

Gender and the Legume Alliance

Integrating multi-media communication approaches and input brokerage:

Soybean Campaign Report - Ghana

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Acronyms

Acronym	
AGRA	Alliance for a Green Revolution in Africa
ASHC	Africa Soil Health Consortium
B&MGF	Bill & Melinda Gates Foundation
CABI	Centre for Agriculture and Biosciences International
FAW	Fall armyworm
GALA	Gender and the Legume Alliance
GAP	Good Agronomy Practices
ISFM	Integrated soil fertility management
NLA	National Learning Alliance
SAI	Sustainable agricultural intensification
SAIRLA	Sustainable Agricultural Intensification Research and Learning in Africa
SARI	Savanna Agricultural Research Institute
SIL	Soy Innovation Lab

Executive Summary

A campaign is defined as a coordinated set of activities intended to share information on a particular topic. The aim is to achieve change in farmer behaviour and practices at scale through integrated efforts by different organizations using a variety of communication channels.

In Ghana the campaign focused on the promotion of soybean technologies as part of a program of sustainable agricultural intensification (SAI) in Northern Ghana. Soybean is a good candidate for sustainable agricultural intensification because:

- Current practices tend to massively under-plant soybean – meaning that correcting the spacing can intensify soybean production into smaller spaces or significantly increase production. The correct spacing of 1 seed every 5 cm or 2 seeds every 10 cm are a challenge for farmers, because it is labour intensive and planting is done by hand. But yields improve on a plant by plant basis from the correct spacing. The same seed will produce a higher yield if the spacing is correct. So, the land utilized can be reduced, or yields increased - as a means of intensification.
- The second big win in terms of environmental sustainability comes from the improvements to soil fertility. The technology of adding inoculant to the seed at planting supports biological nitrogen fixation in the soil especially when inoculant and P fertilizer are used together. It can be a significant part of the process of restoring fertility to the depleted soils of Northern Ghana and boosting the production of other crops such as maize or cereals that also require nitrogen.
- In Ghana soils are often over worked and are at risk of serious depletion. Very little is returned to the soil in terms of organic matter. Small changes help such as the introduction of non-shattering bean varieties means that farmers, especially in the cooler morning periods, should be able to cut the bean plants from the roots, leaving behind some organic matters and the nodule bearing roots.
- Growing soybean can also help eradicate *striga* (a parasitic weed that attacks cereal crops, retarding plant growth, resulting in stunted and withered plants), in part through the improved soil fertility.

In addition to the SAIRLA funding, the campaign in Ghana was also implemented with funds leveraged from the Africa Soil Health Consortium (ASHC), a CAB International project funded by the Bill & Melinda Gates Foundation (B&MGF) to promote integrated soil fertility management (ISFM) approaches in five countries including Ghana, Tanzania, Ethiopia, Uganda and Nigeria.

The campaign in Ghana also benefited from ASHC's prior experience in the country which provided real insight into the key partners, media provision and messages that could resonate with farmers. Among ASHC's previous work is a project called COMPRO II which had supported the uptake of inoculant technologies in a number of countries including Ghana. Furthermore, the campaign builds up on the body of knowledge of the N2Africa project (see D1.1). N2Africa has links with a series of value chain initiatives in Northern Ghana with the overall scope of "putting nitrogen fixation to work for smallholder farmers in Africa by expanding area under production and improving the yields of legume crops to improve income, nutrition and food security of smallholder farmers".

Initially, this project had been hampered by the lack of government approval of bio-products such as inoculant. At the time of the 2017 campaign there were two inoculants (LegumeFix and Nodumax) available in Ghana although it was expected that the number would increase in the near future. Recently, Green-Ef won the tender process to commercialize Sarafix, a product made by the Savanna Agricultural Research Institute (SARI) in Ghana once it is ready to bring to market. The Alliance for a Green Revolution in Africa (AGRA) has invested in bringing Sarafix to the market.

The campaign involved village film screenings, SMS messaging, print materials, extension meetings and radio spots and discussions. The project team has already gathered key lessons especially on the use of village based film screening, including how proper timing of films and collaborating with community leaders can increase participation especially for women, as well as running screenings in areas with good agro-dealer distributorship in order to increase access to key inputs.

1 Campaign Approach

An initial consultation/inception meeting that took place in November 2016 in Tamale highlighted the strong potential for delivering a campaign building on existing opportunities and development work around soybean and explored some of the gender considerations in our outline.

An exercise on opportunities and challenges for reaching women, men and youth provided some useful insights that informed our thinking and approach. At the initial consultation meeting we also experienced what a valuable role the members of the chieftaincy can play as they have an insight into the role traditional authorities can play in developing and implementing a campaign. This insight was useful in establishing local mores and customs that impacted on the timing of our interventions to maximize participation.

The central thrust of the campaign was initially planned as a minimum of 75 village-based film screening and 21 extension meetings. The experimental design meant that these events were supported with either: no print, a short leaflet or a longer leaflet.

The objectives of the campaign were two-fold:

- To suggest to farmers, not currently engaged in soybean farming, the opportunities that soybean offers as means of increasing livelihoods and improving soil fertility – where they were confident they could access markets
- To suggest that farmers considering growing soybean in the upcoming season, are made aware of the impact of inoculant, fertilizer and improved seed on yields and soil fertility as a technology package

The campaign promoted good agronomic and integrated soil fertility management (ISFM) practices specific to planting, harvesting and post harvesting phases, presented in the context of sustainable agricultural intensification.

Soybean is a crop that is traded internationally – causing large fluctuations in the global price of grain. This means that farmers need to be confident about access to markets and accept that there will be a cycle of price and demand fluctuations. However, there are risks inherent in growing the crop due to the price volatility. This need for market access had to be stressed in all materials produced during the campaign.

Whilst the campaign did not link specifically to any brokers, off-takers or producers it did take a very responsible position in terms of encouraging farmers to explore the potential markets before they committed to growing soybean. There are new opportunities for ASHC/ GALA to work with the National Learning Alliance (NLA) in Ghana to address the opportunities for local processing of soybean for livestock intensification.

2 Technical Brief

A technical brief on soybean which was used as basis for implementation of the soybean campaigns in Tanzania was discussed with the participants and key experts attending a technical meeting in Tamale on 15 November. The CABI team also did a review of the technological information provided by the Savanna Agricultural Research Institute and Soy Innovation Lab (SIL) in shaping the [final technical brief](#) to be used as the reference point for all the materials to be produced 2016. This document was then signed off by the lead scientist responsible for soybean at SARI. SARI is the mandate holder responsible for the quality of technical information on legumes supplied to farmers in the Northern region.

3 Geographic Coverage

The campaigns took place in Northern Ghana, considering this is the area where about 80% of legumes are grown and where most of value chain initiatives partnering with N2Africa and SARI are located. Site selection where the specific elements of the campaign were implemented was based on consideration of additional factors such as:

- Radio coverage: the campaign needed to find a radio station aligned to the selected geographic area and the languages selected for the campaign.
- Presence of a network of agro-dealers as the campaign has a strong focus on input supply and demand.



Figure 1: Map of languages in Ghana

- Presence of Green-Ef, one of the key firms involved in the marketing of inoculants in Ghana.
- Presence of parallel initiatives such as the Soy Innovation Lab (SIL) who are a research project looking at areas including variety development and low cost mechanisation

One of the challenges of working in Ghana is the wide range of local languages. The choice of languages impacts on geographic coverage that can be serviced.

In consultation with local partners, two languages emerged Gonja or Dagbani.

The villages visited were pre-selected by CABI and Countrywise Communications Ghana, a private sector media company based in Tamale. They had to be:

- Gonja or Dagbani speaking (the languages selected for the film)
- Remote enough to make it unlikely that farmers would access more than one screening
- Close enough for serving by the tricycles and the enumerators attending the screenings

The areas where the campaign takes place overlap with the areas where the baseline survey took place (see D2.1).

At the initial planning stage, we had little information on previous soybean promotional activity or access to output markets. Additional information has since been gathered and used to improve site

selections for the 2018 campaign, tying the screenings directly to areas where agro-dealers plan to stock inoculant and other farm inputs.

4 Campaign Elements

The GALA delivery team needed to be confident that farmers could access the inputs recommended in the media. Matching supply and demand for inputs involved in a campaign is complex. The agro-dealers assume the farmers will not buy inputs and so limit their exposure by stocking only small amounts. Over-stocking on perishable inputs (like inoculant or seed) could create risk of a significant loss, if the products remain unsold.

Our scoping work showed that Green-Ef, a Ghanaian-owned agro-inputs wholesaler that is working to capacity build an agro-dealer network in Northern Ghana, had a stock of inoculant that was a cancelled order. This meant we could be confident that the product was in place for 2017. The fact that this product perishes in May 2018, before the 2018 planting season, also meant that efforts to encourage sales would support the viability of Green-Ef. Green-Ef is active in 3 regions Northern, Upper East and Upper West. For pragmatic reasons, we focused on the Northern region in 2017, closest to the base locations of our three partners.

The campaigns were aligned to correspond to the main planting season in northern Ghana which runs from mid-June to mid-July. The selection of the campaign channel was a pragmatic process that entailed the following:

- Scoping the locally available media mix
- Exploring how specific channels suited the messages to be shared
- Exploring the value for money in reaching the targets
- Exploring how the media can reflect issues of language and literacy
- Ensuring that the channel and format work to deliver gendered approaches, wherever possible empowering women and young people (under 35-year-olds) to have parity of access to information

Each of the campaign elements are elaborated below:

4.1 Films

The central plank of the campaign in Ghana was the production of a 45-minute film covering all aspects of soybean farming from land preparation to post harvest. Film screenings have to happen after dark. At this time women, it was thought, should be able to attend the film screenings because the events occurred after religious observances and all the day's chores had been completed, including the preparation and consumption of the meal. It was also a child friendly environment which meant that whole families could attend, overcoming child-care issues. In reality, the timing of the film screenings in each village was negotiated with community leaders because it was perceived to be critical in empowering the widest audience to attend.

Village-based screenings in Northern Ghana had been pioneered by SARI and private sector media company, Countrywise Communications. They used motorized tri-cycles to reach remote villages taking with them a generator, a projector and a screen. These vehicles are very manoeuvrable, even when the rains start to come they can get to settlements which are not accessible to larger vehicles. Previous village based film screenings had been well received by both the local communities and the development community, but no significant investment had been made to establish a more permanent film screening circuit to share information with rural communities. Countrywise had also not been able to keep the tricycle used in the project as SARI had a prior claim on it.

The films on soybean did mention the opportunity for farmers to get soil tests carried out. However, we avoided recommending liming, suggesting instead that farmers work with their soil types. Liming is possible but it requires a great deal of effort to apply lime every five years. The team could not find data that showed the benefit cost of this technology at the time of producing the technical brief.

The screening events comprised of three elements:

- A series of music videos were screened to build a crowd and attract interest (the music is played at volume and can be heard widely in the area around the village. Many of the films selected for the screening had meaningful content about issues that affected the local community.
- The soybean agronomy film was shown
- An extensive session of Q&As were taken by the screening officer

At the screenings, enumerators encouraged farmers to share contact details and some basic research data—gender, age and history of growing soybean. On the evening the GALA team attended one of the village screenings, the Q&A lasted for over an hour. The facilitators were able to do the Q & A because they had all worked with SARI on soybean programs. The 2018 campaign will incorporate a training day to go through the technical brief with the screening officers.

4.2 Print Materials

In addition to the films, the campaign also used short and long explanatory leaflets produced in the English language and containing a toll-free number for farmers to contact Green-Ef in case they needed additional information. The rule of thumb used by CABI is that written material should be produced in the language used to teach secondary school science because many local languages lack the level of sophistication in their written form to guide farmers through relatively complex farming technologies. For instance, we often struggle to find suitable words to describe inoculant and words for manure and fertilizer can be interchangeable in many local languages.

The [short explanatory leaflet](#) contained key agronomic practices dubbed *10 steps to growing better soybean* with messages focused on:

- Field preparation
- Use of improved seed varieties
- Benefits if using inoculants
- Proper use of fertilizer
- Weeding
- Harvesting
- Post-harvest handling

The [long explanatory leaflets](#) contained detailed information on a wide range of topics with messages focused on:

- Soybean uses and market information
- Soil improvement
- Field preparation
- Improves seed varieties
- Proper spacing
- Inoculant benefits and application
- Weeding
- Intercropping
- Harvesting and post-harvest handling
- Yields and expected returns

In total 4,500 pieces of each leaflet were distributed during the campaign.



9

Dry the soybean plants in the sun - protect them from rain and animals. Preferably, dry on a mat, plastic sheet or tarpaulin, or on a raised platform.

Place the threshed grains on mats, plastic sheets or other clean surface until dry; protect from rain and animals. Test the grain to see if it is dry enough by biting - grain should break or crack, not bend or stick between your teeth.

10 Steps to growing better soybean

If you have access to markets - soybean can be a good source of income. Growing soybean adds nitrogen to your soil - so will grow better maize next season.

10

For more information contact the Green Ef helpline

Toll-free help line:
0800 200 300



1

Do not burn your fields - it destroys nutrients and important micro-organisms. Choose soil that will break down well to create a seedbed.

Partners

The GALA project is led by CABI and has been developed in collaboration with the International Institute of Tropical Agriculture (IITA), and in Ghana the University for Development Studies.



Funding

GALA is delivered with financial support from UK-Aid through the Sustainable Agricultural Intensification Research and Learning in Africa program administered by NRI.

Contact

CABI International
Web: africasofhealth.cabi.org
For more information contact the Green Ef helpline





2

Plant in moist soil - when you are expecting a couple of weeks of moderate rain. Dry spells or heavy rain will destroy the seed. Timing is important - soybean need to mature in October when the conditions are right for drying.

Figure 2: Short explanatory leaflet



Grow more soybean:

Produce 1 tonne of soybean from an acre

Invest in improved seed, fertilizer and inoculant and good agricultural practices

- Invest in seed varieties: Afayak or Jengum
- Invest in the right fertilizer: TSP
- Invest in inoculant: Legumefix
- Remember your agro-dealer and extension team can offer advice

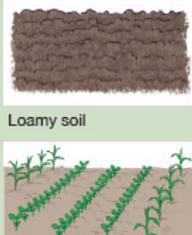
Soybean markets and uses

- Families and commercial processors make soybean into soy-milk, cooking oil, weaning food, kebabs and many other foods. Soybean cake and crop residues also provide protein-rich livestock fodder
- Soybean has high levels of demand, but price can vary from year to year depending on world market prices. Prices paid in previous seasons give you an indication of the income you might expect
- Before you commit to growing more soybean - make sure you have a plan to sell your surplus



Soybean and soil improvement

- Soybean can improve your soil - equivalent to about 2 bags of urea per acre for next season or intercrops like maize
- Soybean helps control Striga - due, in part, to improved soil fertility
- Soybean requires deep fertile soil that holds water - avoid very sandy or gravelly soils. It is not drought resistant and it struggles to emerge from a hard soil crust
- It grows best in loamy soil that has been feed with manure or plant residues over time
- Remember the nitrogen produced by soybeans can help intercropping or can be utilized by cereal crops next season



Loamy soil

Figure 3: Long explanatory leaflet

4.3 SMS messages

1,900 SMS messages were sent by Green-Ef to film attenders/farming families whose contact details were collected in the villages where the film screenings took place. The messages contained a single call to action ("Go see your agro-dealer it is time to purchase input"), which is a different approach to SMS to provide very specific points of information - rather than a 20-40 message campaign to share agronomic details covered in the film. In the campaign in Tanzania we had used SMS to provide messages on input use and good agronomic practices, whilst this time around there was a single call to action. What we are exploring now is how SMS can provide timely information as part of an integrated information campaign. SMS is a limited format - but it is great at providing the more dynamic information like weather, pest and disease outbreaks and the all-important market information. This sort of dynamic use of SMS fits well with moves to provide scratch cards for the validation of farm inputs and extend this into a just-in-time information service.

4.4 Radio Spots

The campaigns also entailed radio spots and discussion programs which were commissioned by Green-Ef but based on the GALA soybean technical brief. The CABI team helped to convey the complex

messages around inoculation into farmer-friendly language. These messages were timed to remind people that it was time to purchase inputs. There were no panel discussions in the 2017 campaign. However, in 2018 SARI plans to do a phone-in program with 22 different stations. As with the film, the radio stations require careful preparation to have inputs in the right languages for the station and the farming audience. Radio spots tend to be read by the on-air presenter. They are usually purchased as bundles and it can be hard to ensure that they are focused to the time slots that are best for reaching farmers. This informal approach to presenting the information on air means that the expense of producing multiple-language versions of an advert is avoided.

4.5 Extension meetings in villages

21 extension meetings were held in villages. These meetings used the technical brief to cover all of the content that was in the films, but without the audio-visual content. This meant that the timing of the events was different- taking place in the daytime, not at night. We planned to see how the events differed in their gender composition but unfortunately, enumerators were not provided for these meetings so we do not have attendance data.

5 Lessons Learnt

In implementing the campaign in 2017, the project identified challenges as well as garnered key lessons that will inform the 2018 campaign. Some of the lessons are highlighted below:

- **Women’s access to inputs:** Soybean is perceived as a crop that requires no inputs – because of its ability to fix nitrogen. Some observers suggest that it is this perception that has led to soybean being perceived as a woman’s crop. As crops move from low inputs to higher inputs and from food security to market crops – they tend to be less and less defined as women’s crops.
- **Input availability and use:** Improved seed and fertilizer are common agricultural technologies although they are not necessarily associated with soybean cultivation. Some of the key learnings around inputs include:
 - Inoculant is a different proposition, given that it is a product first approved for use in Ghana in 2015. The challenge of introducing new products should not be underestimated. Our colleagues at IITA have suggested that from introduction to mainstreaming could take at least 15 years in Northern Ghana. There are 4 inoculant products in the process of being available in Ghana including HiStick, a product developed by BASF, a German chemical company. During the 2017 campaign, there was effectively only one inoculant available. Legumefix comes in a 250 grams pack which is too large for many small-scale farmers and it is hard to share the packs given the need for a cold chain. Nodumax, on the other hand, comes in a 100 grams pack which suits most farmers because one sachet serves 0.5 acre. Each of these products will have different instructions on application which will impact on the complexity of the messages going forward.
 - Inoculation is not only a new technology in Ghana, but also one that works best as part of a package of technologies – including improved seed and P fertilizer. Whilst the inoculant is affordable, the package of technology is expensive and much of the benefit in soil improvement is realized in the next cropping season.
 - Inoculant also needs to be presented in terms of the systems benefits. It is important that the campaign does not only present this technology as a way to increase the production of soybean grain, but that it also shares the value of the technology as part of a programme of long-term improvement in soil fertility by addressing levels of nitrogen.
 - Seed availability is linked to varietal preferences – little is known about the varieties farmers want to access – part of the CATI and work based on the radio spots should help establish the preferred varieties by soybean farmers. The varieties have a number of local names in addition to their scientific names – ensuring everyone is talking about the same variety can sometimes be difficult.

- **Sustainability:** Several NGOs are giving away inoculant as part of a technology package to boost production – which meant that the project team needed to be careful in locating activities to encourage farmers to invest their own funds in inoculant and associated inputs for sustainability.
- **Lack of consensus around Nitrogen-fixation:** There is no clear consensus on the levels of N-fixed in the soil by different varieties of soybean and different combinations of legume technologies applied. However, this is beyond the scope of this project to answer.
- **Good agronomic practices:** In the Northern region, field burning is a cultural and agricultural practice that damages the soil but one that is deeply entrenched and hard to shift. The campaign in 2018 will need to focus on this as well as emphasising other important GAPs such as planting time, correct spacing and timely weed control.
- **Film production:** The team had to create a film for Ghana out of season which meant hiring an irrigated field. In retrospect, we should have filmed the content in the season before and tested the content.
- **Language:** The existence of multiple linguistic/cultural groups in the Northern region impacted on the production of film sound track/radio components. However the decision to have the printed materials produced in English supported the delivery of the campaign and the messages

6 Campaign focus in 2018

A strategic innovation in the 2018 campaign will be the incorporation of a fall army worm (FAW) component in the film screenings in order to help farmers recognize and counter terrible effects of the pest in addition to holding screenings in locations well served by agro-dealers willing to stock key inputs.

The table below shows a summary of the campaign activities scheduled for 2018.

Table 1: Table of campaign activities in 2018

Type of Media		Target	Comments
Media 1	Print 1- Illustration /graphic and limited text-led step by step guide	1 set of materials / family	Assumption: Farmers can read the text in English
Media 2	Print 2 - Photography and text led step by step guide	1 set of materials / family	Assumption: Farmers can read the text in English
Media 3	Extension officers manual (based on the Technical brief)	1 per extension officer for a total of 120 extension officers	<ul style="list-style-type: none"> Farmers can read the text in English Extension officers are available to distribute the material where requested.
Media 4	Film screening package	Average attendance 300 people	<ul style="list-style-type: none"> To be done at suitable time for farmers (when dark) Meetings are supported by extension and/or print and are organized in association with traditional authorities All events have extension support
Media 5	Film Blue toothable with response mechanism included in Dogbani	Before we can complete the target information we need to research the work undertaken by PICS in this area and review the technical options	<ul style="list-style-type: none"> Smart phones in the region have Bluetooth technology Viral – Can be combined with promotional events Promotion of the smartphone film will happen at all film screening
Media 6	SMS	50% of all interactions will farmers – above result in Phone numbers being collected	<ul style="list-style-type: none"> 6,500 new contacts details are collected during meetings and from the radio spots
Media 7	Radio spots	1,000 farmers interactions with radio spots	<ul style="list-style-type: none"> Funded by Green-Ef Farmers have access to radio Adverts are placed at suitable time for farmers (between 5-30 pm and 8pm each evening for a week around 10 spots a night)
Media 8	Point of sale material	Agro-dealers as a point of contact for heads of farming households	<ul style="list-style-type: none"> Around 180 new materials to support campaign in 3 regions