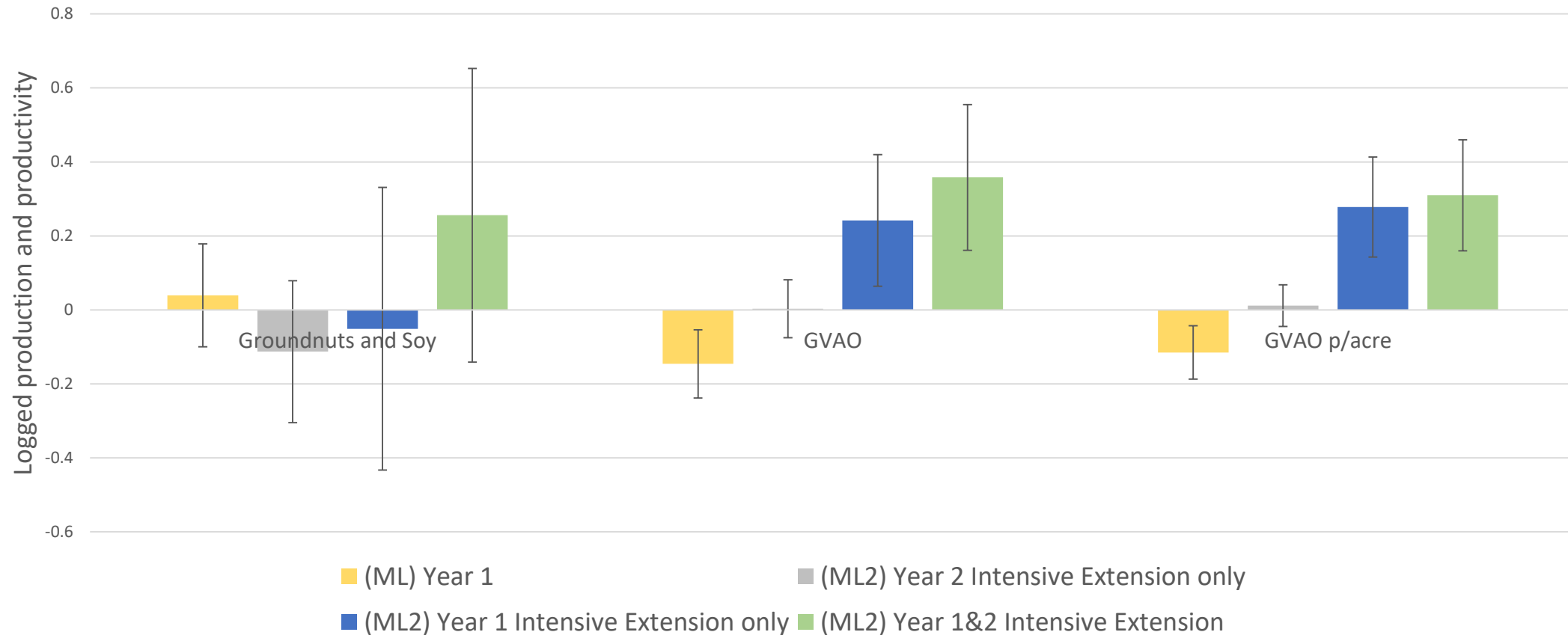
Transfer Impacts

- After the first year
 - Transfers lead to increases in production
 - some evidence that cash is more effective than inputs
 - Driven by investments in agricultural assets, and increased pesticide and ganyu use
- After the second year
 - Sustained increases in GVAO, cash and inputs similar impacts
 - Production improvements driven by investment in agricultural inputs (fertilizer and ganyu)
- Gender disaggregated results: Similar for males and females; but pattern of results suggest ***larger impacts for female farmers***

Map of results

- Transfer impacts
- Extension impacts
- Complementarities between transfers and extension

Intensive extension impacts: Production and productivity



- No discernible impact on production or productivity attributable to intensive extension in SR
- BUT, suggestive deferred benefits to intensive extension
- That are similar in magnitude to repeated intensive extension

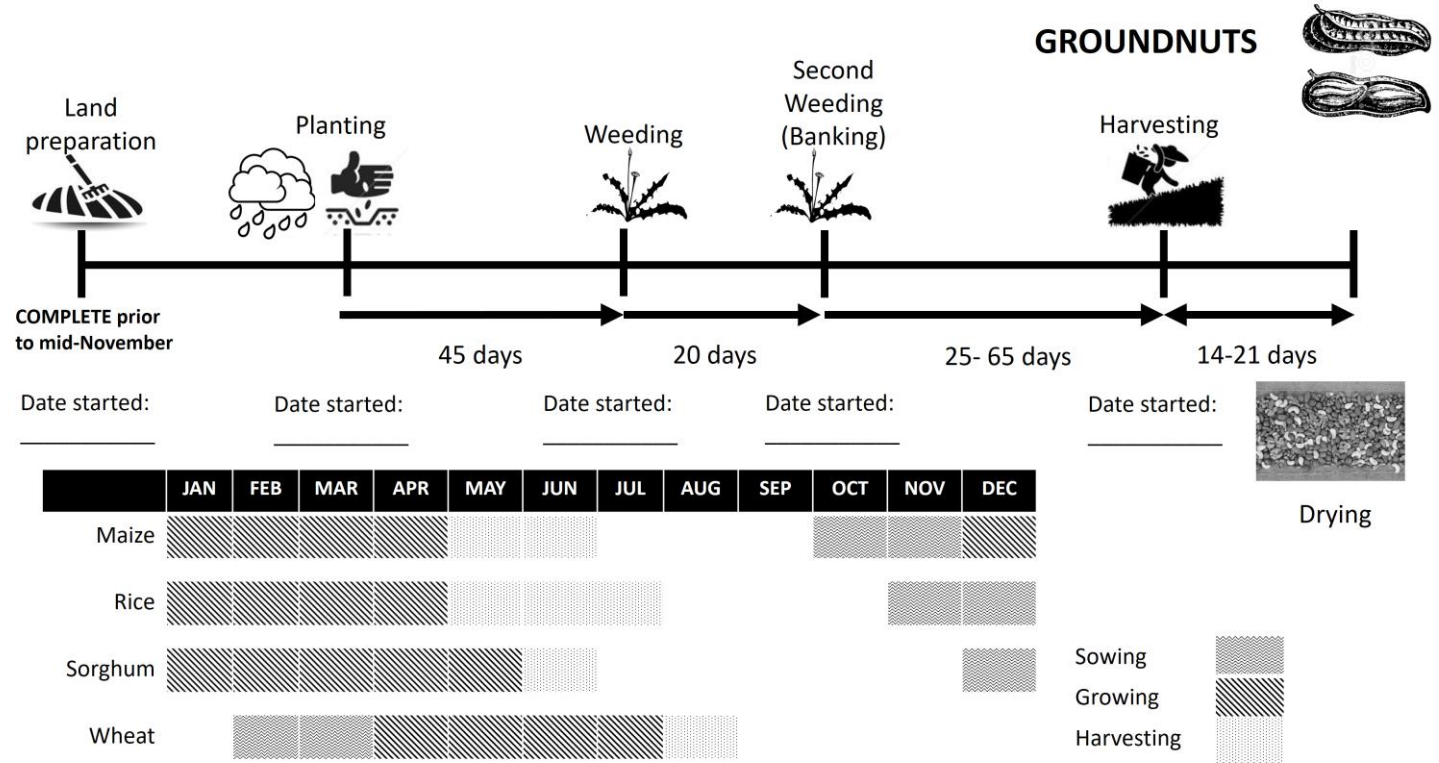
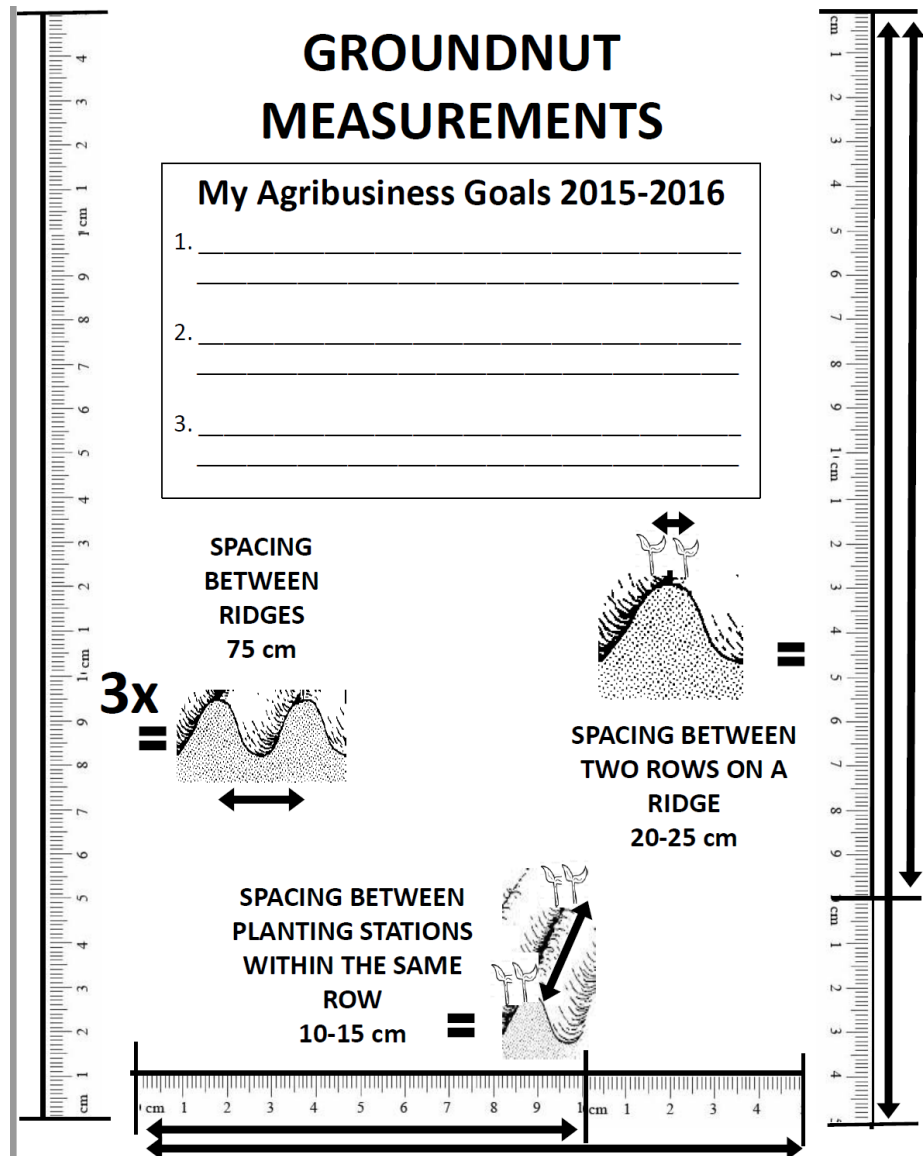
Intensive extension impact summary

- Year 1:
 - No evidence, that intensive extension increased agricultural production
 - *But*: do observe increased adoption of labor intensive practices which may explain deferred productivity benefits
- Year 2:
 - Like before, no direct impact during year of intensive extension (1 dose) coupled with increased adoption of labor intensive practices
 - Deferred benefits to intensive extension (driven by males)
 - Likely driven by adoption of agricultural practices that have deferred production gains
 - Repeated extension yields largest production gains (larger for females)

Conclusions

- The transfers increased production for beneficiary households by more than the value of the transfer
 - Driven by increased investment in their farms: acquisition of agricultural assets and increased expenditure on agricultural inputs (pesticide and ganyu in yr 1; fertilizer and ganyu in yr 2)
- No direct impacts from intensive extension in the first year
- BUT: evidence suggests short term changes to practices (specifically those that are labor intensive) that result in deferred benefits
- Important complementarities exist between the extension and transfer treatments in the first year: intensive extension increased efficacy of transfers
 - Inconclusive interactions in the second year

Visual Aids (support technical advise)



[\[Back to Treatment Description\]](#)

Accounting exercise excerpt of FMP

Crop	Estimated Area available (Ha)	Actual Area Available (Ha)	Estimated yield per unit area (Kg/ha)	Total production expected (Kg) (A x C)	Quantity expected to sell (Kg)	Expected price (MK/Kg)	Expected sales revenue (MK) (DxE)
	A	B	C	D	E	F	G
Maize							
Tobacco							
Soya							
Groundnuts							
Other, specify: _____							
Other, specify: _____							
Other, specify: _____							

Expense	MAIZE	TOBACCO	SOYA	GROUNDNUTS	Amount (MWK)	Source of funds
Hoes						
Panga-Knives/Machete						
Slashers						
Seed (CG 7 or Nsinjilo)						
Inoculants						
Fertilizer: Basal dressing						
Fertilizer: Top dressing						
Pesticides (Pest Control)						
Herbicides (Pre planting, Pre emergence and Post emergence).						
Land clearing						
Tilling						
Ridge making						
Planting						
Weeding						

6.0 NET FARM INCOME (D-G)

Crop Sales (MK)	Livestock Sales (MK)	Livestock by-product Sales(MK)	TOTAL REVENUE (MK)	Crop Expenses (MK)	Livestock Expenses (MK)	TOTAL EXPENSES (MK)	TOTAL INCOME (MK)
A	B	C	A+B+C=D	E	F	E+F=G	D-G=H