



Is seeing really better than listening? The impact of inoculant technology dissemination via video and radio listening clubs in northern Ghana

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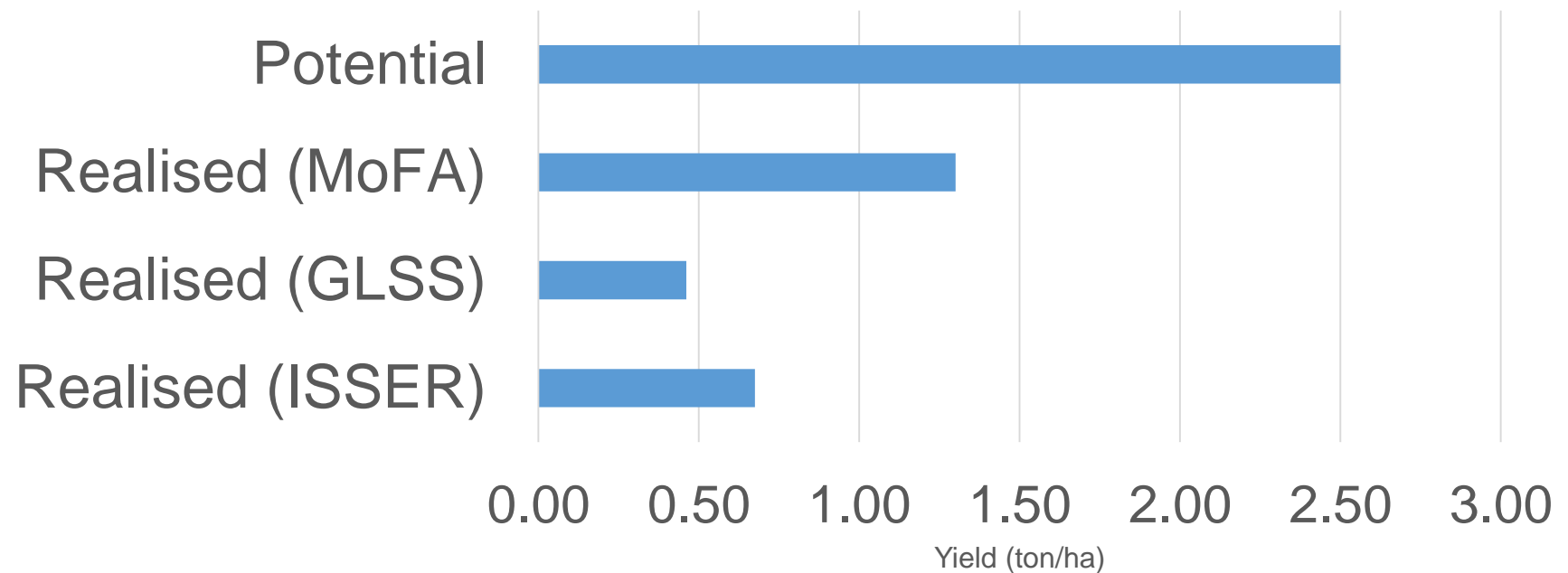
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Policy Issue (1/3)

- Grain legumes (cowpea, soybean, groundnut) are important for food security and incomes



Cowpea yields



Policy Issue (2/3)

- Part of the problem is N deficient soils in the presence of credit market constraints

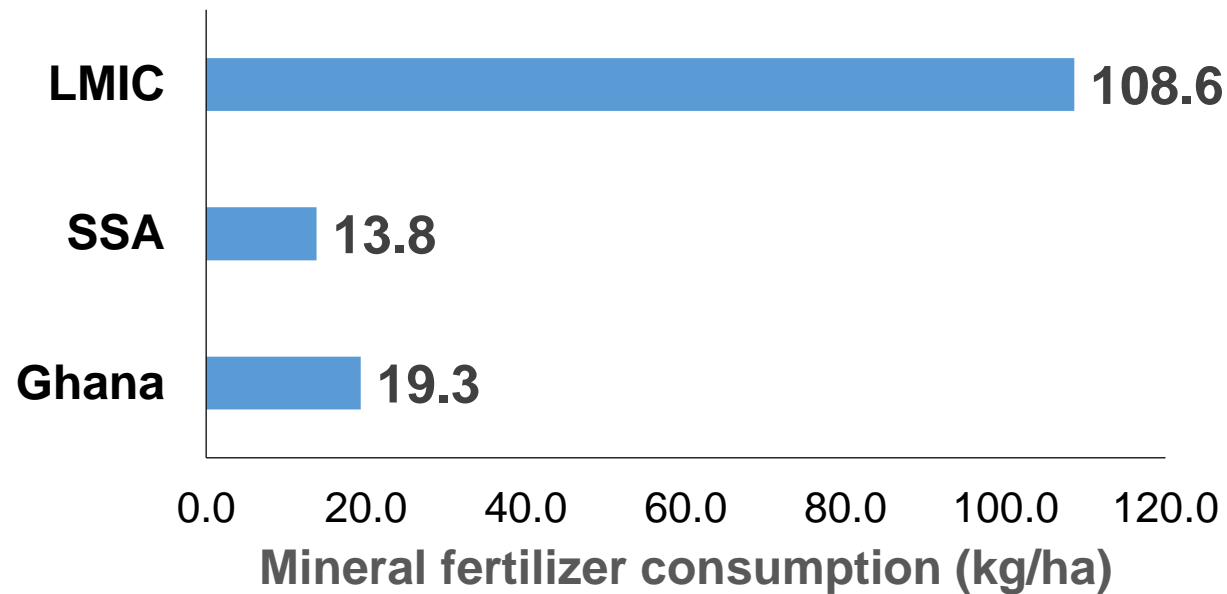


Figure 2. Decade average fertilizer consumption in Ghana is 18% the LMIC mean



Policy Issue (3/3)



- Inoculants could help optimize Biological Nitrogen Fixation (BNF)—a solution to the N deficit problem
- Inoculants are cheaper, environmentally friendly and effective if handled well
- Increases yields of other crops grown in rotation or intercropped with legumes
- But which channels of technology dissemination would be most effective in boosting adoption of inoculants?



Context



- The Savanna Agricultural Research Institute (SARI) applied and got a grant from AGRA to produce inoculants and make them available to farmers through private sector collaboration
- SARI worked with FBOs, AEAs & input dealers to communicate the technology to smallholder farmers in 26 districts of the 3 Northern regions
- Among the channels of communication were video documentaries (VDs) and radio listening clubs (LCs)



Key findings

- In this study we show that:

1. The VDs and LCs had no impact on resource (land) allocation to legume production.
2. The VDs increased inoculant adoption by 4% points but the LCs had no impact
3. Inoculant use increased by 3% points more for farmers who watched the VDC than for those who were reached through the LCs
4. There was no evidence of impact on legume yields and profits



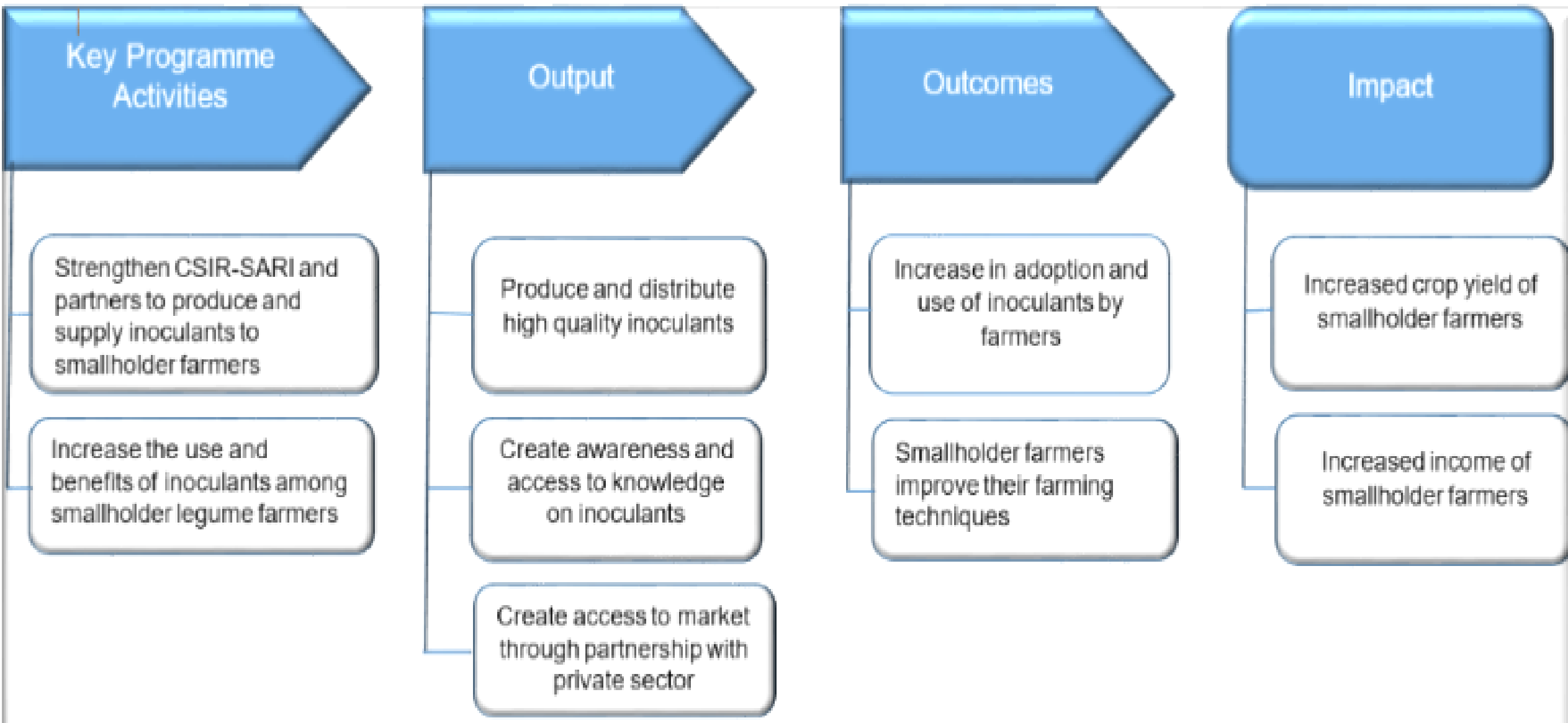
AGRA'S Soil Health Program



- Because Africa has some of the world's most degraded soils AGRA put together a Soil Health Program (SHP) to help tackle it.
- SHP aim: *“promote locally appropriate soil management practices that combine the use of organic matter and fertilizers to restore soil health in an approach referred to as Integrated Soil Fertility Management (ISFM)”*



Theory of Change



Disseminating the Technology



- Farmers will not use a new technology just because it worked elsewhere.
- They have to be convinced that it will work for them.
- How can farmers be convinced that this new technology will work for them?
- Different communication channels have varying effects on learning and adoption



The Experiment



- 113 communities (Northern, 85; Upper East, 8; Upper West, 20)
- Random assignment of communities

Arms	Freq.	Percent
Control	39	34.6
Video	37	32.7
Radio	37	32.7

- 10 farmers (farm households) per community



The Video Documentary Treatment



- A 7-minute video documentary using community mobile video equipment addresses the following issues:
 - What inoculants are
 - The benefits of using inoculants
 - How to store and use inoculants properly
 - When to plant inoculated seeds
 - Other yield enhancing agronomic practices such as the use of improved seeds, timely weeding etc.



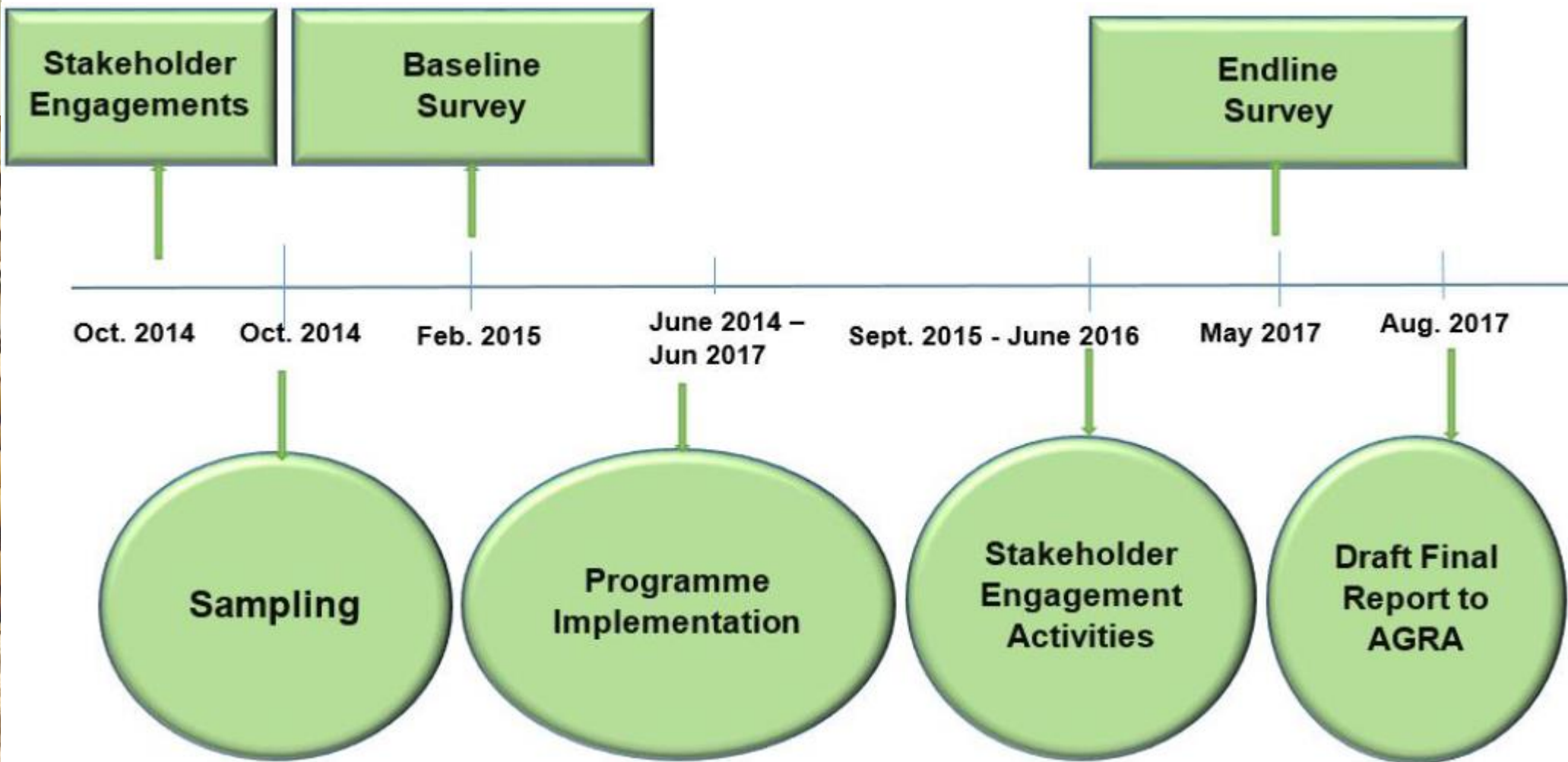
The Radio Listening Club Treatment



- 108 radio broadcast on community/district radio stations covering the same issues addressed by the VDs
- 41 LCs were organized by community extension agents
- On specific days of the radio broadcasts, LC members come together to listen and interact with each other as well as the resources persons by calling into the program.



Timelines



Indicators



1. Farmer behavior
 - a) Share of land to legumes
 - b) Improved seed adoption
2. Impact indicators
 - a) Inoculant adoption
 - b) Legume yields
3. Outcome indicators
 - a) Legume profits
 - b) Crop incomes

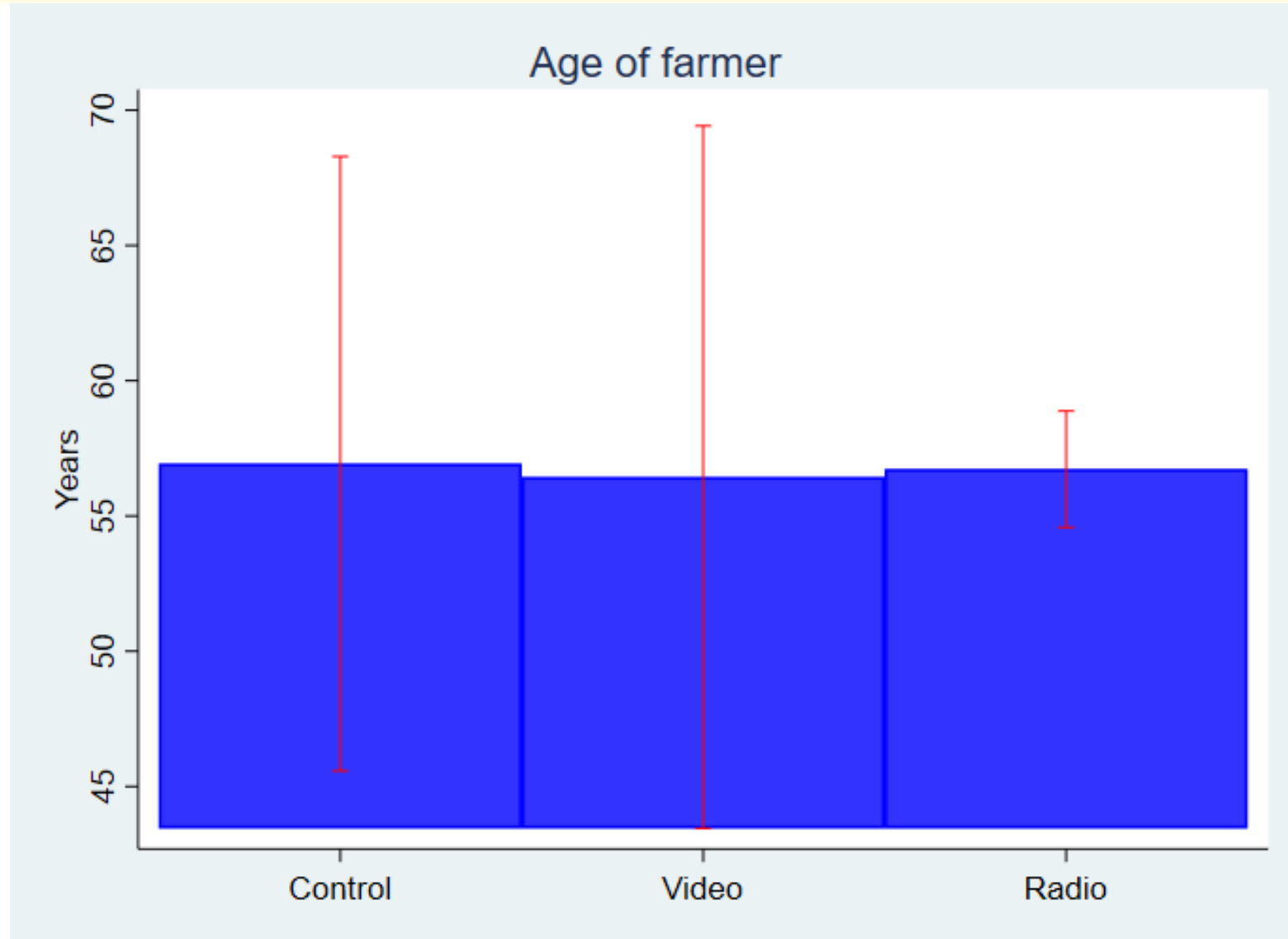




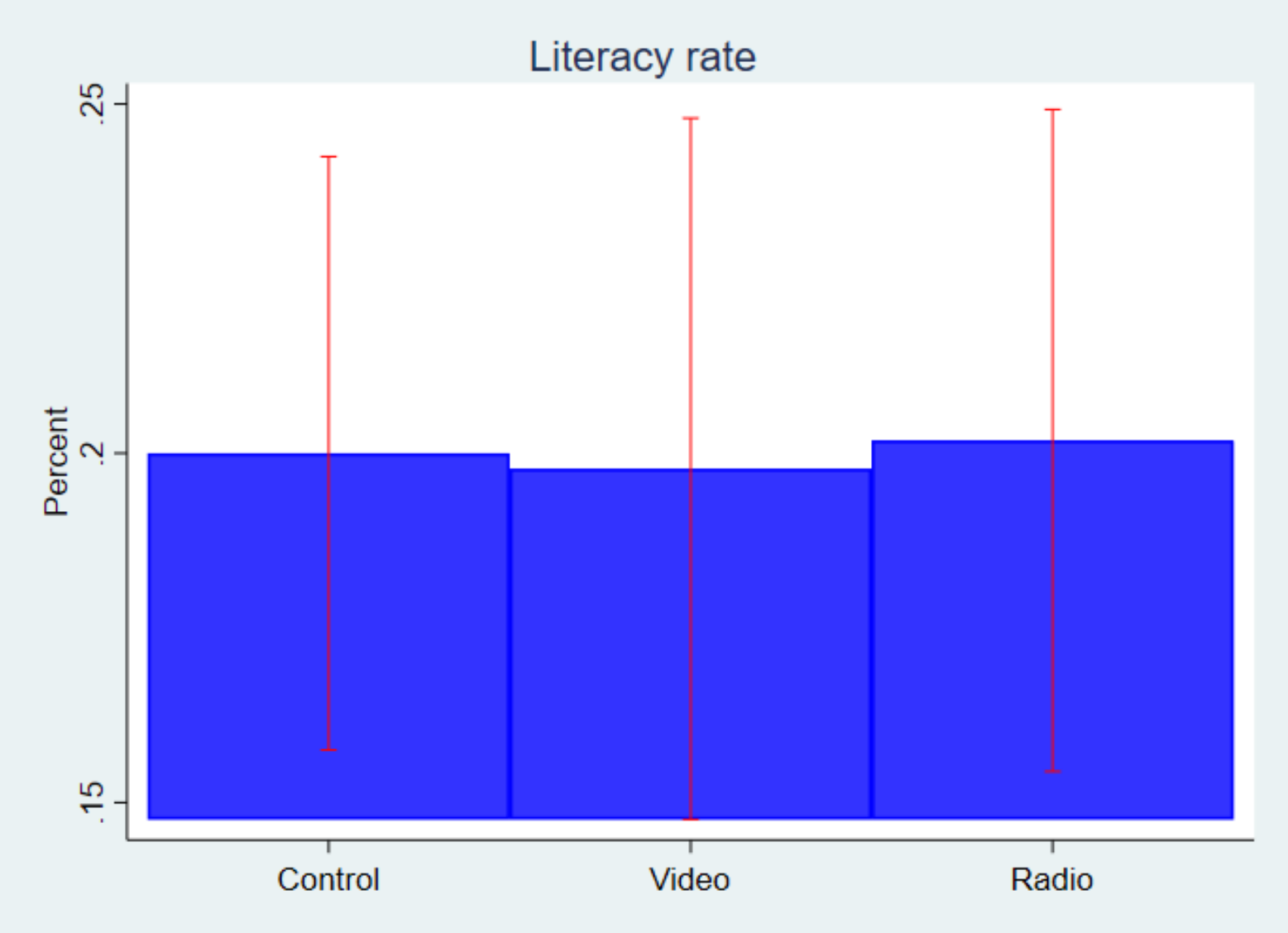
SELECTED FARMER & FARM HOUSEHOLDS CHARACTERISTICS AT BASELINE



Key Characteristics at Baseline

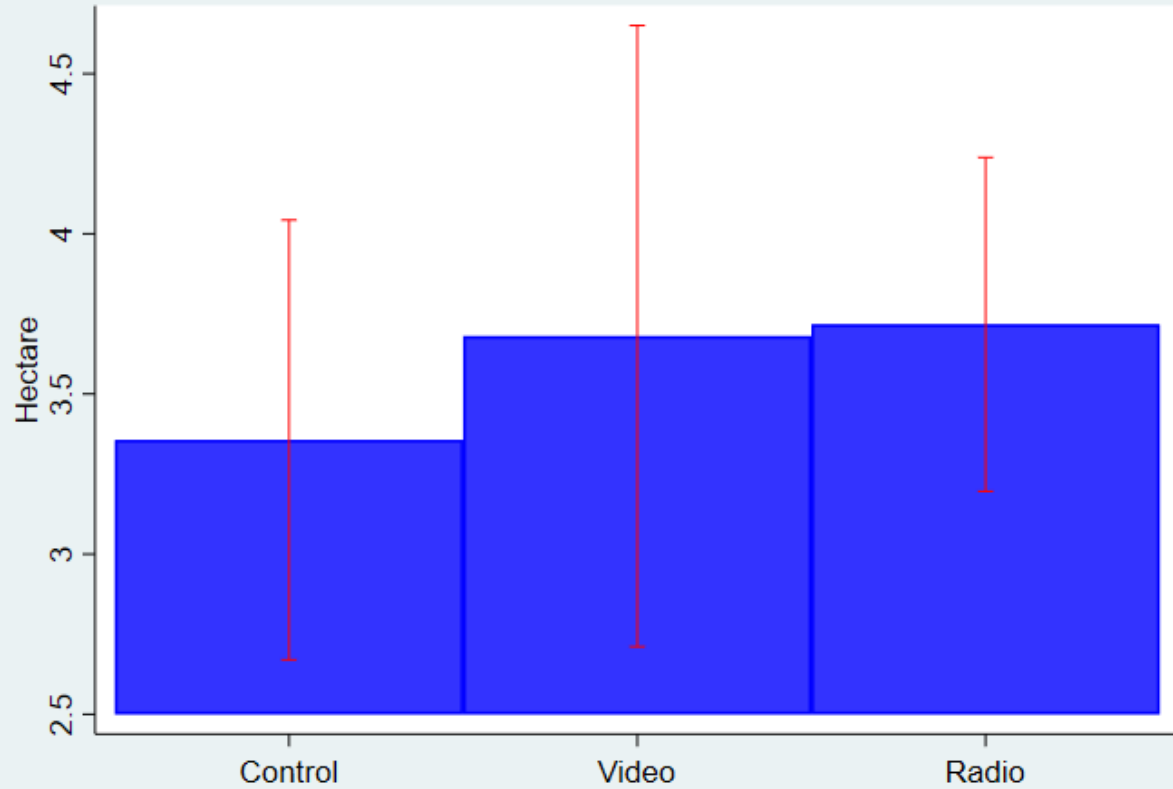


Key Characteristics at Baseline

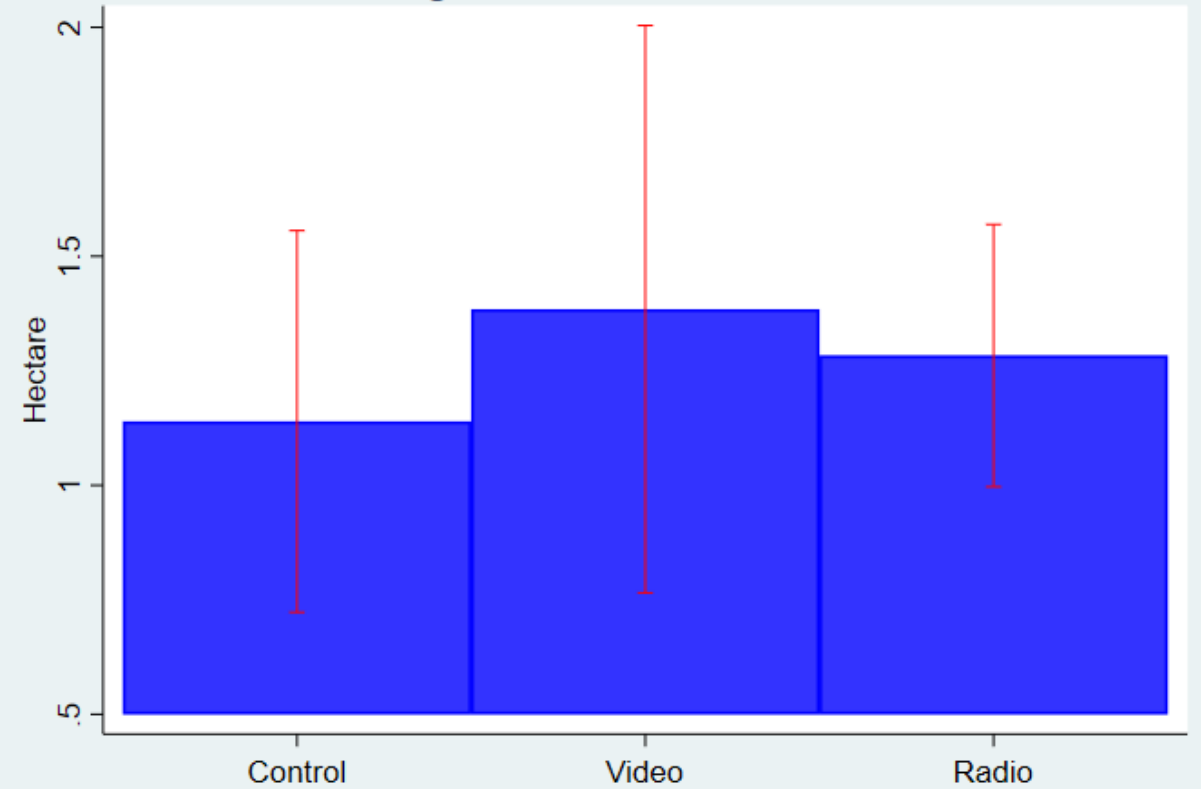


Key Characteristics at Baseline

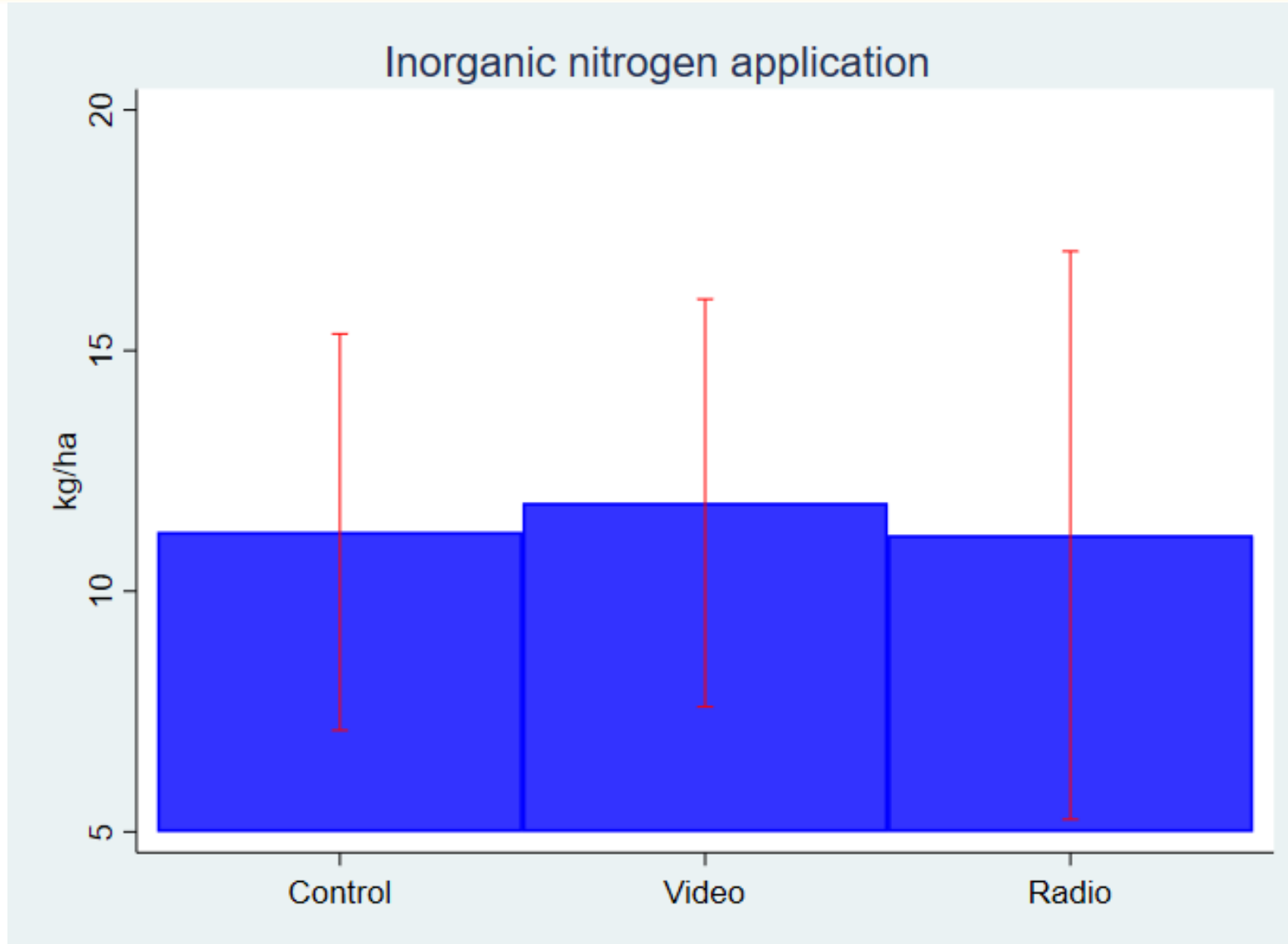
Total cultivated area



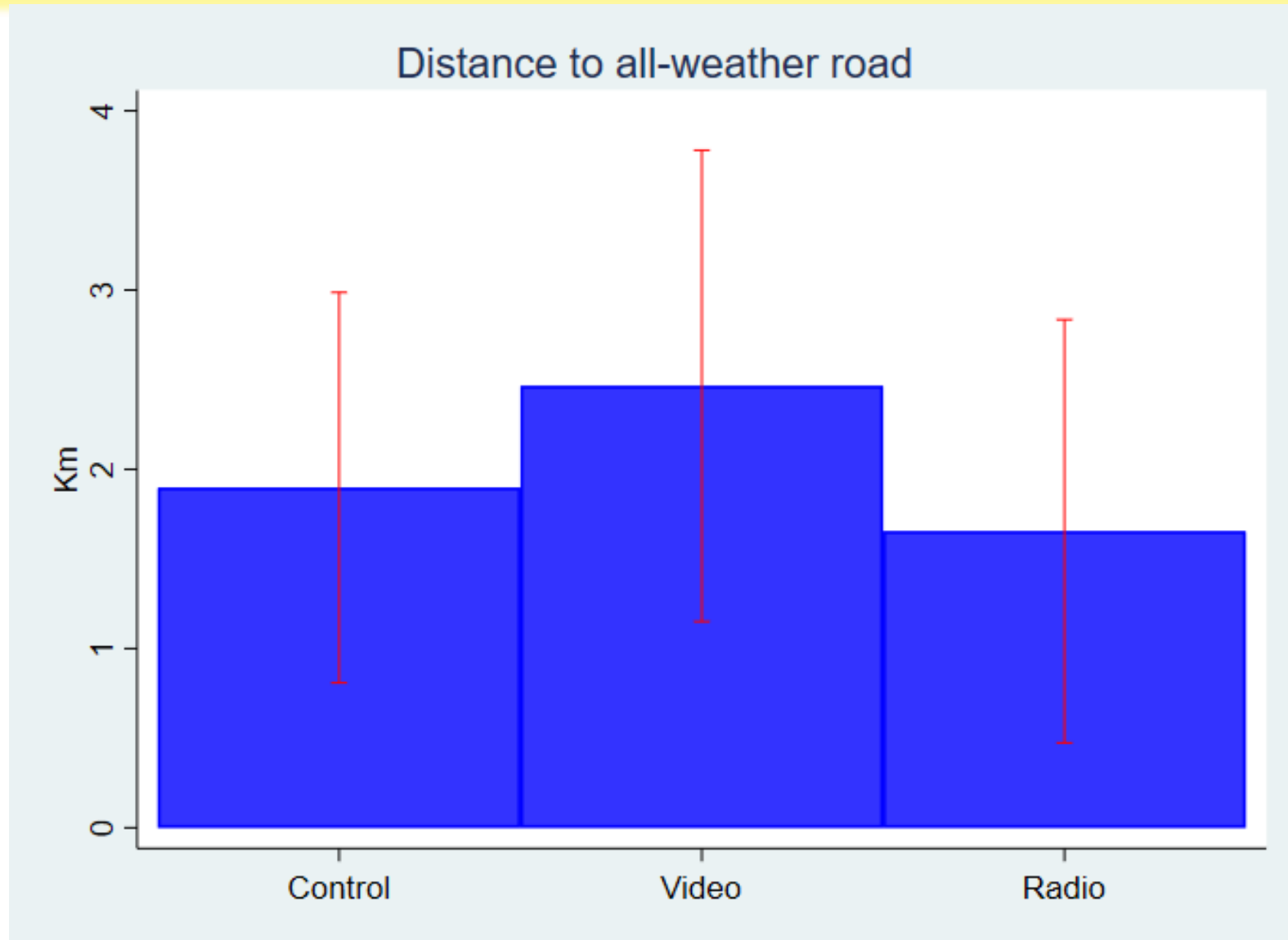
Legumes cultivated area



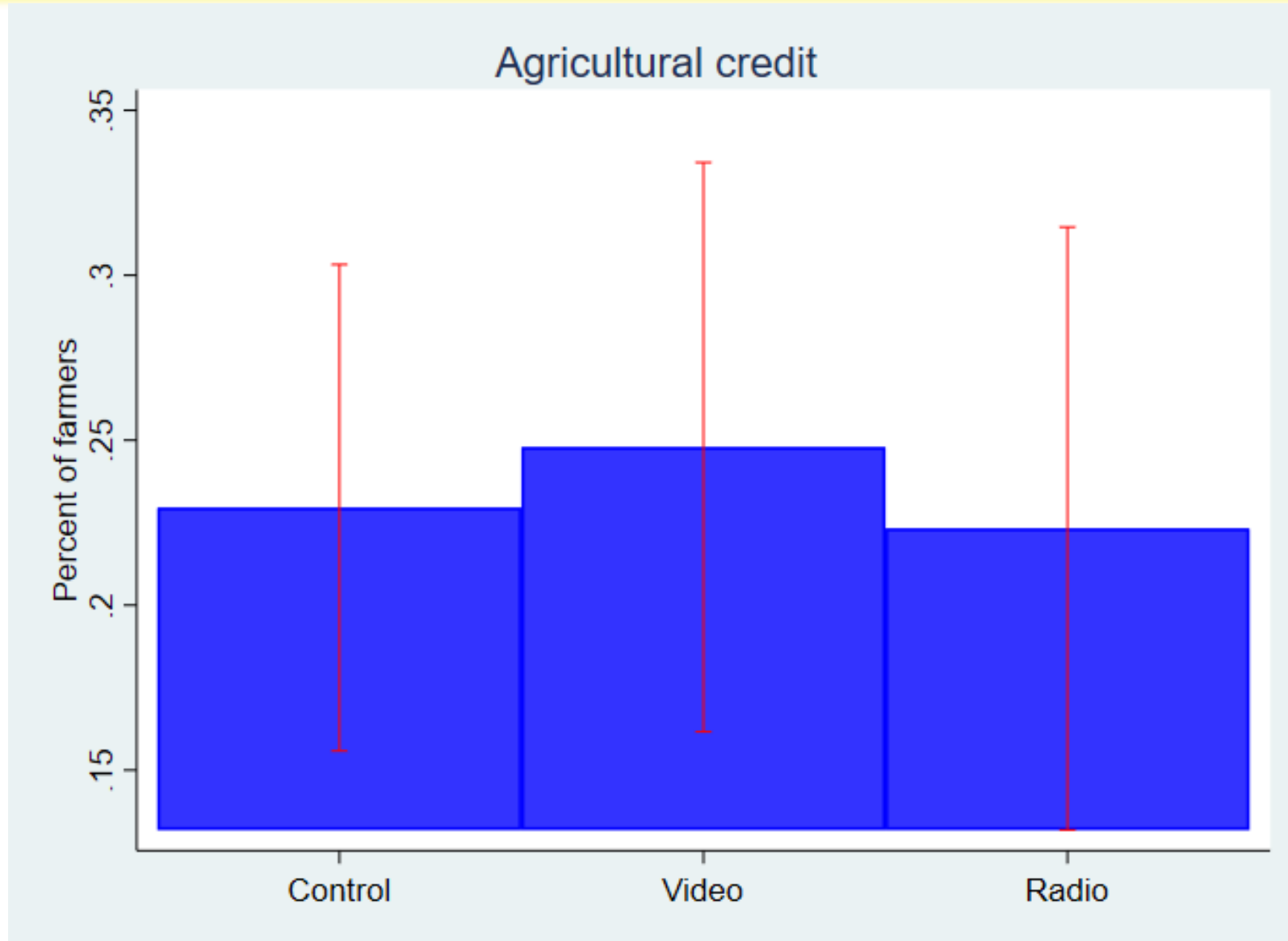
Key Characteristics at Baseline



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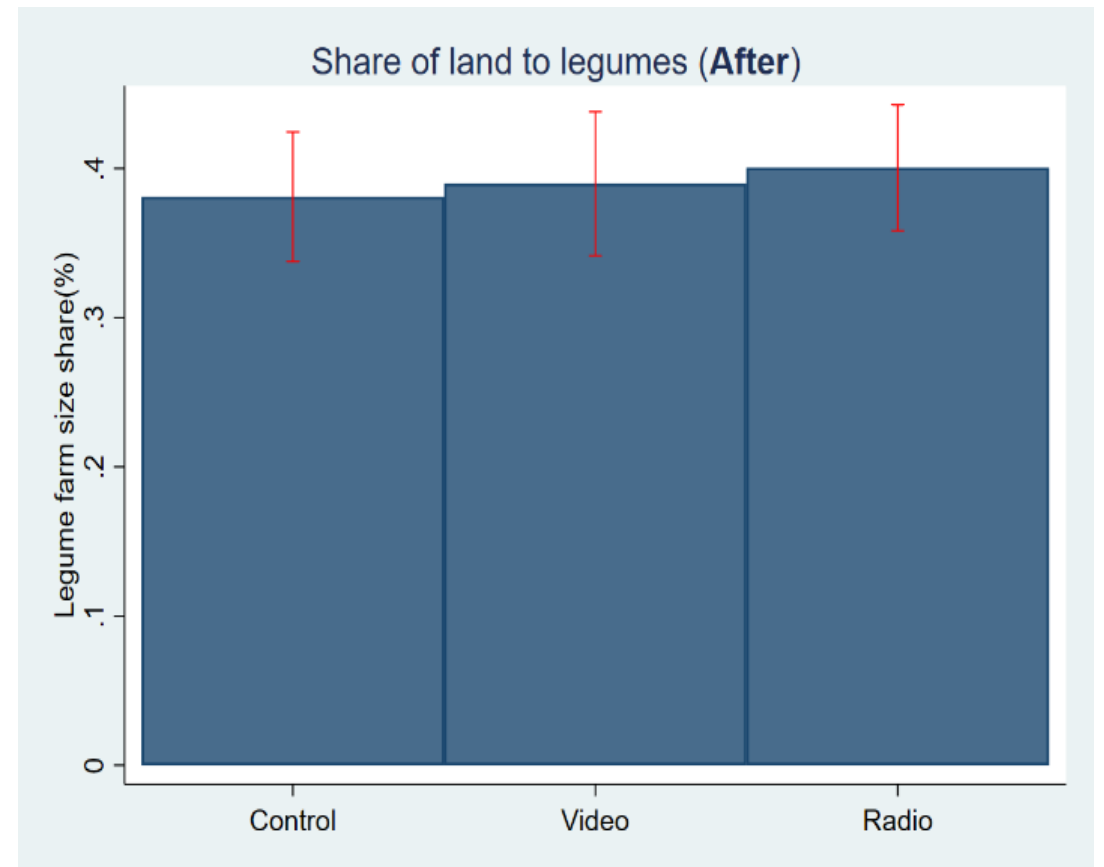
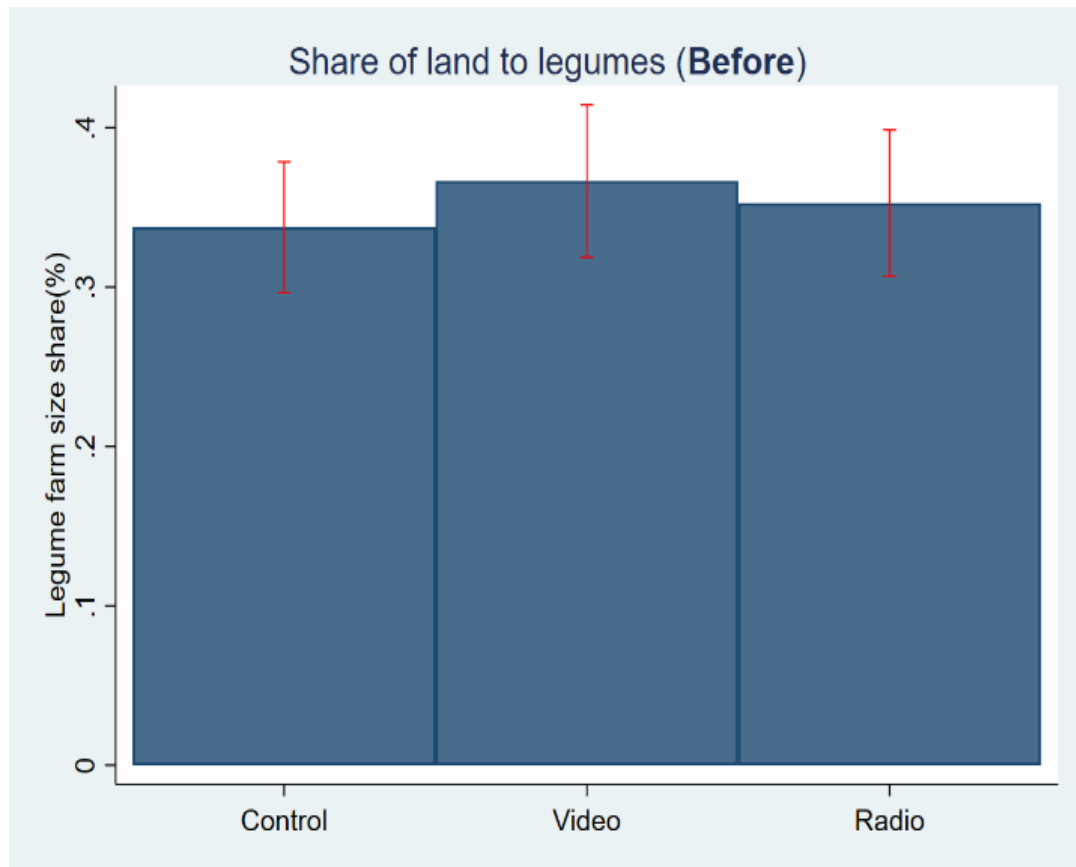


IMPACT ESTIMATES



Impact On Farmer Behavior

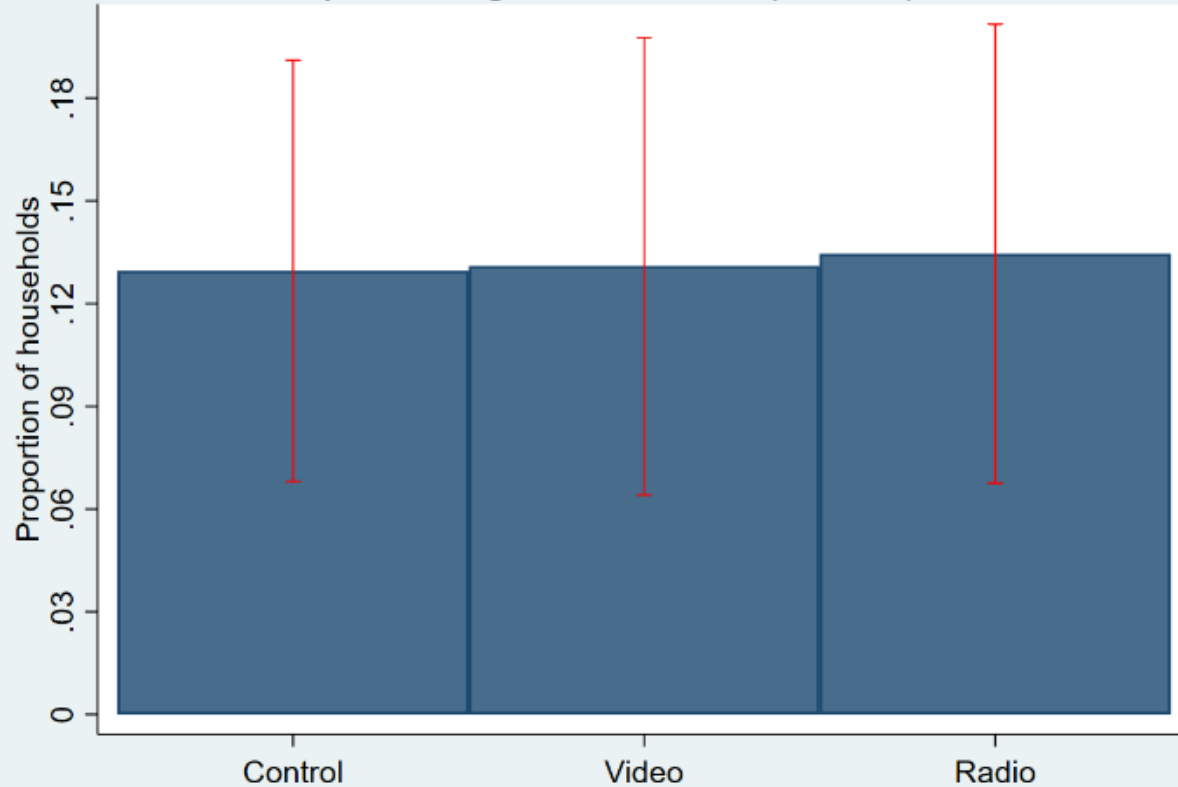
- Share of land devoted to legumes (**No Impact**)



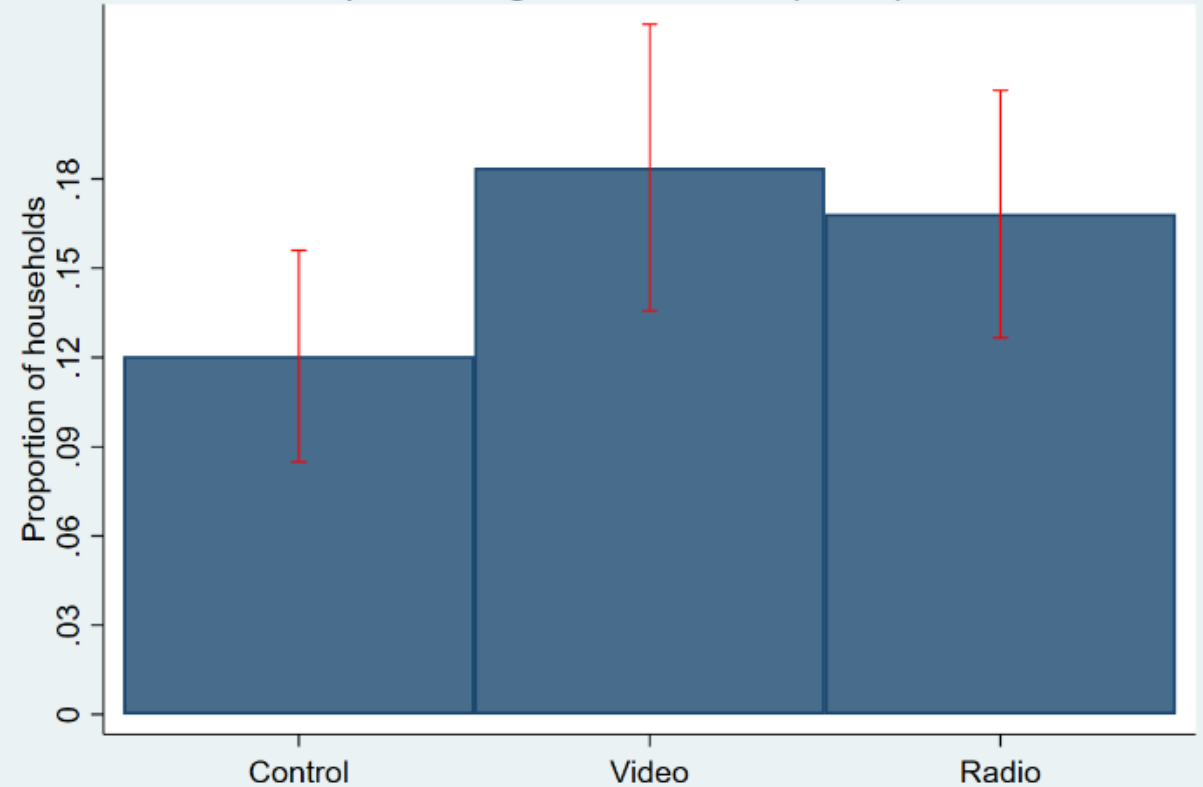
Impact On Farmer Behavior

- Adoption of improved legume seeds (**No Impact**)

Improved legume seed use (**Before**)

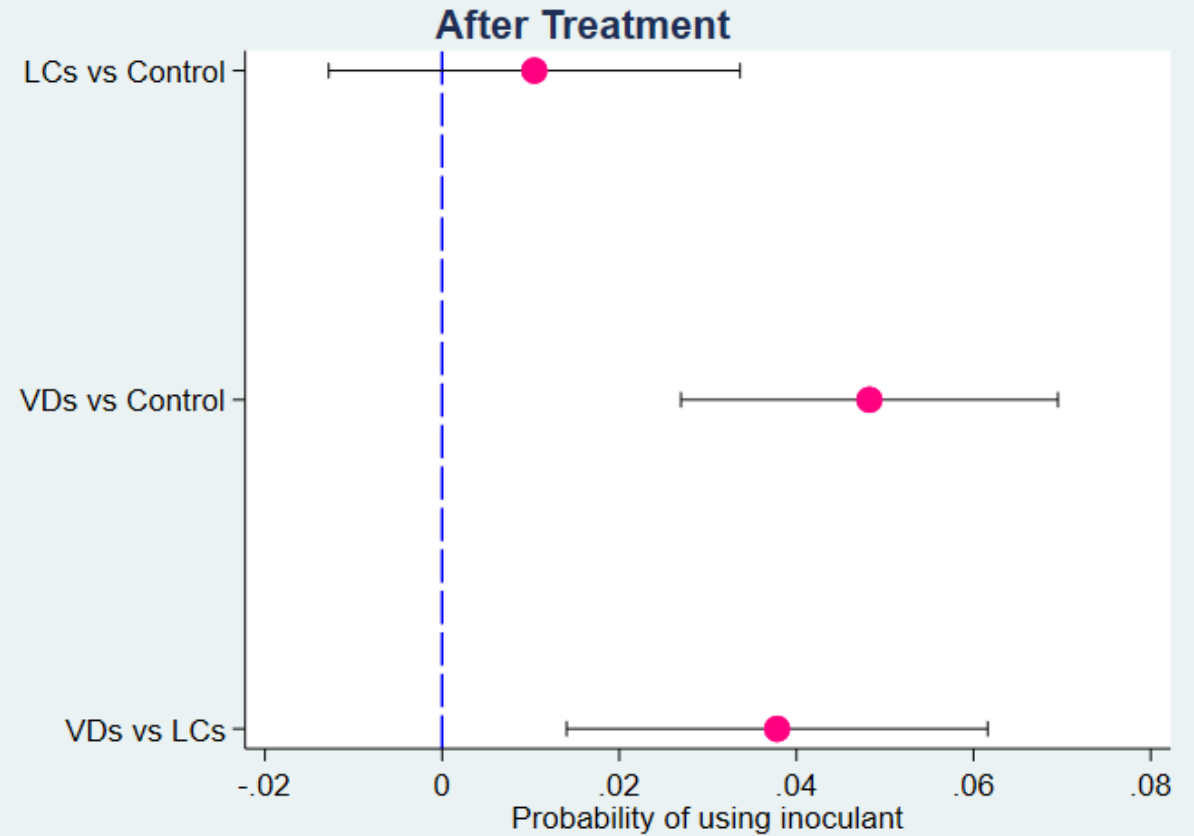
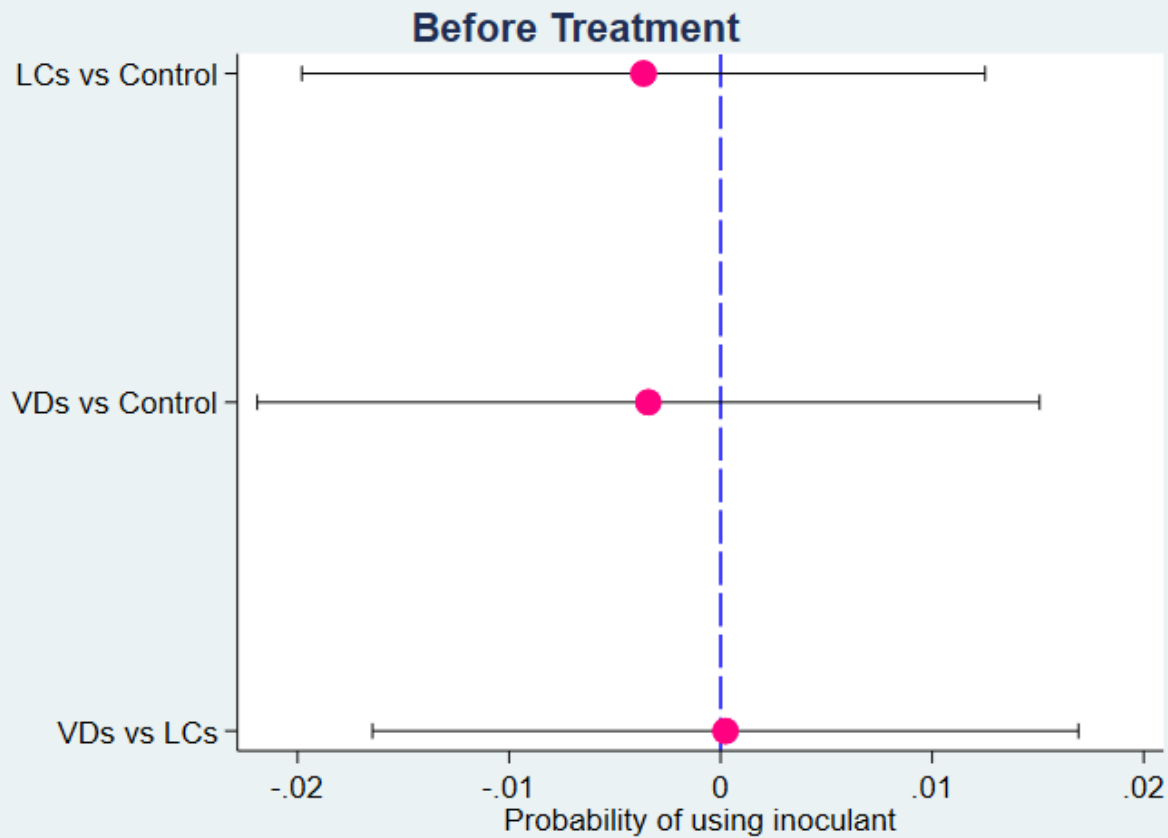


Improved legume seed use (**After**)



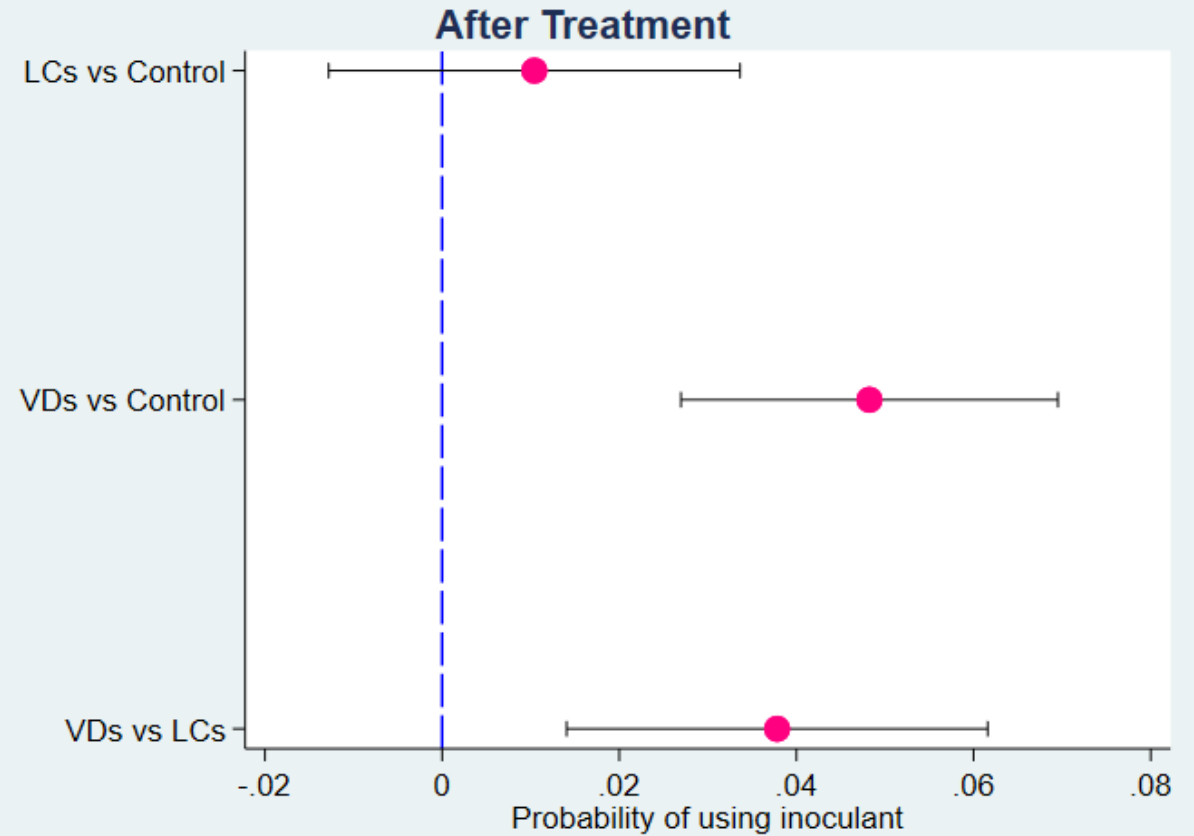
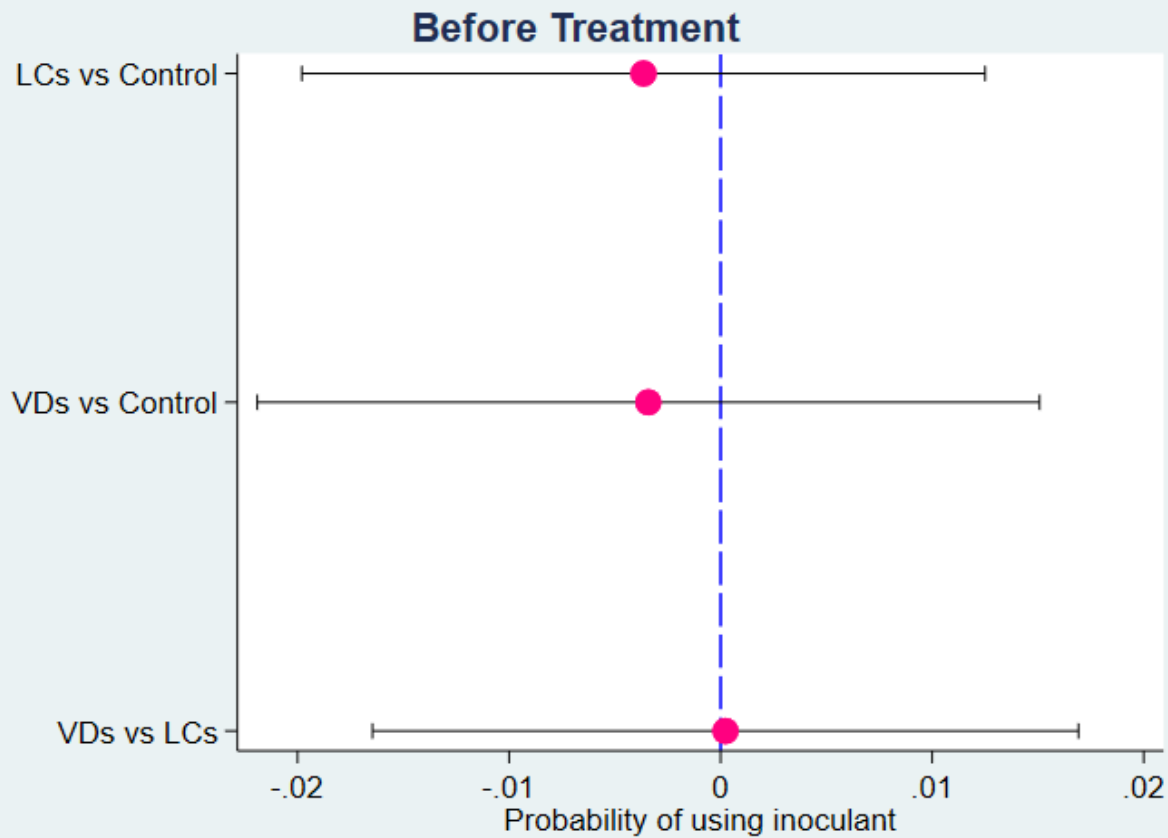
Impact Indicators

- Inoculant adoption (**VDDs had Positive Impact**)



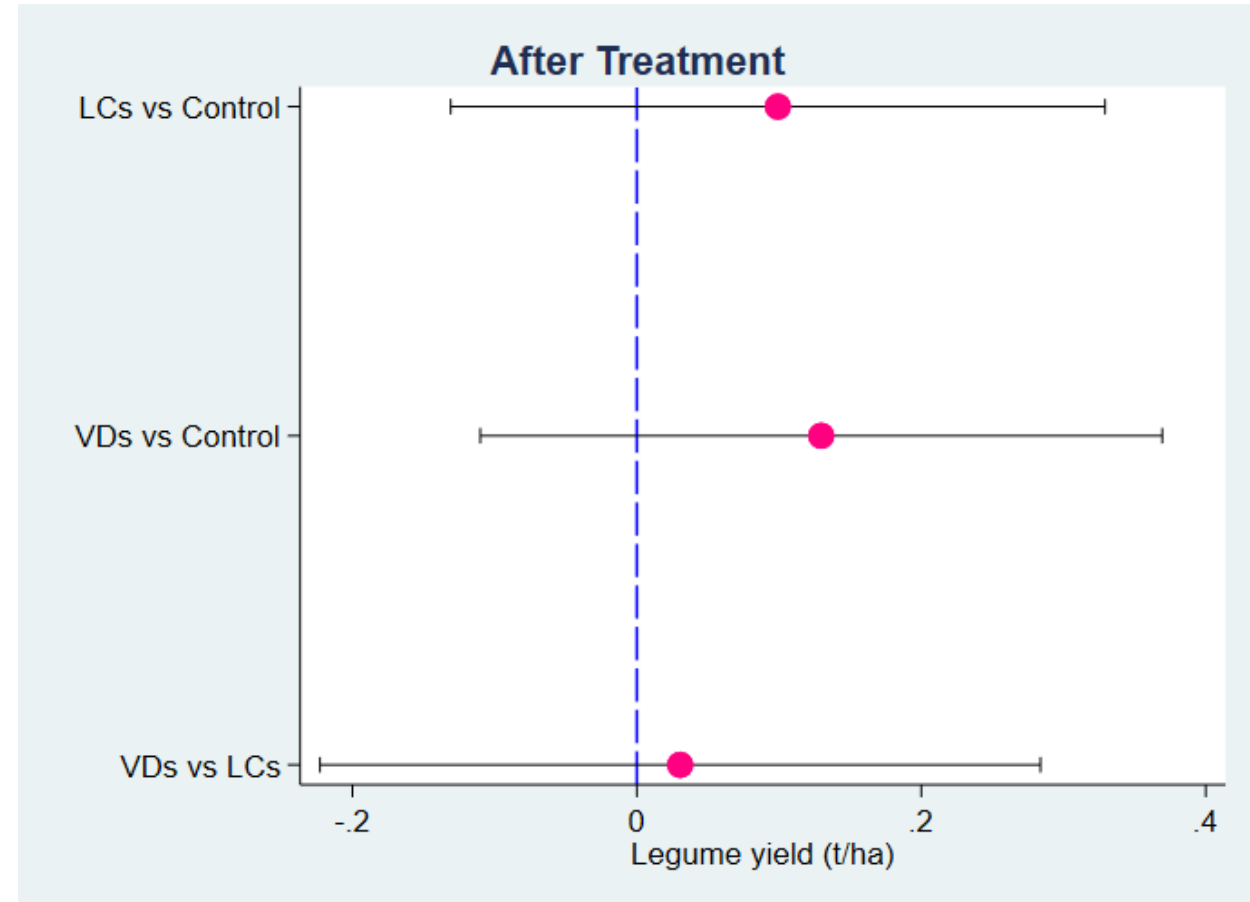
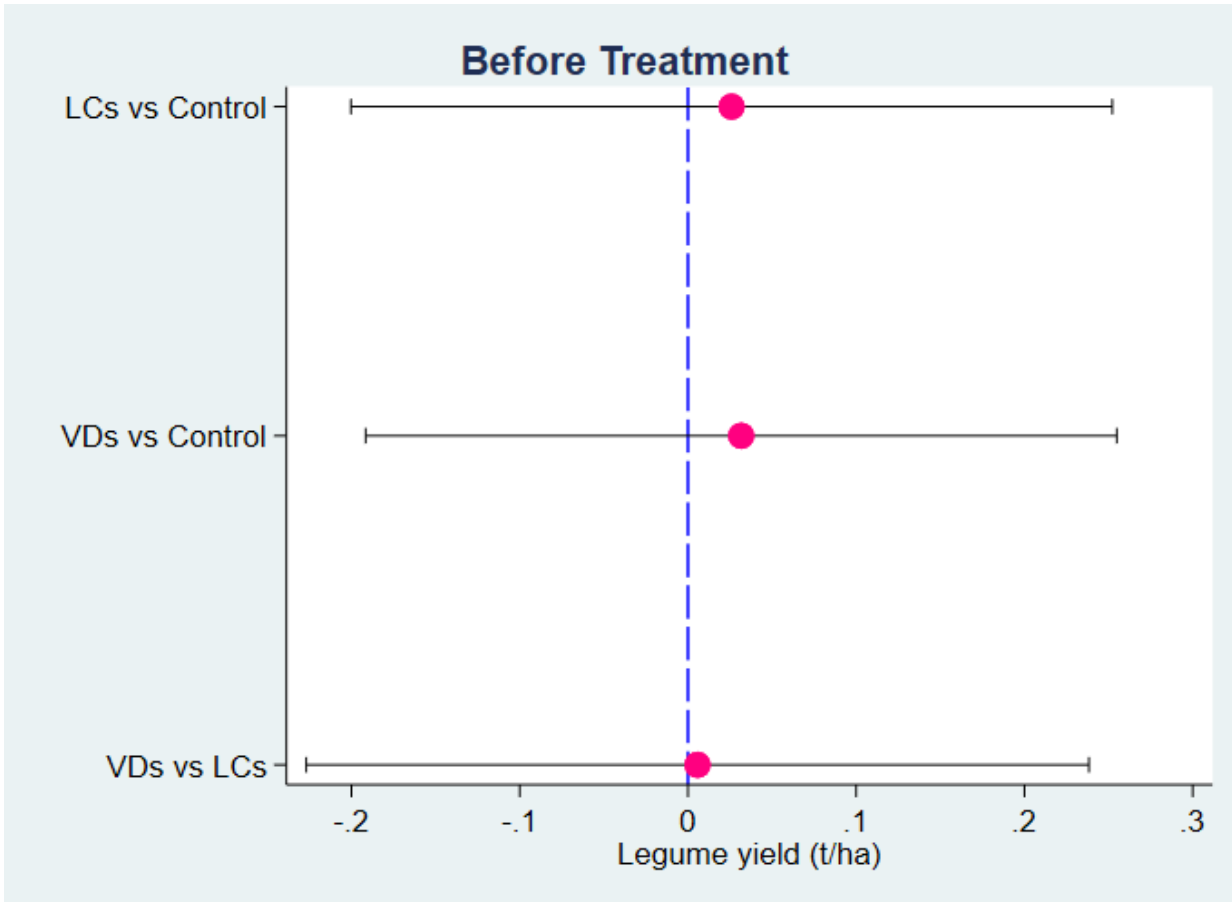
Impact Indicators

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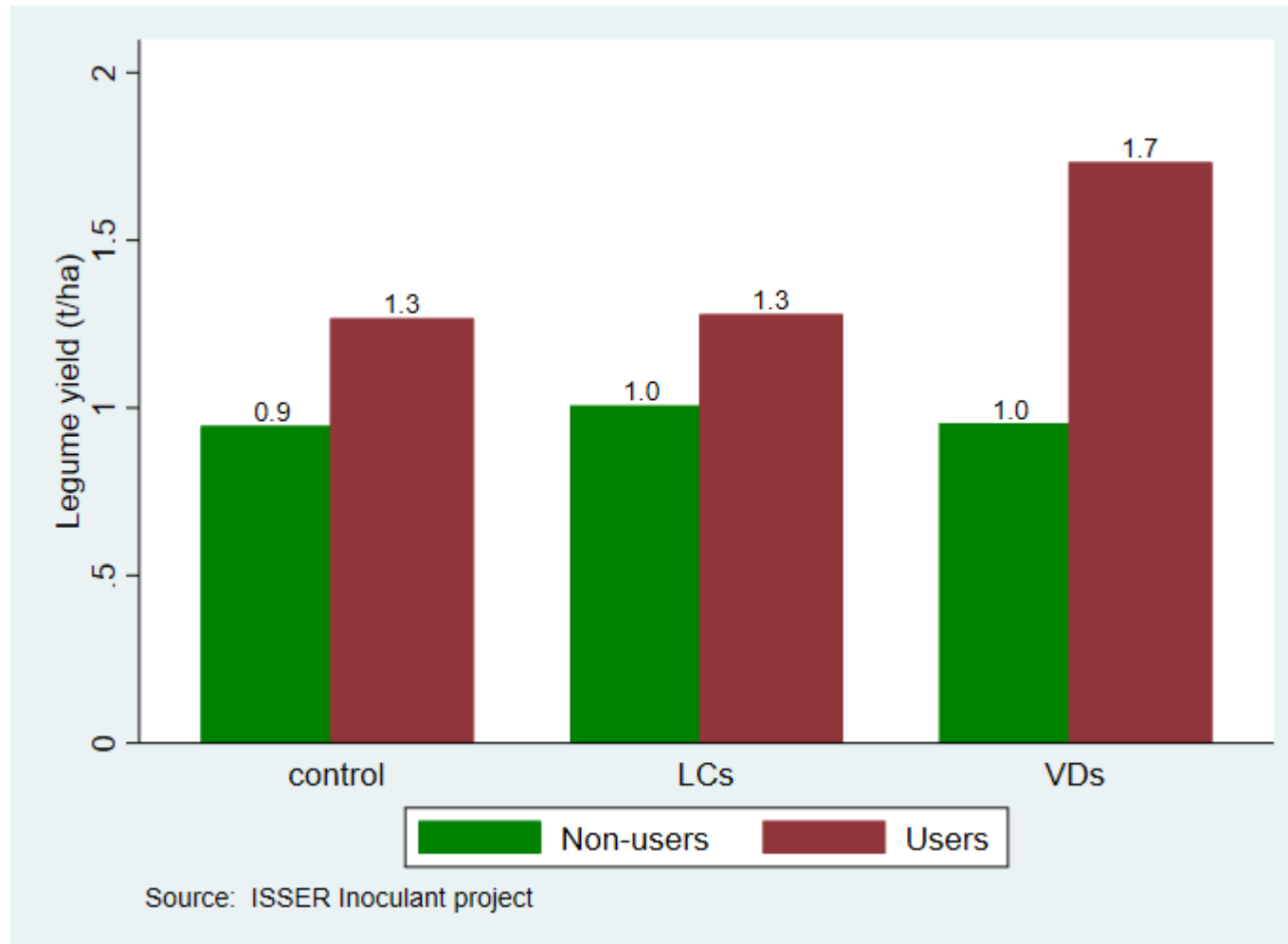
Impact on Impact Indicators

- Legume Yields (No Impact)



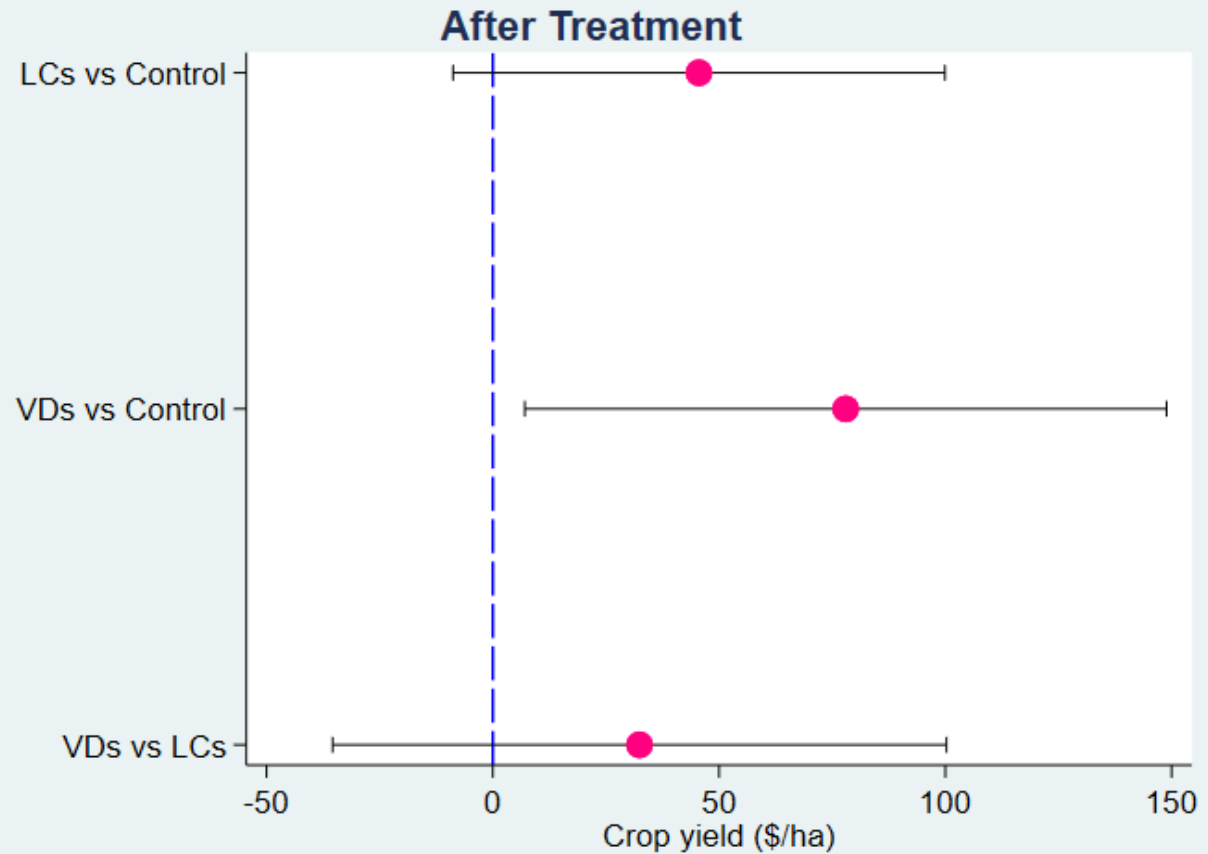
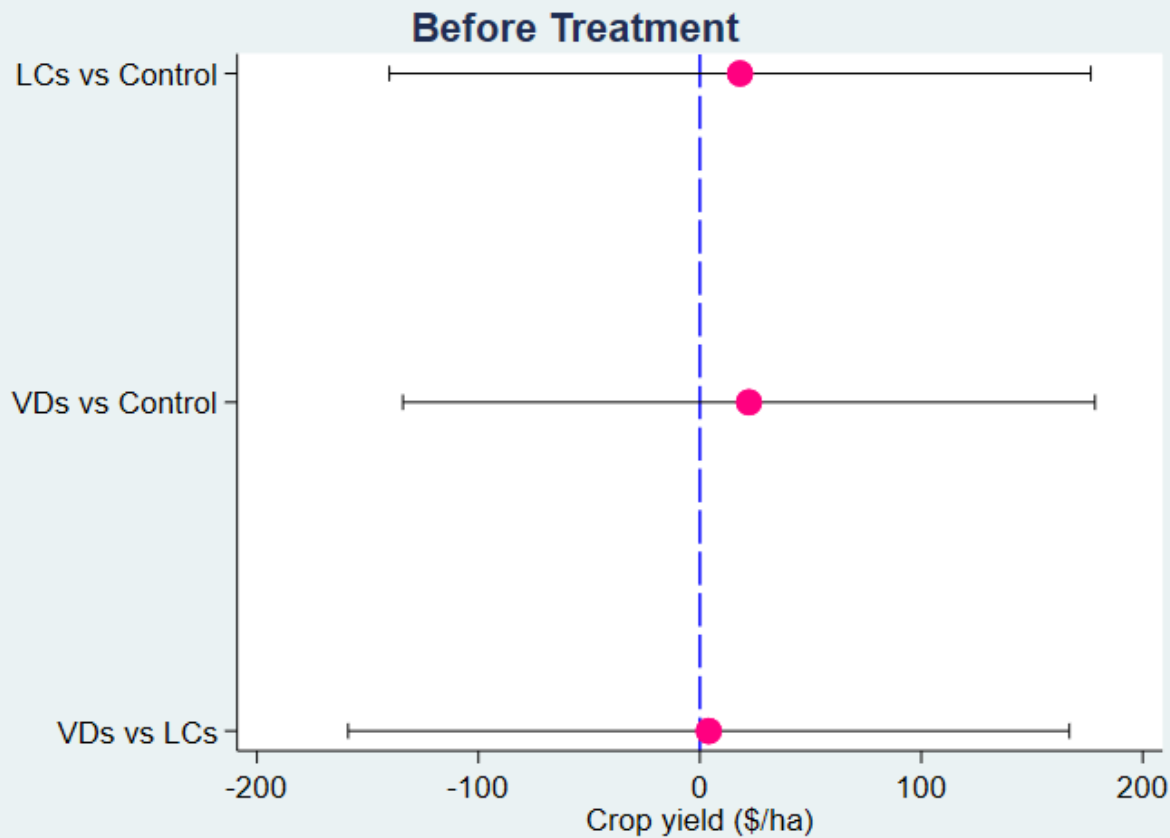
Impact on Impact Indicators

- Those who actually used inoculants had higher yield



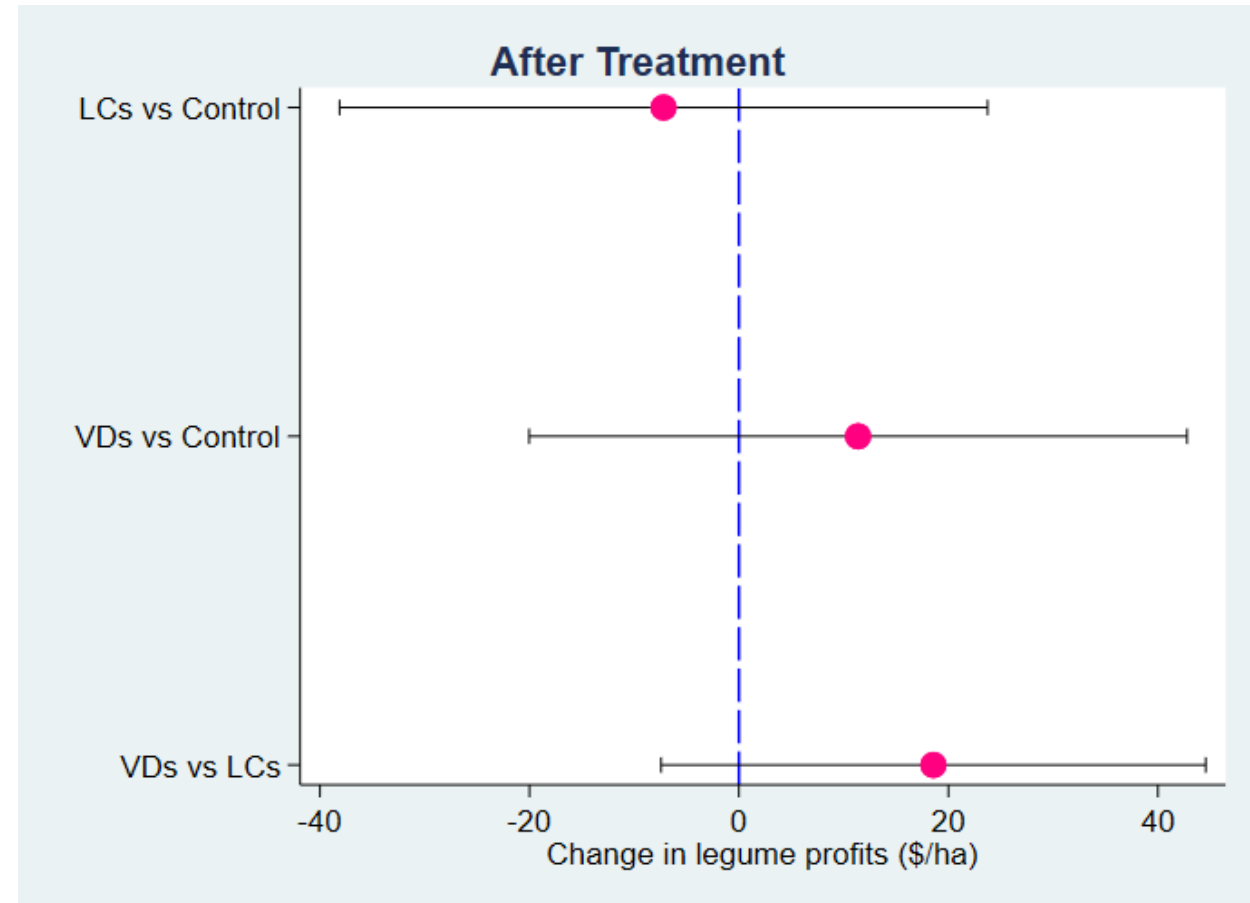
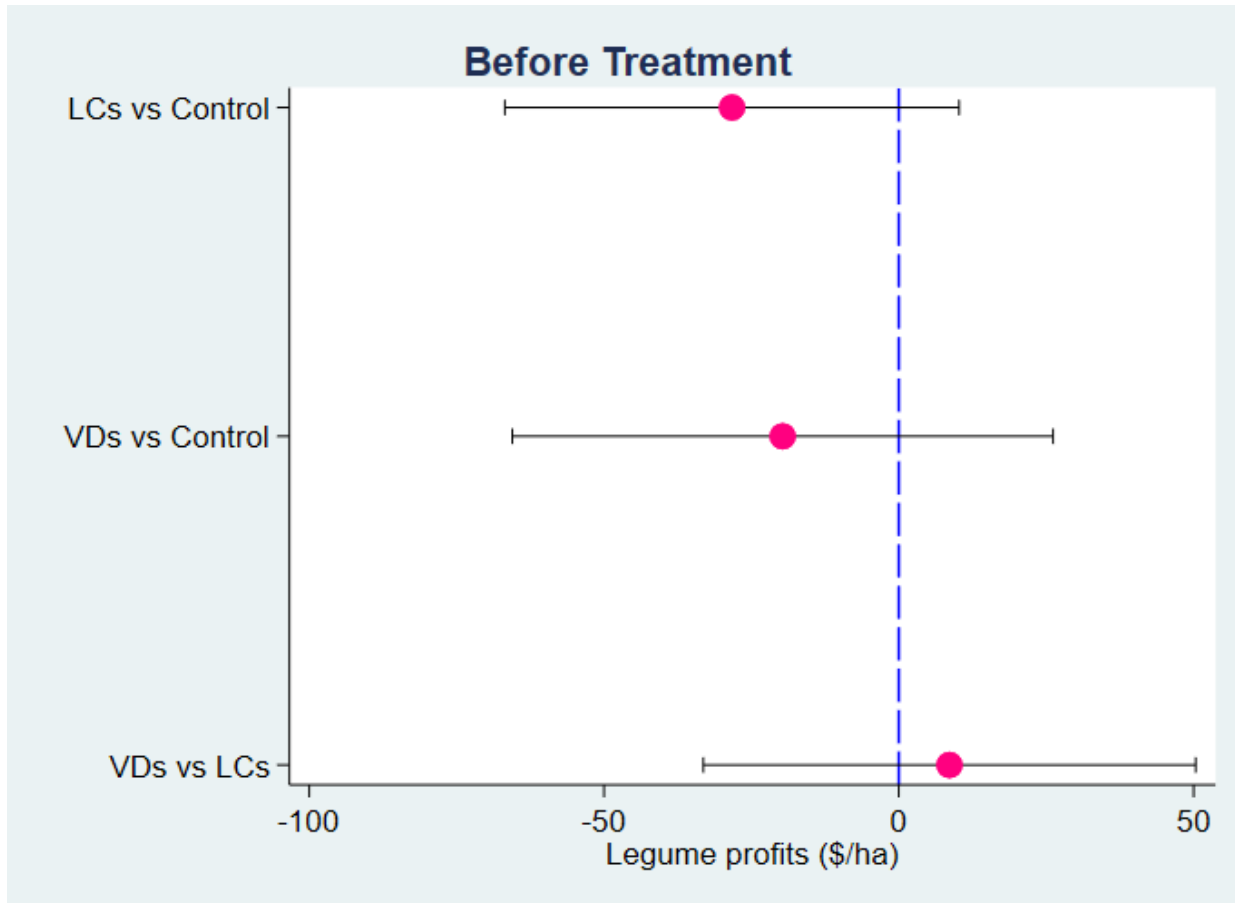
Impact on Impact Indicators

- Overall Yields (VDs had positive impact)



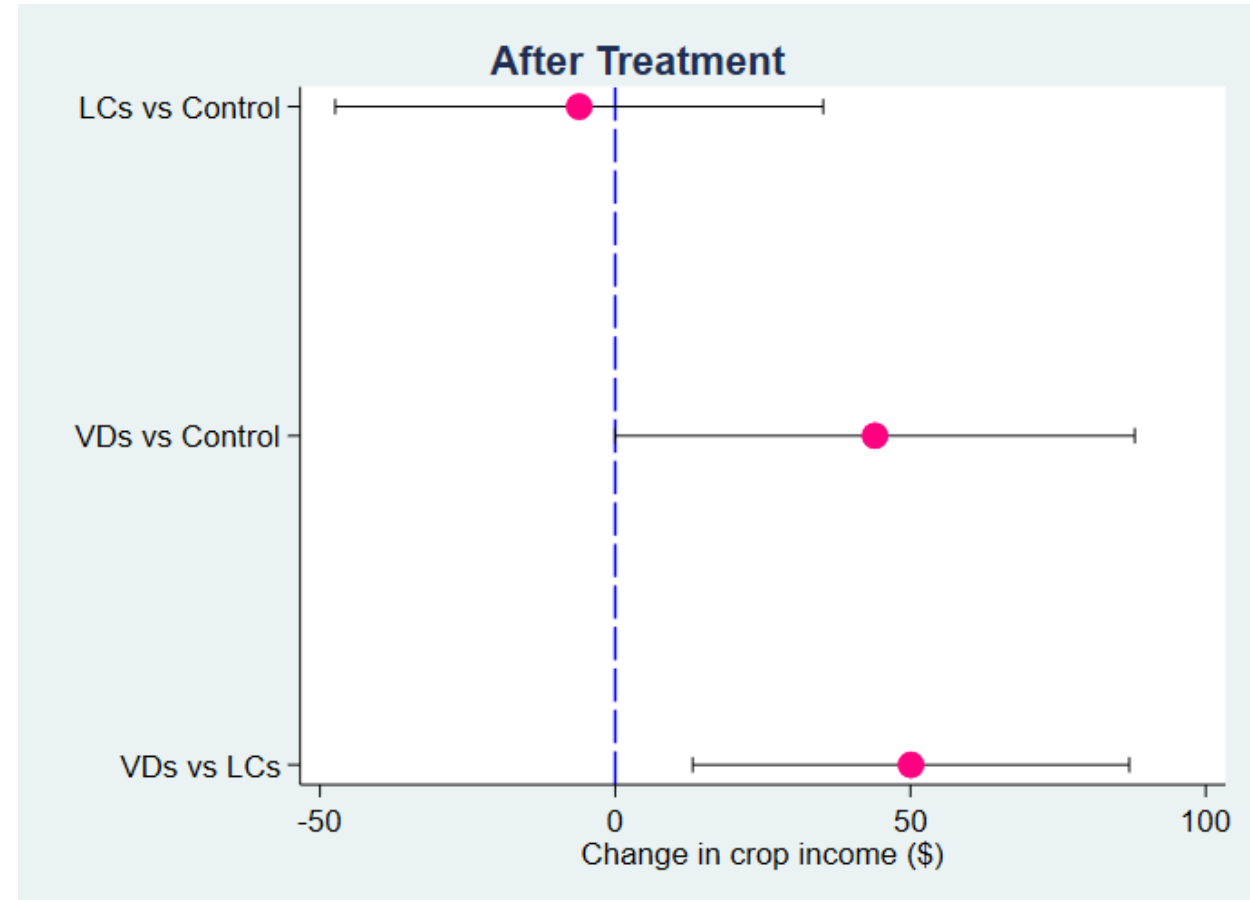
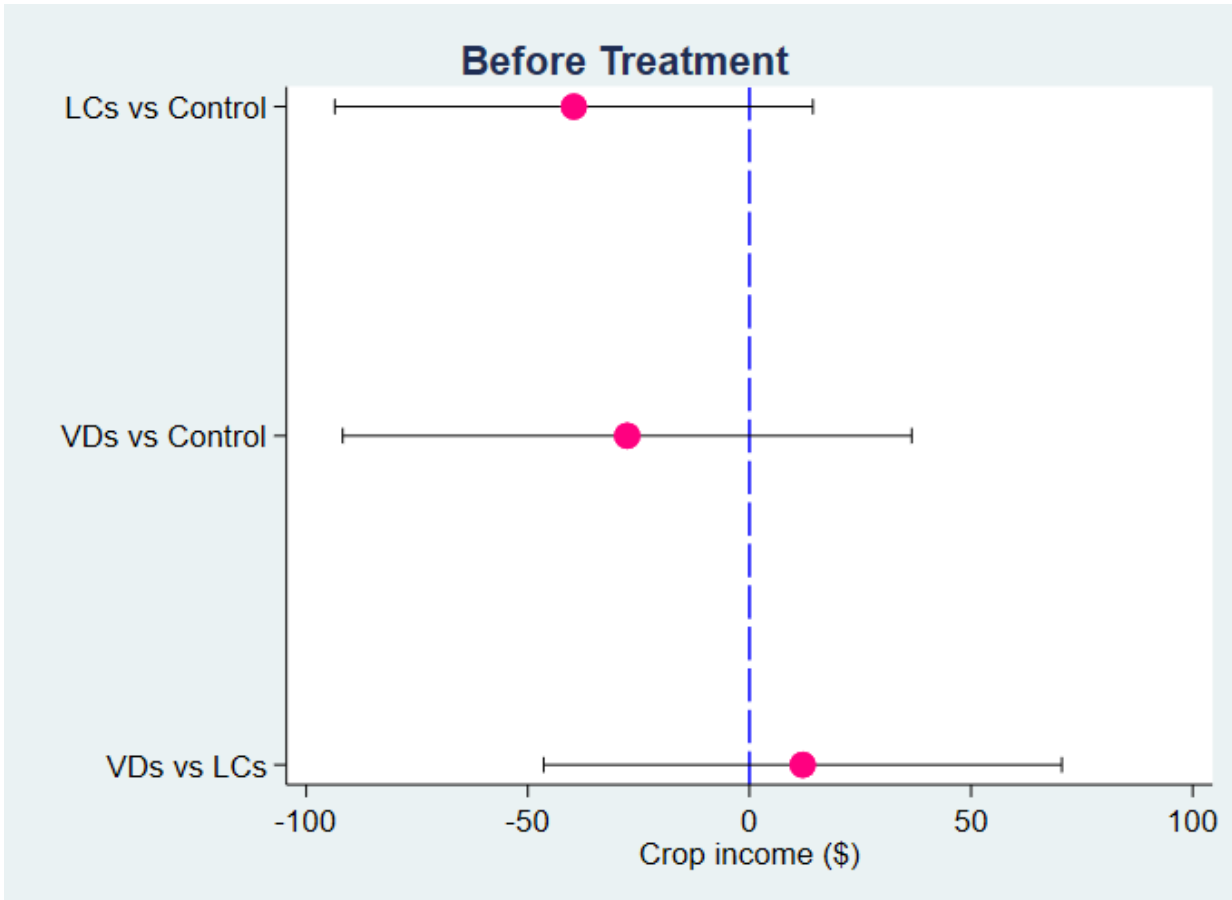
Impact on Outcome Indicators

- Profit from Legumes (No impact)



Impact on Outcome Indicators

- Crop income (The VDs had positive impact)



Conclusion

- Inoculant adoption rate (7.6%) much lower than expected but this can be explained—Implementation challenges
- Nonetheless, the videos documentary communication channel had positive impact on adoption
- Although the increased adoption rates translated to increased yields for the treated groups that used the inoculants, the impact was not statistically strong for the treated group overall
- Video communication seems more effective

THANK YOU

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Robert D. Osei, Fred M. Dzanku, Louis S. Hodey, Isaac Osei-Akoto, Paul Nkegbe, Pokuaa N. Adu, Kwabena Adu-Ababio & Felix A. Asante

We are grateful to AGRA for funding this research.

We also appreciate valuable contributions from the Inoculant Project team at SARI

Most importantly, we acknowledge the FBOs, community leaders and farmers who made this possible.

