

## Extended Abstract

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<b>Paper/Poster Title</b>	<b>Motivating Farmer Trainers. Experimental evidence from rural Uganda</b>
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<b>Abstract</b>	<i>200 words max</i>
<p>Finding the most effective ways for motivating agents to volunteer for the benefit of the community is a main concern for resource-constrained organizations. This paper tests the effects of three non-monetary mechanisms in the context of a large-scale volunteer Farmer Trainer program in rural Uganda. Farmer Trainers were randomly selected to receive a training on dairy practices and to diffuse this information to their fellow farmers. A subset of Farmer Trainers was randomly assigned to one of the following mechanisms: (i) facilitating access to professional Extension Agents, (ii) advertising their engagement, (iii) learning how to customize farmers' training sessions based on the farmers' needs. Results show that connecting Farmer Trainers to professional extension agents is the most effective way to increase their training efforts and to diffuse information to a large number of farmers even outside of their social network. This evidence speaks in favor of providing cost-effective non-monetary incentives to Farmer Trainers for the diffusion of information.</p>	
<b>Keywords</b>	Social Network, Agriculture, Sub-Saharan Africa
<b>JEL Code</b>	O13, Q16
<b>Introduction</b>	<i>100 – 250 words</i>
<p>Lack of access to information is one of the main market failures behind low rates of technology adoption and low agricultural production (De Janvry and Sadoulet (2019); Jack (2013)). The traditional way of diffusing information through an agricultural extension system suffers from several limitations and lack of funding in developing countries. To face these issues, a farmer-to-farmer system to diffuse information has been implemented in several countries. Despite the wide adoption of the "Farmer Trainers" system (FTs) since a long time, few impact evaluations have been conducted to date (Takahashi et al., 2020). Existing evidence documents small impacts when FTs act as volunteers and do not receive any incentive (Kondylis et al., 2017). In turn, FTs are found to outperform professional Extension Agents in increasing fellow farmers' knowledge and adoption of technologies when provided with pay-for-performance incentives (BenYishay and Mobarak, 2019). This paper investigates the impacts of non-monetary mechanisms provided to volunteer Farmer Trainers on their training activities to diffuse information among village farmers in rural Uganda. The analysis builds on the random assignment of three non-monetary mechanisms to a sample of Farmer Trainers, in order to encourage them to diffuse knowledge and stimulate adoption of agricultural techniques among their fellow farmers. We focus on non-monetary mechanisms to stimulate the Farmer Trainers'</p>	

activities as there are several drawbacks associated with providing monetary incentives.

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### Methodology

100 – 250 words

This work is based on a large-scale RCT that randomly assigned three non-monetary mechanisms on top of a volunteer Farmer Trainer program implemented in 627 villages in rural Eastern Uganda in 2015-2017. In addition to the basic treatment of training Farmer Trainers in dairy practices, treated FTs were randomly assigned to the following non-monetary mechanisms designed to encourage their engagement (i) facilitating access to professional Extension Agents, (ii) providing publicity and social signaling, (iii) learning how to customize training sessions based on the farmers' needs. We evaluate whether and which of these mechanisms is the most effective in stimulating FTs' activity by assessing the intention-to-treat effect of being assigned to one of the three treatment variations compared to being assigned to the basic treatment.

$$Y_{ijs} = \alpha + \beta \text{Variation}_{ijs} + \lambda_s + \epsilon_{ijs}$$

With  $Y_{ijs}$  is the outcome for the individual  $i$  in village  $j$  in the lottery stratum  $s$ . The lottery strata fixed effects are captured by  $\lambda_s$ . Lotteries were stratified at the parish level in order to have both control group and the four treatment groups within the same parish. The error terms ( $\epsilon_{ijs}$ ) are clustered at the village level and are robust to heteroskedasticity.

We further distinguish the effect of each single treatment variation and compare it to the omitted category of the basic treatment:

$$Y_{ijs} = \alpha + \beta_1 \text{Linkage}_{ijs} + \beta_2 \text{NeedAssessment}_{ijs} + \beta_3 \text{Signpost}_{ijs} + \lambda_s + \epsilon_{ijs}$$

$\text{Linkage}_{ijs}$ ,  $\text{NeedAssessment}_{ijs}$  and  $\text{Signpost}_{ijs}$  are dummy variables equal to 1 if the FT of the village is assigned to the named variation and 0 otherwise.

### Results

100 – 250 words

Facilitating access to technical information provided by professional Extension Agents appears to be the most effective way to engage Farmer Trainers. The likelihood of organizing at least one training session increases by 10.8 percentage points, on average 5 more sessions are organized and 14.8 more farmers are trained compared to FTs in the basic treatment group.

FTs in the Linkage variation train a larger share of trainees outside of their own social network by 11 percentage points compared to the basic treatment group, that corresponds to 14.4% of the sample mean

**Discussion and Conclusion**

*100 – 250 words*

The Farmer-to-Farmer system has been applied in a vast majority of developing countries to facilitate access to information about agricultural practices and technologies. Farmer Trainers are often volunteers receiving a technical training and acting as communicators to diffuse information in their village. How to best design this system by providing the right incentives to motivate Farmer Trainers to conduct training activities while avoiding clientelism and elite capture is still an open question. We show that non-monetary mechanisms effectively stimulate Farmer Trainers' activities.

Facilitating access to technical information provided by professional Extension Agents appears to be the most effective way to engage Farmer Trainers. They organize more sessions and train more farmers compared to those Farmer Trainers only receiving the initial training. Importantly, Farmer Trainers assigned to this mechanism successfully attract trainees from outside of their own social network and do not limit the diffusion of information only to a close circle of peers.

These results show that a relatively cheap intervention (\$25 per village per year) is effective in stimulating Farmer Trainer's activity and in diffusing information to a wider range of farmers, without the need to design a pay-for-performance monetary incentive. This type of non-monetary mechanism is economically sustainable, easily implementable and adaptable to different types of contexts. These results are encouraging for the design of the Farmer-to-Farmer system and for development actors working to facilitate farmers' access to information