



Using voice reminders to reinforce harvest training in Mali

The Alliance for a Green Revolution in Africa funded the Development of Agricultural Marketing Support Services programme to extend grain marketing support services in the Sikasso region in Mali. The Association Malienne d'Eveil au Développement Durable implemented the programme between 2014 and 2017. The programme's overall objective was to enhance the ability of farmer cooperatives and private aggregators to offer improved services, greater market access and better prices to smallholder grain farmers. The programme focused on increasing the participation of smallholder farmers in both labour and commodity markets by linking them with bulk buyers as a more structured platform for marketing their output. Quality grain is essential for successfully linking smallholder farmers to bulk buyers. Since grain quality is significantly affected by harvesting practises, farmers needed to know about specific handling practises to improve their ability to secure better prices from large buyers.

Highlights

- Voice reminders significantly increased the adoption of improved grain storage methods
- They did not have a significant impact on the likelihood of selling grains through aggregation centres
- Voice reminders reduced the occurrence of pre-harvest grain losses but had no impact on post-harvest grain losses
- They had no major impact on farmer incomes
- Treatment households had a significantly lower incidence of hunger



Evaluating the impact of voice reminders

The randomised impact evaluation assessed the impact of voice reminders delivered through mobile phones on these outcomes: (1) grain handling and management practices at harvest; (2) adoption of better storage methods; (3) commodity market linkages; and (4) household food security. Farmers in all 99 programme villages received the same face-to-face training on harvesting practises and quality management. In the 44 treatment villages, a random sample of farmers received mobile phones, through which they received reminders that reinforced information from the training modules. These reminders were timed to arrive at specific points in the agricultural production cycle when farmers needed to apply what they had learned in the training. Farmers in control villages received the face-to-face training, but no mobile phones or reminders.

Main findings

Impact of reminders on behaviour change

- **Harvesting time and cost:** Timely investment in harvesting is key to minimising on-farm losses and preserving the quality of grain output. The results showed that farmers who received the reminders harvested their grains earlier than the control group, but this difference was not statistically significant.
- **Adopting improved storage methods:** Treated farmers were 11 percentage points more likely to adopt improved storage methods than the control group, a statistically significant effect.
- **Choosing a marketplace:** A targeted key behaviour change was bulk selling of grains through aggregation centres. However, the adoption of aggregation centres was quite low. Only 13 per cent of farmers from the

entire sample reported selling grains this way, and this percentage did not change from baseline to endline. Moreover, the reminders did not have any significant impact on whether they adopted this model.

Impact of reminders on key programme outcome indicators

- **Pre- and post-harvest grain losses:** Reminders reduced the incidence of pre-harvest losses by 14 percentage points. However, the results suggested no significant impact on post-harvest losses.
- **Output commercialisation:** The study hypothesised that farmers receiving reminders would have greater marketable grain surpluses and would thus be more likely to participate in grain markets. However, the reminders had no significant impact on grain market participation.

Impact of reminders on farmers' incomes and household food security

- **Food crop income:** There was no significant impact on sales volumes, nor was there any significant change in the prices farmers received for their grains. Consequently, there was no significant impact on household incomes.
- **Food security:** By reducing pre-harvest crop losses and improving storage methods, the reminders aided households in having more reliable access to grains over a longer period, thus reducing the incidence of hunger. Specifically, the reminders reduced the incidence of household food shortages by seven percentage points.

Cost-effectiveness

The researchers also considered the scalability and cost-effectiveness of the intervention, and of the mobile phone voice reminders in particular. The cost of providing mobile phones and delivering reminders was approximately US\$31 per farmer, which includes US\$20 for the mobile phone and SIM card, and US\$11 for delivering the messages. The researchers note that this is relatively inexpensive in comparison to other methods of agricultural extension, such as farmer training centres. Given the low marginal costs of sending reminders to additional farmers, these reminders are a potentially cost-effective method of improving adoption of some recommended agricultural practices, especially in areas where mobile penetration is high.





Conclusions and recommendations

The primary lesson from this evaluation is that one-time, face-to-face trainings may not be adequate to secure adoption of recommended agricultural practices. Reinforcing the training information can enhance its impact, and mobile phone reminders are a cost-effective way to accomplish it. Moreover, mobile phone reminders can be timed to provide just-in-time advice to farmers, supplying key information when farmers need to apply it.

It is also possible that disseminating agricultural advice through mobile phone messages can achieve many of the benefits observed in this evaluation, even when not preceded by face-to-face trainings. This approach would have the advantage of being even cheaper and easier to implement than the training-plus-reminders model. This may be a fruitful question for future evaluations.

About this brief

This brief is based on an impact evaluation report published in 2018, *Impact of voice reminders to reinforce harvest aggregation services training for farmers in Mali*, by Robert D Osei, Fred M Dzanku, Isaac Osei-Akoto, Felix Asante, Louis S Hodey, Pokuaa N Adu, Kwabena Adu-Ababio and Massa Coulibaly.

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