

USING SMS MESSAGES TO ENHANCE SERVICES OF A FARMERS' UNION TO ITS MEMBERS

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ABSTRACT

As part of the African Cashew initiative, 20,000 cashew farmers in Ghana received training on good agricultural practices during interactive sessions. The training was organised according to the cropping calendar and limited to three to five sessions per season. Picture material stimulated discussion and learning. Training was complemented by practical demonstrations and radio broadcasts. The Wenchi cashew farmer and marketing union tested the use of short message service (SMS) texts sent to member farmers containing key messages for the appropriate time of the year. The SMS system was also used to inform farmers about meetings, elections and cross-cutting subjects such as HIV/AIDS. FrontlineSMS software was integrated with the

SAP-based software for price and weighing information for automated sending of and replying to SMSs, and for monitoring purposes. This paper describes the experiences with formulating messages adapted to farmers' language, the training of members, assistance in using the services, costs of broadcasting, the use and perceived usefulness of such services to members of the farmers' union. The help offered, especially by youth in farming families who are familiar with cell phones, the willingness to pay for the services and the adoption of technical recommendations in cashew farming are assessed. Challenges to up-scaling to take advantage of the widespread distribution of cell phones among farmers are described.

KEY WORDS: MOBILE PHONES, LITERACY, WILLINGNESS TO PAY, UP-SCALING, CASHEW

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INTRODUCTION

The African Cashew initiative (ACi)⁵ offers valuable services in its support to various farmer groups and unions to assist their members to become more professional. African producer organisations often offer weak service delivery, which limits their attractiveness to producers. The limited interest in joining a farmer association or farmer-based organisation reduces the capacity of the organisation to deliver quality services thereby perpetuating the situation.

In Ghana, the Wenchi cashew farmer and marketing union works with several farmer co-operatives associated with cashew production and marketing. To improve transparency in marketing transactions, an information and communications technology (ICT) system for price and weighing information was introduced in 2010 and successfully implemented in five zones in the Brong Ahafo region⁶. This system is active during the marketing season and it has been used by almost 400 farmers⁷ who registered with the union for price and loading information. The system is not used during the rest of the year (Figure 1).

Member farmers receive training on good agricultural practice during interactive sessions organised by extension agents, with support from ACI. One element of support is the training of the extension agents in extension methodology and the use of picture material. Tested sets of questions (and answers) are used to stimulate discussion and

learning among farmer groups. The training is complemented by practical demonstrations and radio broadcasts (Figure 2).

The interactive training covers several modules (installation of plantations, management of cashew ‘good agricultural practices’, harvest, post-harvest and quality aspects of raw cashew nuts, phytosanitary information). The training sessions are organised according to the cropping calendar, but interaction between farmers and extension personnel is limited to three to five sessions per season (Figure 3).

THE INNOVATION

During the cropping season and especially at peak times, interactive sessions and gatherings of farmers are difficult to organise. Training is always organised in advance of the time of implementation of the recommended practice. Some of the newly acquired information and skills cannot always be used immediately and some reminders to farmers are needed at the appropriate time. For this reason, different communication channels and sources of information can be combined. Extension messages are primarily delivered through interactive training using pictures, supported by peers from the same group, complemented by radio messages (ideally preceding the interactive training) and SMS text messages are sent to remind participants about some of the key messages at the most appropriate time (Figure 4).

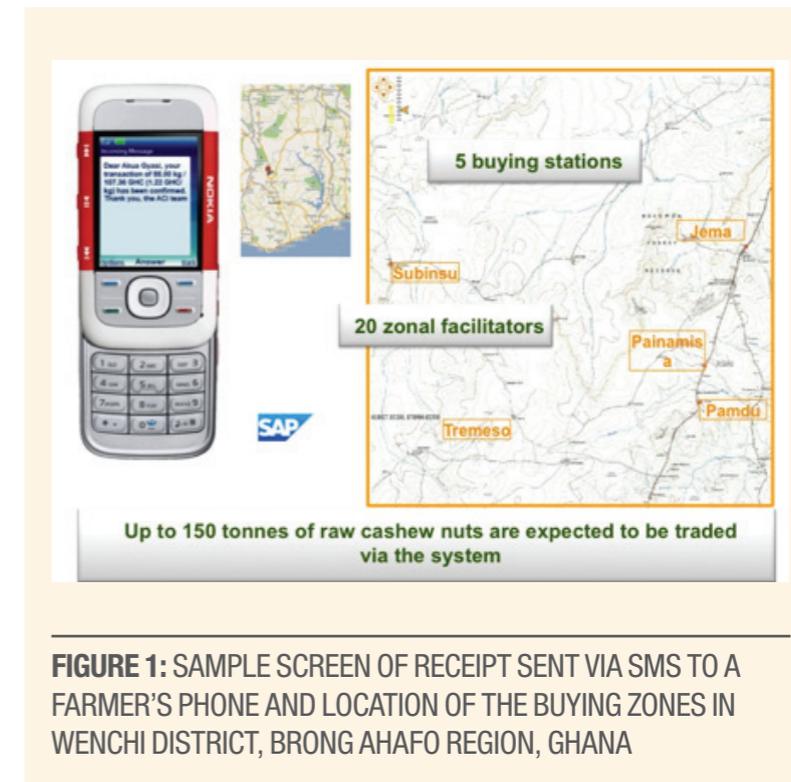


FIGURE 1: SAMPLE SCREEN OF RECEIPT SENT VIA SMS TO A FARMER'S PHONE AND LOCATION OF THE BUYING ZONES IN WENCHI DISTRICT, BRONG AHAFO REGION, GHANA

Up to mid-2012, FrontlineSMS⁸ was used for the bulk sending of text messages and the

⁵ <http://aci.africancashewalliance.com/>.

⁶ The system based on SAP tailor-made software has been improved on the basis of experiences from 2011 season and newly subscribed farmers. The system is operating in 16 zones for more than 1,000 farmers for the 2012 season (<http://www.economist.com/blogs/baobab/2011/10/smartphones-africa>).

⁷ The number of farmers increased to more than 600 in the 2011/12 season.

⁸ <http://www.frontlineSMS.com>



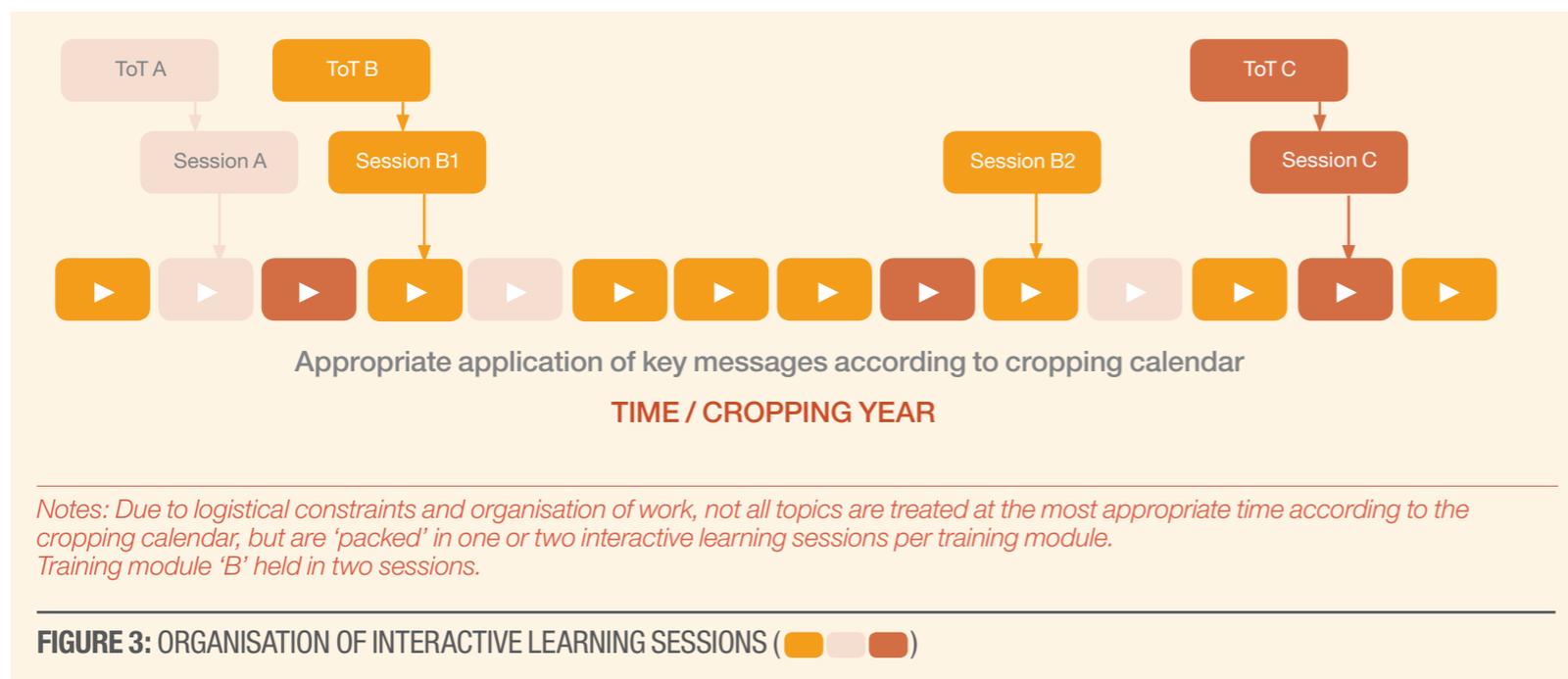
management of contact details. The ICT system used for price and buying information was redesigned to offer services on a modular basis and combine all options into one application for computers and cell phones. Two-way communication via SMS for surveys and

monitoring purposes was possible using reliable gateway service providers as there were significant issues with message delivery. The field evaluators examined each cell phone to see if (and which) messages (SMSs) were being delivered, whether the recipient had opened the message and when

they were delivered. Many people were receiving some of the SMSs and were registered correctly with the service, but not all SMSs were getting through, indicating widespread problems with SMS delivery. For example, during the second and third field visits, it became clear that there were SMS delivery problems. Only about 20% of the people receiving messages had received all of the SMSs, while the remainder (about 80%) had received only some of the SMSs⁹.

Staff from the farmers' union acting as buying agents and using the software application on their smartphones were trained in receiving and reading SMS texts on ordinary cell phones and providing support to their peers on the use of SMS. Apart from purely technical messages, the union used the system to communicate information about meetings, elections and other topics of interest to its members. Messages on general subjects such as HIV/AIDS complete the range of information shared through SMSs.

The messages were sent to participating cashew farmers repeating key messages taken from the interactive sessions (Figure 5). These SMS texts had been discussed and their wording chosen collaboratively by the farmers, extension



⁹ Based on field evaluations conducted in July, August and September 2011 involving 158 participating farmers.

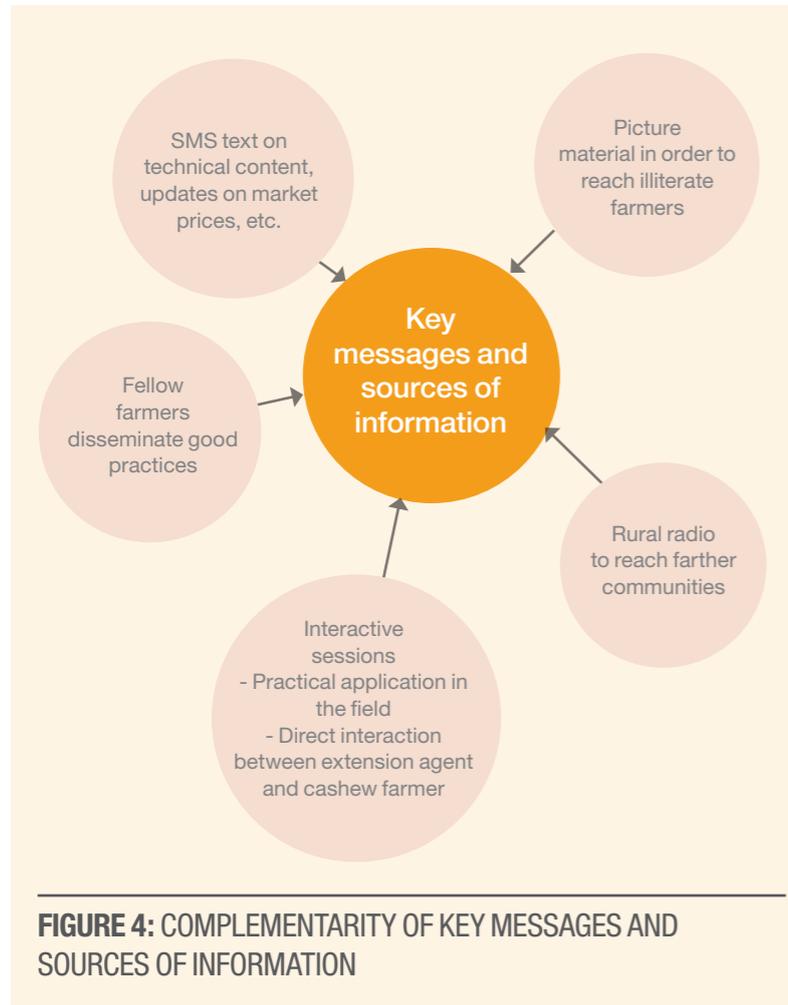


FIGURE 4: COMPLEMENTARITY OF KEY MESSAGES AND SOURCES OF INFORMATION

services, research and project staff. The messages were sent in English and contained no more than 160 characters.

RESULTS AND DISCUSSION

The majority of farmers interviewed claimed to be able to read and understand the SMSs. Relatively few people said they were illiterate, but after conducting the interviews it emerged that many

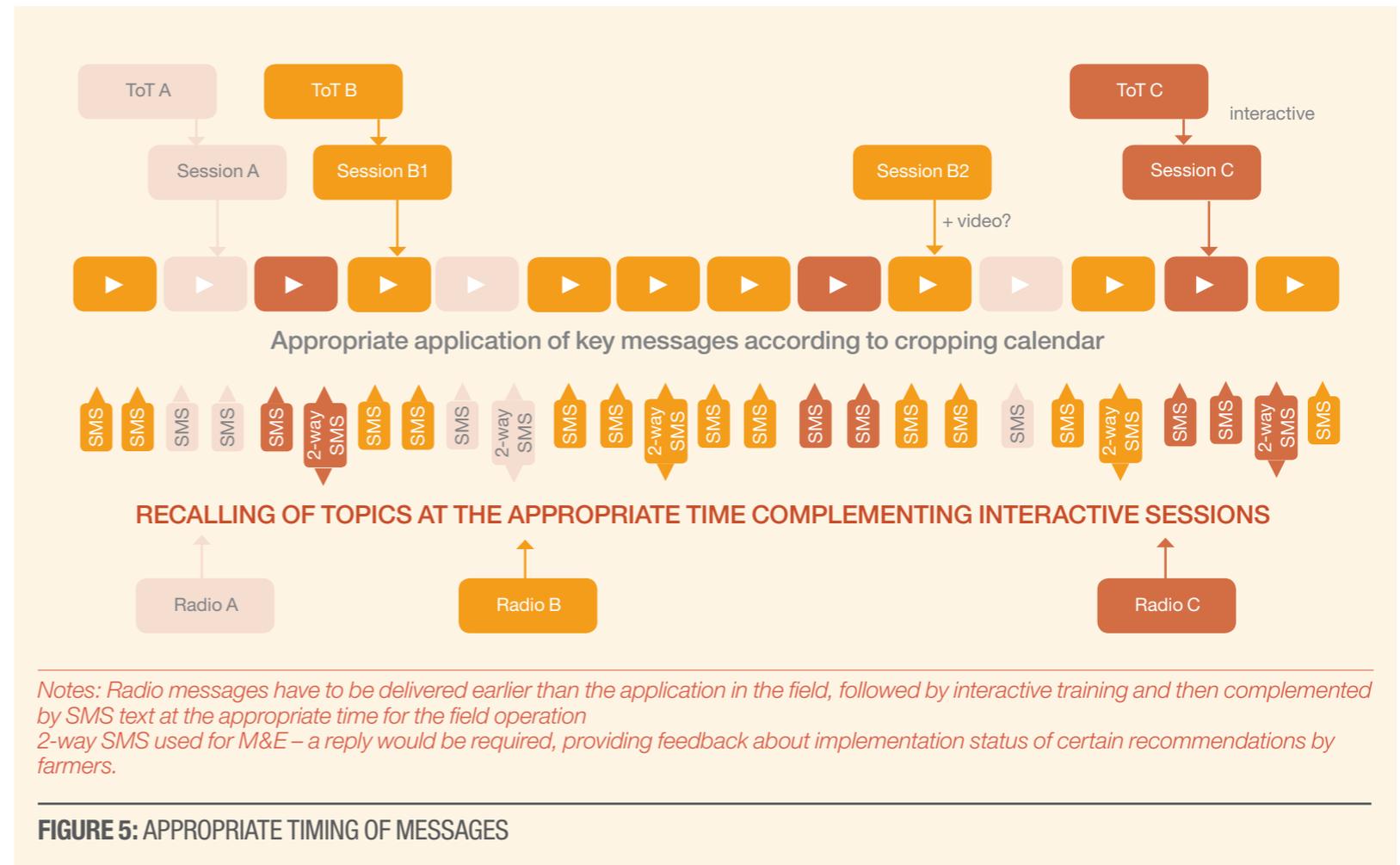


FIGURE 5: APPROPRIATE TIMING OF MESSAGES

farmers who had difficulty reading admitted in interviews to asking for help from a child or other family member. During an evaluation workshop with the zonal facilitators, farmers reported that when they received a message from their union they sought help if they struggled with reading it.

The language and the complexity of the text of the SMSs (Figure 6) did not appear to be a barrier, except when the agricultural terms used were

unfamiliar. The only message that was widely misunderstood and prompted requests for simpler SMSs was from 31 August 2011, advising that 'water shoots' should be removed. The term 'water shoot' was understood to refer to: stray branches, new growth, a certain type of pest or drainage problems. There was a process of moderation and negotiation between farmers, practitioners and researchers to agree on the appropriate wording



| Date | SMS Text (limited to 160 characters including space) | Type | No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|--------------------------------|---|------|-----|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|
| Wednesday 23-03-2011 | Best time for planting your cashew trees or sowing is May to June. Seed nuts should be sown at 3cm to 5cm depth and 15cm apart. | TECH | 6 | | | | | | | | | | | | X | | | | | | | | | |
| Wednesday 30-03-2011 | Go to MoFA or approved seed nut dealers or to approved cashew tree nurseries to obtain high quality planting materials. | TECH | 7 | | | | | | | | | | | | | X | | | | | | | | |
| Wednesday 06-04-2011 | Have you planted (10m x10m) and staked the young cashew trees to prevent lodging? Protect your young trees against animal destruction. | TECH | 8 | | | | | | | | | | | | | | X | | | | | | | |
| Wednesday 13-04-2011 | Did you use approved seed nuts or grafted seedlings to establish your plantation? Reply with A for yes and D for no. Thanks. | TECH | 9 | | | | | | | | | | | | | | | X | | | | | | |
| Wednesday 20-04-2011 | Did you respect 10m x 10m for pegging and lining of your cashew plantation? Reply with G for yes or J for no. Thanks. | TECH | 10 | | | | | | | | | | | | | | | | X | | | | | |
| Wednesday 27-04-2011 | Remove water shoots, dried and diseased branches from your old cashew trees to maintain the trees and ensure proper growth. | TECH | 11 | | | | | | | | | | | | | | | | | X | | | | |
| Wednesday 04-05-2011 | Do you have vacant plant stand requiring replacement due to dead or withered young cashew trees? Then replace with high yielding seed nuts or young cashew trees. | TECH | 12 | | | | | | | | | | | | | | | | | | X | | | |
| Wednesday 11-05-2011 | Intercrop your young cashew plantation (less than 5 years old) with suitable food crops. like maize, groundnut, yam, pepper and get income. | TECH | 13 | | | | | | | | | | | | | | | | | | | X | | |
| Wednesday 18-05-2011 | Respect 1m distance away from the trunk of the young cashew tree between the intercrop and the tree to avoid competition. | TECH | 14 | | | | | | | | | | | | | | | | | | | | X | |

Notes: No. = number of the message in the year; numbers 1–21 as column heads refer to weeks of the year; TECH = technical message (as opposed to organisational message); 'Two-way' messages are highlighted.

FIGURE 6: SAMPLE MESSAGES

for the message which is 'scientifically correct' and easy to understand in the vernacular language. This was achieved by involving all parties in the process and then by testing the revised text on a small focus group of farmers to make sure that the terms made sense to those who had not been involved in the formulation of the message.

Farmers overwhelmingly said that the messages were useful to them. We followed up by asking 'why?', and the most common reasons given were that they acted as a reminder or a reference to some new or useful information. The majority of people who were interviewed said that they were discussing the messages with other

farmers, and only a small minority said they were consulting with extensions agents from the Ministry of Food and Agriculture.

Most farmers said that they had completed the work suggested in the SMS. While farmers consistently said they would have done the work without the SMS, and some had already completed it



before receiving messages, that did not seem to lessen their appreciation of the SMSs as ‘reminders’. Farmers frequently said in the follow-up to this question that they would have done the work anyway, but that the ‘reminder’ or ‘timing’ was helpful. Some farmers, in particular the zonal facilitators, told us that people knew how to do most of the work suggested in the SMS, but that they did not know the correct timing. The clear message from the farmers in the interviews was that the value of the SMS to them was in the structure it gave, reminding them and giving them information about the proper timing during the season to do the various activities that they know are necessary for a productive cashew farm. The information in the SMS messages is helpful, but their value is in providing farmers with a timeframe for the various activities. There are specific areas (i.e., fertiliser application and pesticide spray) that farmers identified as being new information (or in the case of spraying, a subject they want more information about).

The zonal facilitators unequivocally stated that the SMS had an impact in their communities. Their answers to the follow-up question, ‘what effects do you see?’ confirmed some of our impressions from the farmer interviews. In particular, the zonal facilitators commonly reported that more farmers were doing the work at a particular time, and while they already know how to do the work, they had not known enough about the correct timing of the work. One example given was that in the past farmers would prune trees in November or December, rather

than in July or August. This confirmed our interpretation of the responses about ‘reminders’ and ‘time’ often given by farmers. The value of the SMS seems to be in the structure it gives farmers, helping them organise the work they do during the year, as much as it delivers new information about farming methods (Figure 7).

The service was free for registered members during the pilot phases. The cost for broadcasting the messages at a rate of 0.038 Ghana cedis was approximately 2 Ghana cedis (€0.92 [6 April 2011]) per year for 52 messages. The willingness to pay for the services and costs of broadcasting along with the use and perceived usefulness of such services were evaluated during three field visits. The vast majority of people interviewed said they were willing to pay for the SMS extension service if offered by the Wenchi cashew farmer and marketing union. The average amount farmers were willing to pay was about 3–5 cedis (€1.38–2.31). It peaked at 7 cedis (€3.23) during the second field evaluation. That may have been because the SMS reception was more reliable at that time and farmers were very enthusiastic, or it may have been because the SMS during that period contained new information on fertilisers (which farmers expressed particular interest in during interviews). Farmers reported that they would prefer to pay for the service through their union dues or by money deducted from the sale of their cashew to the union. They did not want to pay

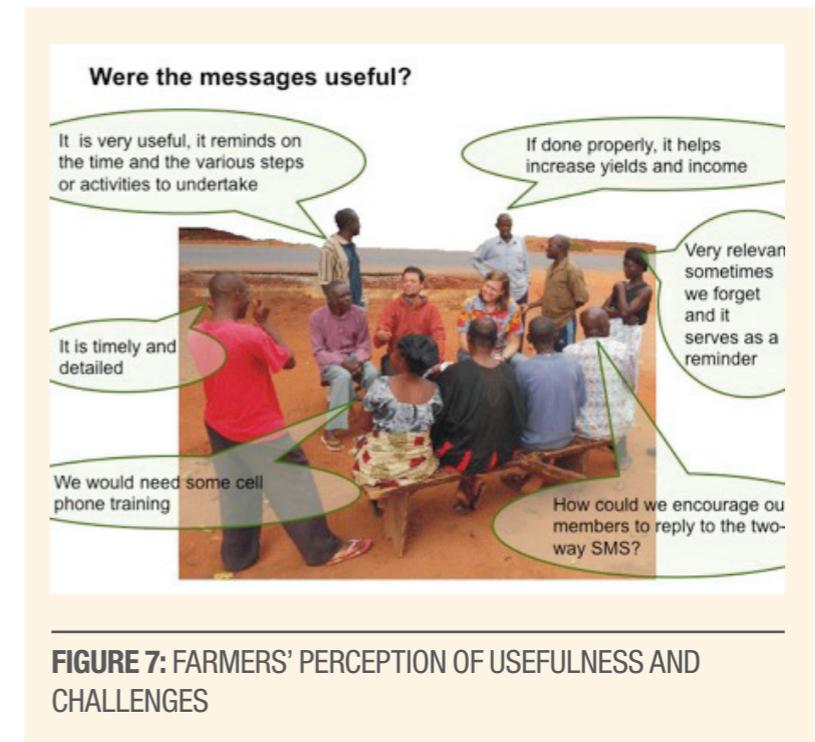


FIGURE 7: FARMERS' PERCEPTION OF USEFULNESS AND CHALLENGES

for it separately in cash, because they were not sure when they would have money available during the year. Options were being explored by the management of the farmers' union for sustainably maintaining the SMS service.

Not all the farmers who subscribed received the messages and not all of them sold their cashews to the union (e.g., because they had just planted cashew or had sold elsewhere). In addition, some messages were sent to non-cashew farmers (e.g., extension agents, local authorities, chiefs) for free, for which the cost would need to be borne from common funds. The issue would be addressed at the next general assembly when a decision on the basis of the different options would be taken.



About half of the respondents of field interviews reported problems in using cell phone technology. Almost all the farmers had a cell phone that they used regularly, but they were mostly older men and women who are unfamiliar with SMS. Training of zonal facilitators in SMS use was necessary, but a single training event was not enough to familiarise zonal facilitators with all SMS functionalities their phones offer, even with follow-up help from volunteers. Some zonal facilitators provided help with using cell phones in their communities. Farmers reported problems with opening and replying to SMSs. When asked for suggestions to improve the SMS project, a common answer was a request for on-site cell phone training i.e. community cell phone training with zonal facilitators, farmers and local resource people (e.g., cell phone credit sellers). Younger members of the community who sell or repair cell phones may be a good resource for training farmers in SMS use.

CONCLUSIONS

A significant barrier to the farmers' use of the SMS system is their lack of proficiency with the SMS functions of cell phones. Most of the older farmers use their cell phones exclusively for phone calls, not for SMS messaging. However, they were quick to see the potential and frequently requested additional training. This project began with a training session for zonal facilitators, where most of them became proficient in receiving SMS

messages and some were able to begin teaching others. They were proud of their achievements.