

SMS Text Messages: Farmer Unions enhance Services to their Members through the Application of ICT Systems

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The African Cashew Initiative¹ supports various farmer groups and unions in their efforts to become more and more professional and to offer valuable services to their members. Producer organisations in the African context are often weak when it comes to service delivery to their members, limiting the attractiveness for producers to remain members. The limited interest in joining the farmer associations/famer based organisation in turn reduces the ability of the organisation to deliver quality services to its members, perpetuating the situation.

SMS Text Messages improve Transparency of the Cashew Value Chain

In Ghana, the Wenchi Cashew Farmer and Marketing Union regroups several farmer cooperatives associated with cashew production and marketing. To improve transparency in marketing transaction an ICT system for price and weighing information has been introduced in 2010 and successfully implemented in five zones in the Brong Ahafo region². This system is active during the marketing season and it has been used by approx. 400 farmers who registered with the union for price and loading information. During the rest of the year the system has been idle.

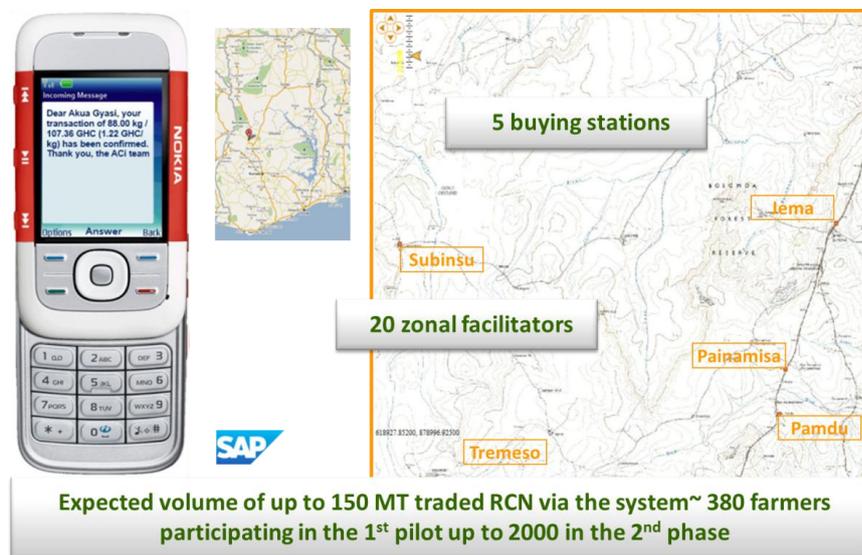


Figure 1: Sample screen of receipt send via SMS to a famer's phone and location of the buying zones in the Wenchi district in the Brong Ahafo region of Ghana.

¹ www.africancashewalliance.com/aci

² The system based on SAP tailor-made software has been improved based on the experiences from 2011 season and new farmers subscribed. The system is operated in 16 zones for more than 1000 farmers for the 2012 season.

Economist: <http://www.economist.com/blogs/baobab/2011/10/smartphones-africa>

Interactive Learning Methods improve Farmer and Extension Agent Training

Member farmers receive training on good agricultural practice during interactive sessions organised by agents of public extension system with support from ACi. One element of support is the training of extension agents in extension methodology by employing picture material. Tested sets of questions (and answers) are used to stimulate discussion and learning amongst farmer groups. The training is complemented by practical demonstrations and radio broadcasts.



Training session



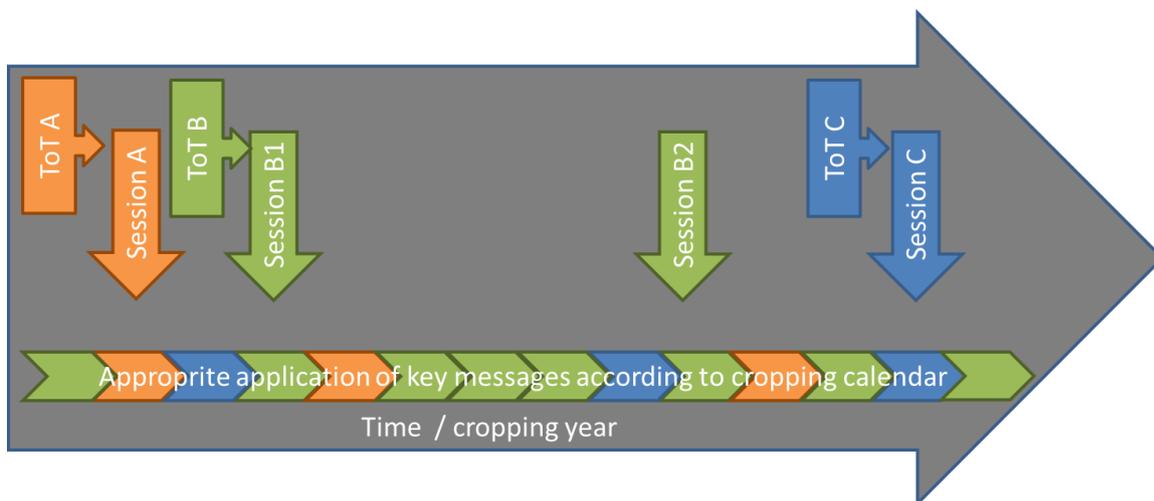
Picture material used



Practical application

Figure 2: Dedicated training material for illiterate farmers using of picture material and key extension messages formulated as sets of question and answers

The interactive training covers several modules: installation of plantations, management of cashew through good agricultural practices, harvest, post-harvest and quality aspects of raw cashew nuts as well as phytosanitary information. The training sessions are organised according to the cropping calendar. However, interaction between farmers and extension personnel is limited to 3 to 5 sessions per season.



NB: Training module „B“ is held in two sessions

Figure 3: Due to logistical constraints and work organization, not all topics are treated at the most appropriate time according to the cropping calendar and are „packed“ in one or two interactive learning sessions per training module (□□□).

Complementary Communication Channels ensure Implementation of Training Contents

During the cropping season and especially at peak times, interactive sessions and grouping of farmers are difficult to organise. Some of the newly acquired information and skills cannot always be applied immediately after the training and would need some reminder/refresher at the appropriate time. Also training is always organised in advance to the real time of implementation of the recommended practice. For this reason it has been suggested to combine different communication channels and sources of information. Extension messages are primarily delivered through interactive trainings using pictures supported by peers from the same group and complemented by radio messages (ideally preceding the interactive training). Subsequently, SMS text messages are sent to remind about some of the key messages at the most appropriate time.

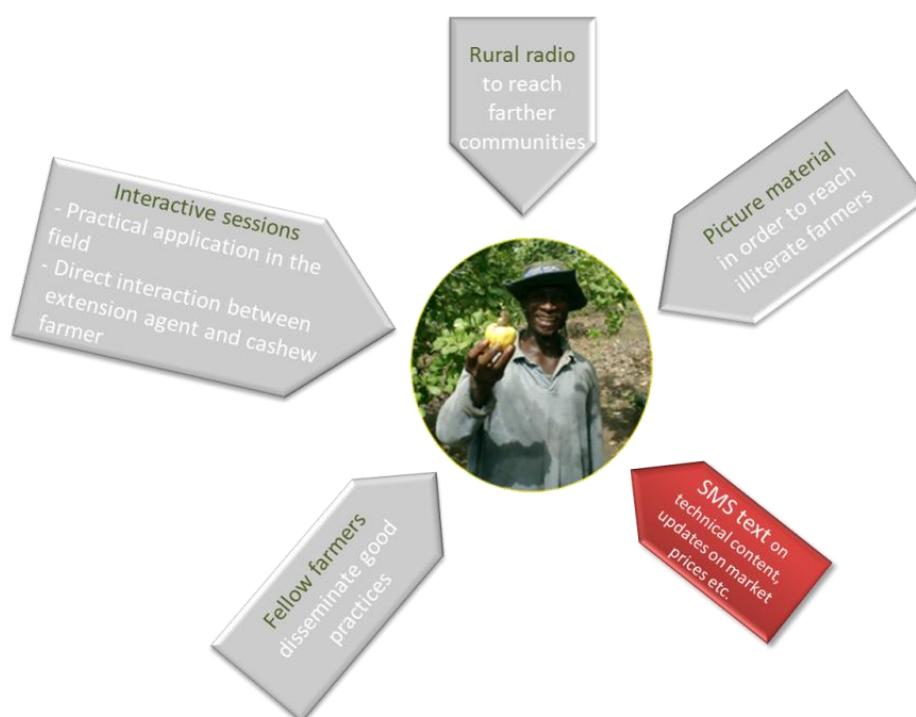


Figure 4: Complementarities of key messages and sources of information

SMS Text Message Delivery, Reception and Reading

Until mid 2012, FrontlineSMS³ is used for the bulk sending of SMS and the management of contact details. The ICT system used for the price and buying information is now redesigned in order to provide services on a modular basis and combine all options in one application for computers and for mobile phones. Also two-way communication via SMS for surveys and monitoring purposes will be possible using reliable gateway service providers. This is necessary as there were significant issues with text message delivery. The field evaluators looked at each individual cell phone to see, if SMS were delivered, whether the recipient had opened the message, which messages had been delivered, and when they were delivered. It was found out that many farmers received only a few of the text messages, indicating widespread problems with SMS delivery. For example, during the second and third field visit, it became clear there were delivery problems with SMS. Only ~ 20% of the people receiving messages had received all the SMS, while ~80% had received only some of the SMS.⁴The

³<http://www.frontlineSMS.com/the-software/>

⁴based on field evaluations conducted in July; August and September 2011 amongst 158 participating farmers



personnel from the farmers union acting as buying agents and using the software application on their smartphones has been trained in receiving and reading SMS texts also on ordinary phones and give support to their peers on the use of SMS services.

The messages are sent only to participating cashew farmers repeating key messages taken from the interactive sessions. These SMS messages have been discussed and their wording chosen in joint collaboration with farmers, extension services, research and project staff. The messages are sent in English and contain no more than 160 characters.

Overcoming Challenges of Illiteracy and ambiguous Message Content

The majority of farmers interviewed claimed to read and be able to understand the text messages, only relatively few people said they were illiterate. After conducting the interviews it was suggested that farmers who had difficulty reading asked their family member for help. Thus, although farmers may be illiterate or struggle with reading, they are resourceful in finding help. During an evaluation workshop with the local facilitators this has been confirmed as well. Farmers reportedly stated, when they received a text message from their union they seek for help if struggling with reading.

The language and the complexity of the text message did not appear to be a barrier, except when agricultural terms were unfamiliar. The only message that was widely misunderstood and prompted requests for simpler wording was from 31st August 2011 advising that “water shoots” should be removed. The term “water shoot” was understood differently as to stray branches, new growth, a certain type of pest, or drainage problems. It has been a process of moderation and negotiation among farmers, practitioners and researchers to agree to the appropriate wording for the message to be both “scientifically correct” and easy to understand in vernacular language. This can be achieved by involving all parties in the process. By probing the text on a small focus group of farmers, we made sure that terms are familiar to those who have not been involved in the formulation as well.

2011	SMS Text (limited to 160 characters including space)	Short code	Type	Num	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 x 10m) 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 or 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 & 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 wilted 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 1 m distance away from the trunk of the young cashew tree between the intercrop and the tree to avoid competition.		TECH	14																					x

Figure 5: Sample messages

SMS Text Messages also include Information on Social Issues

Apart from purely technical message, the union uses the system to communicate information about meetings, elections and other topics related to the functioning of the union and of interest to its members. Messages on general subject like HIV/AIDS complete the range of information shared through the SMS service.

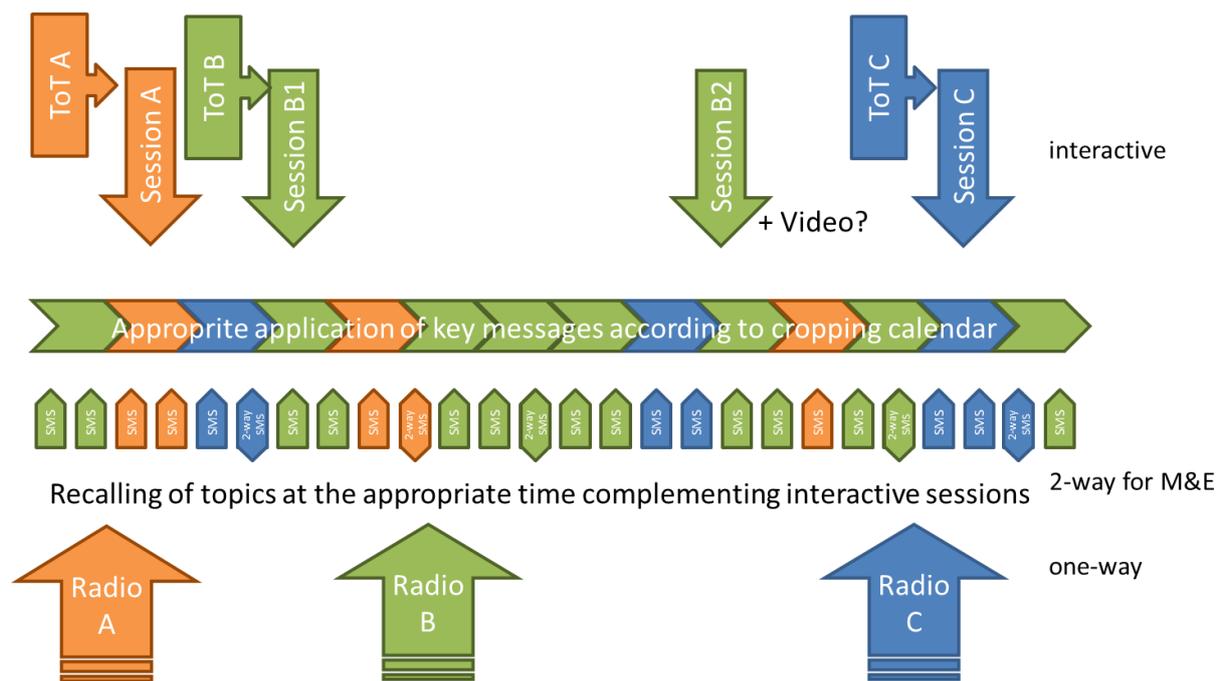


Figure 6: Radio message have to be delivered earlier than the application in the field, followed by interactive training and then complemented by SMS text at the appropriate time of the respective field operation

Text Messages structure Activities of Farmers

Farmers happily stated that the messages were very useful to them. In a follow up we ask “Why” and the most common reasons given were that it was a reminder, or a reference to some new or useful information in the SMS. A large majority of farmer interviewed said that they discussed the messages with other farmers, and only a small minority said they were consulting with extensions agents from Ministry of Food and Agriculture (MoFA).

Most farmers said that they had done the work suggested in the SMS. Although farmers frequently mentioned they had done the work without the SMS, they still appreciated the “reminder” and found the “timing” of the SMS helpful. Farmers and especially zonal faciliators highlighted that most farmers knew how to do most of the work suggested in the SMS, they just did not know the correct time. The farmers valued the SMS because it helped them structuring their activities. It reminded them of when to engage in the various farming activities in order to have a productive cashew farm. The information in the SMS itself is helpful, nevertheless the timing of the message and the reminder of engaging in the various activities is what farmer appreciate most. There are specific areas (i.e. fertilizers, 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 clearly stated that they saw an effect from the SMS in their communities. Their answers to the follow-up “What effects do you see?” confirmed some of our impressions from the farmer interviews. In particular, the facilitators most commonly said that more farmers were doing the work at a particular time, and that farmers already know about the work but had not known enough about when to do it. For example 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 in follow-up responses. The value of the SMS seems to be in the structure it gives farmers, helping them organize the work they do during the year, as much as it delivers new information about farming methods.



Figure 7: Farmers’ perception of usefulness and challenges

Farmers are willing to pay for SMS Extension Services

The service is free for registered members during the pilot phases. The cost for broadcasting the messages at a rate of 0.038 Ghana Cedis (Ghc) is approximately 2 Ghc per year for 52 messages. The willingness to pay for the services and costs of broadcasting has been evaluated during three field visits along with the use and perceived usefulness of such services.

The vast majority of people interviewed said they were willing to pay for the SMS extension service if offered by the WCFMA. The average amount farmers are willing to pay seems to be about 3-5 Ghc. It spiked to 7 Ghc 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 fertilizers (farmers specifically mentioned their interest in this during the interviews).

One result from the various discussions is that the farmers would like to pay for the service through their union dues or by money deducted from the sale of their cashew to the union. They do not want to pay for it separately in cash, because they are not sure when during the year they would have money available. The options for sustainably maintaining the SMS service are currently explored by



the management of the farmer unions to find out what solution fits best. Additional consideration needs to be given to the fact, that not all farmers subscribed, receive messages and that not all of them have cashews sold to the union (e.g. because they have just started planting cashew or sold elsewhere). Also, some messages are sent to non cashew farmers (e.g. extension agents, local authorities, chiefs, etc.) for free of which the cost would need to be born from common funds. The next general assembly would need to look into the issue and a decision to be taken will be prepared based on the different options.

Community Cell Phone Trainings increases the Impact of SMS Extension Service

During the field interviews about half of the respondents reported problems using mobile phone technology. Almost all the farmers had a mobile phone they used routinely, but they are usually older men and women and unfamiliar with text messages. Training of zonal facilitators in SMS use was necessary but not sufficient, as a single training with follow up help from volunteers, was not enough to say that facilitators are familiar with all SMS functionalities their phones offer. However, some facilitators did become resources for mobile phone help in their communities. Farmers reported problems with both opening and replying to SMS. When asked for suggestions to improve the SMS project, a common answer was a request for local cell phone training. Community cell phone training that involves zonal facilitators, farmers, and local resource people like mobile phone credit sellers could be envisaged. This is supported by the statement of some of the facilitators that they received additional help using mobile phones. One in particular regularly consulted with a mobile phone repairer in his town, suggesting that younger members of the community engaged in selling or repairing mobile phones may be a good resource for training farmers in SMS use.

A significant barrier to the farmers' use of the SMS is their lack of proficiency with the SMS functions of cellular phones. Most of the older farmers use their mobile phones exclusively for phone calls, not for SMS, mobile banking, etc. However, they are quick to see the possibility and frequently requested additional training. This project began with a training session for zonal facilitators, which was quite effective in that most of the zonal facilitators became proficient in receiving SMS and some were able to begin teaching farmers how to receive and reply to SMS. After getting to know these men, we could see that they were proud of their abilities.

African Cashew initiative

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