

Briefing Paper

Closing the Gap: From Technology Awareness to Technology Adoption

Despite adequate dissemination of the technical details of agricultural production technologies to farmers in Ghana, adoption of these practices remains low. Identifying and targeting the reasons for low adoption is key to improving agricultural productivity in the country. Engineers Without Borders (EWB) Canada is developing a Technology Adoption Strategy to better understand and address the factors necessary for successful adoption.

Key Insights:

- Farmers sometimes need to be convinced of the benefits of adopting new agricultural technologies even after they are aware of the technical aspects of the technologies.
- Using testimonials from other farmers can add a sense of credibility and importance to agricultural extension messages.
- ICTs, such as videos, can be used in innovative ways to complement agricultural extension sessions.

Main Recommendations:

- Projects should be designed to leverage the past successes of fellow farmers.
- Project designers should continue to look for innovative ways to use ICTs in agriculture extension.
- Implementers should ensure they are generating interest in the technology they are promoting (messaging the "Why?") and not solely focusing on the technical aspects (messaging the "How?").

Context

Recent research from the University of Cape Coast has revealed a startling disconnect between the awareness and the adoption of agricultural technologies by small-scale farmers across Ghana. Although the vast majority of farmers studied (over 90 percent) are aware of production technologies such as land preparation, soil management, and proper planting techniques, adoption of these technologies remains relatively low (2.3 on a 4.0 point scale)¹.

This suggests that despite adequate dissemination of the technical details of agricultural practices to farmers, other contributing factors persist that must be identified and targeted to ensure successful adoption of these practices.

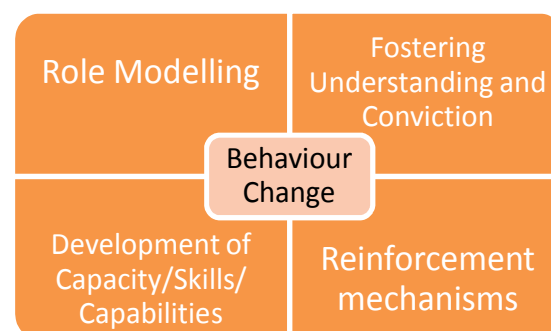
The Strategy

EWB is currently developing a Technology Adoption Strategy, starting with understanding what makes farmers adopt new agricultural technologies and practices.

With the objective of better understanding the underlying factors necessary to successful adoption, EWB staff used an influence model developed by McKinsey & Company. This model, illustrated in Figure 1, categorizes the different pathways that can be used to influence new behaviours in a target audience. Successful behaviour change can be generated by ensuring all pathways in the model are focused on during project implementation.

Figure 1:

McKinsey & Company Influence Model



While most agricultural development projects will include at least a few of these influence pathways, EWB staff believe that the majority of projects tend to neglect a key area that, if leveraged correctly, would increase the adoption rate of the technologies they are promoting: fostering conviction with farmers.

In order to test the effectiveness of this hypothesis – that generating interest in a technology is a required and often overlooked step that can close the gap between technology awareness and adoption – one EWB staff member decided to use video interviews of successful farmers to foster conviction in a technology with other farmers. An innovative approach to using information and communication technologies (ICTs) in agricultural extension, video testimonials can be a cost-effective method for peer-to-peer learning, showcasing successful adoption of technologies by fellow farmers. By using testimonials from farmers themselves, the information is instantly lent a sense of credibility and importance when shown to other farmers which can be instrumental in increasing conviction levels.

¹ "Extension Access and Adoption of Improved Technologies", Kwarteng et al.,

Case Study

To test whether interest in an agricultural technology could be increased using a farmer-to-farmer learning mechanism, video interviews were conducted in Tono, near Navrongo in the Upper East Region of Ghana, with rice farmers who were successfully using transplanting and row planting on their fields. Two videos were produced, focusing on the decision-making process of adopting these practices. The farmers interviewed explained their benefits, namely lower input seed requirements, time saved during weeding and harvesting, and greater overall yields.

The videos were shown to groups of rice farmers in the Kpandai district of the Northern Region of Ghana to test whether interest in these technologies would be increased. The farmers chosen to view the videos were all currently broadcasting their seed, a practice that typically results in lower yields. These farmers were all aware of the better practices, but were not interested in adopting them, due to the extra time commitment required.

A total of 48 farmers in four groups were shown the video interviews in two communities. The groups were questioned before and after watching the videos to gauge any change in interest levels. Another group of 23 farmers was presented with the same information in-person by a local farmer. This was done as a comparison, to see if a personal or community relationship was a stronger contributing factor to increasing interest.

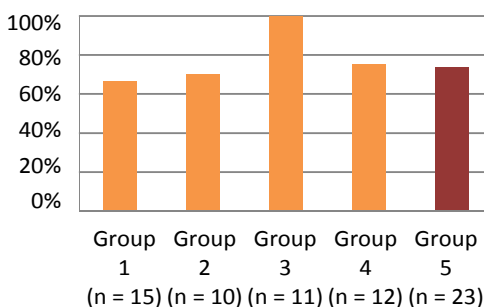
Results

Results were positive from all groups. In the groups shown the videos, perceived interest in adopting the technologies increased by an average of 78%. Results remained the same when farmers were asked if they would be willing to try the technology without receiving inputs from an outside agency. For the group that was presented the information through a local farmer, interest in the technology increased by 74%.

All groups are interested in trying the techniques themselves on their own farms during the dry season in early 2012.

Interest in transplanting and row planting of rice increased by an average of 78% when farmers were explained the benefits of these technologies by other farmers through video testimonials.

Figure 2:
Increased Interest in the Technologies (%)



Groups 1-4 were shown the video testimonials while Group 5 was presented with similar information in-person by a community member. The change in interest towards adopting the technology was determined through questioning the group before and after the information was presented.

Conclusions

These results may be attributed to the following factors based on observations made during the experiments.

- Using another farmer's success story added credibility to the message. *Farmers were motivated by listening to another farmer who they might relate to more than an extension agent.*
- The use of video as a medium added instant celebrity to the message. *Farmers perceived the meeting as more important than a typical extension meeting.*

While these results may be biased due to having an EWB staff member conduct the experiment, the use of video in the promotion of agricultural technologies seems to be an effective means of fostering conviction in farmers. Similar levels of interest were observed with the in-person communication, however videos would be a more cost-effective and potentially wider-reaching strategy.

Although these results are not directly tied to actual adoption rates of the practices themselves, it should be stressed that farmers in the test groups were already aware and uninterested in trying out the technologies due to various reasons. While further research is still required into how this type of promotion of technologies can increase adoption, these tests have shown the potential for higher adoption rates where none existed prior to the experiment.



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"What I would say is that if everybody is able to get time, even if you have half an acre or one acre, to do the row planting, it's even better than the anyhow planting...with small land you can make the row planting and you'll still gain."

George Ayraizure, rice farmer
(excerpt from video testimonials presented to farmers)

"I learned from my colleague farmers if you put in time and get more, it's better than making it fast and not getting anything."

Rice farmer, Kpandai District, after having participated in EWB tests

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