

SAIRLA Story of Change

Raising awareness and educating farmers on management of fall armyworm in Volta region, Ghana

According to Rwomushana *et al.* (2018) fall armyworm (FAW) was first reported on maize fields in Ghana in April 2016 and quickly dispersed through the country to affect all regions. The Ministry of Food and Agriculture (MoFA) reported that, as of 29 September 2017, over 144,000 hectares of maize, sorghum, millet and rice farms across the country invaded by FAW had been sprayed. About 131,000 hectares recovered and the rest was destroyed. FAW became a significant threat to the livelihood of over 4 million small-scale farmers, who bore the brunt of the invasion.

The Ghana National Learning Alliance (NLA) and a SAIRLA-funded research project 'Gender and Legume Alliance (GALA)', led by CABI, worked together to address the fall armyworm challenge. GALA was promoting improved legume technologies to farmers in the north of Ghana, but also distributed films on tackling fall armyworm at scale.

GALA and the NLA shared evidence of more effective campaign approach in relation to the management and control of fall armyworm (FAW) with district level extension officers in the Volta Region. They also distributed films on prevention, control and management of FAW to the extension services in 9 Ghanaian languages.

Some districts have adopted the communications approach and the films provided by SAIRLA to reach farmers. As a result, more farmers are following good practice and adhering to technical advice from extension agents on FAW control and management. Farmers are now more aware of what action to take and when. District extension agents are being encouraged by line management to include the improved dissemination practices in future work plans, indicating the potential for these initial results to be sustained.

The use of chemicals and pesticides has become the major means by which farmers manage and control pests and disease problems in crop production. But this solution comes with its own socio-economic and environmental impacts and requires a rigorous effort from all stakeholders to begin to explore sustainable alternatives.

The Ghana National Learning Alliance with support from the Food and Agriculture Organisation (FAO), succeeded in influencing the MoFA, the national FAW Taskforce, farmers and other key actors to jointly focus on better planning for FAW management. As a result of a coordinated approach by the NLA, biological control of FAW is gradually becoming a preferred choice which reduces risks to people and the environment from hazardous pesticide use.

1. The challenge

Following reports of strange larvae feeding on the leaves and stem of maize plants that began in 2016, district and municipal agriculture offices sent a technical team to assess the situation. The initial diagnosis from the team was stem borer attacks, however the outbreak of FAW soon became evident.

Farmers lacked information about the most effective means and methods to manage FAW. They used a range of approaches including; a mix-application of chemicals such as *chemomectin* and *emaster* with herbicides, pepper powder, neem leaves, tobacco, washing powder and wood ashes. While some farmers were hand picking FAW eggs and caterpillars, others used palm fruit fibre as bait for the FAW. Farmers burnt the crop residue of their affected fields after harvest to help control FAW infestation. Where they chose to apply chemicals, they were not able to apply at the recommended times because of an inadequate supply of insecticides or lack of funds.

The Director of MoFA for Volta Region has been a strategic partner on the Ghana NLA platform. He had a sustained interest and engagement in NLA discussions and learning events on policy issues around the effective use of chemicals to manage FAW. He identified limitations relating to extension delivery in his region on agronomic practices and effective FAW management and control and shared them with the NLA.

The challenge they faced was getting the content of the messaging right, delivering the message at the right time and reaching all farmers, including women and youth, in a culturally relevant way.

2. The intervention

The NLA realised that engagement with the GALA research project on effective campaign approaches for disseminating agronomic information was the best option to tackle the problems being experienced by the extension service. GALA had adjusted their dissemination plans in the north of Ghana. In addition to sharing videos on legume technology, they also translated and shared films on fall armyworm prevention, control and management. This meant 48,000 members of farming families – this is about 1.2% of the rural population in the area. GALA learned a great deal about the use of video in terms of reach and impact.

The NLA worked with the GALA project team to agree how best to apply the lessons to develop a framework for effective campaign approaches for disseminating agronomic information using videos). This showed that video screenings could be a cost-effective way to augment traditional extension activity.

Working with the district directors of MoFA in Volta region, the NLA and GALA teams organised a knowledge sharing workshop in the region on the use of the videos and provided the material to the districts for their use. The NLA's monitoring and evaluation (M&E) team conducted follow-up interactions with stakeholders in the field to track and harvest changes of behaviour following the interventions.

3. The change (result)

As result of the NLA/GALA knowledge sharing workshop, a number of District Directors from the Volta Region volunteered to replicate the approach in their districts. Each district acquired a film projector through Government of Ghana funds for dissemination of extension messages.

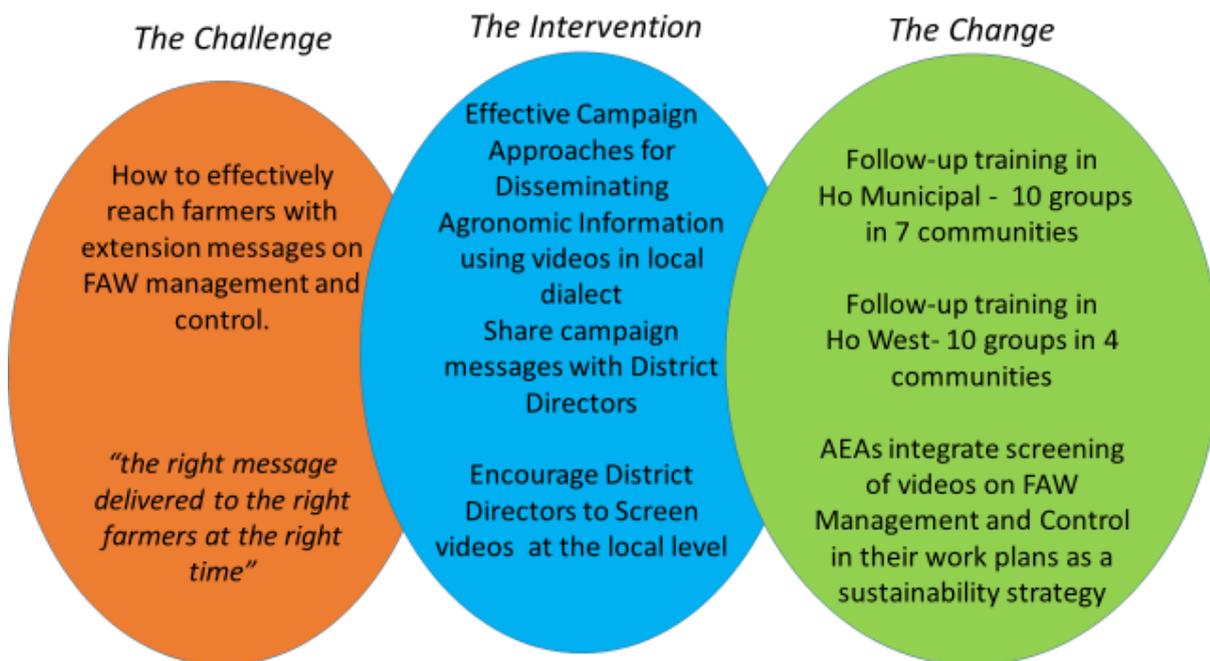
Ho Municipality District launched a programme the named "Night" to show the documentary on FAW management to farmers in seven communities in the district; Hodzo, Avey, Zaivi, Sokode-Lokoe, Sokode-Bagle, Ziopie and Kpetoe. The district dissemination team consisted of a screening officer who coordinated the screening of the videos on the ground and Agricultural Extension Agents (AEAs). **To date, a total of seven video screenings have been conducted by district extension services in the Volta Region for 700 members of farm families on tackling FAW.**

Applying the evidence from the GALA project, the public video screening took place in the evenings. This was found to be the best time of day to attract both men and women farmers. The

Department of Agriculture in Ho Municipality District have followed up the knowledge sharing workshop and the screenings with training for 10 groups of farmers on how to identify, control and prevent FAW in their communities and environment also using leaflets obtained from the NLA.

In Ho West, a similar FAW sensitisation programme was organised in communities including; Saviefe Abedome, Akoviefe, Abutia Teti, Abutia Agove with ten participants in each community.

To sustain the impact of the training and awareness creation, the AEAs in the districts were encouraged by their respective Head of Departments to include the new dissemination practices in their work plans.



From the screenings and training delivered by the agricultural extension agents, farmers have acquired skills and knowledge on:

- The best time to spray (early morning and late evening)
- The type of nozzle to use when spraying
- The use of protective clothing
- When to use which chemical at different points in the crop cycle

NLA monitoring interviews with farmers indicate that:

- Most farmers in the district became aware of agronomic practices such as spot burning of debris and scouting for FAW
- More farmers began to use the recommended chemical for FAW spraying
- Evening screenings were confirmed as the best time to reach farmers
- Farmers showed more interest in the campaign messages in their local Ghanian language where, importantly, there was less room for errors of understanding. Other dissemination methods have a higher risk of mistakes through the misinterpretation of often technical language. This contributed to improvement in the quality of extension delivery.
- There was strong local stakeholder involvement with traditional authorities in the communities supporting – such as providing the power for the screenings.

There were changes in terms of the type of chemicals farmers use as a result of the campaigns informed by the NLA/GALA in Volta region. There has been a trend towards using organic and bio chemicals in place of more hazardous synthetic chemicals.

Looking at the bigger picture, stakeholders confirmed that the Government of Ghana had supplied the chemicals shown in table 1 for distribution to the farmers for FAW management and control. In addition, the Planting for Food and Jobs programme had increased the supply of fertilisers and chemicals. Farmers have been trained on how to scout for FAW and only apply chemicals when they see the signs of an infestation.

Table 1: Fall Armyworm Control Chemical Distribution – 2019, Ho West District

Name of Chemical	Type	Quantity Supplied/Received	Beneficiaries	Acreages	Number of Communities
Eradicoat	Organic	24	42	58	5
Ema Star	Systemic	12	28	47	6
Adepa	Synthetic	36	32	45	5
Eforia	systemic	12	37	49	3
Agoo	Organic	320 sachets (g)	46	58	4

Source: Ho West District Assembly

Crop yields such as maize and rice in Ho District have shown a gradual increase over three years (see figure below). The intervention by the Ghana NLA and GALA contributed to the increase in yields of maize and rice in 2019 alongside other development partners.



Data Source: Ho West MoFA District Office

4. SAIRLA's contribution to the change

Agricultural extension agents, farmers and other stakeholders found the GALA campaign approach to be an innovative and effective way of reaching farmers with messaging on effective use of chemicals and appropriate methods of FAW control. In addition, materials distributed and translated by the NLA were used in the district campaigns.

Others' are also supporting farmers to better manage FAW in Volta region. The NLA had engaged with the district extension directorates of MoFA on MoFA's platform, and with the communication group of the FAW taskforce through CABI. Other development partners including USAID, National Disaster Management Organisation (NADMO) and Food and Agriculture Organisation (FAO) have done work in the Volta region on FAW: For example, FAO, through the Plant Protection and Regulatory Services Directorate (PPRSD), trained some AEAs on how to set pheromone traps in communities to control FAW activity on farms. However, the strategy shared with the districts by the NLA/GALA was very effective in terms of the numbers and categories of farmers reached with the campaign messages.

5. Conclusions

In addition to its work with the NLA in Volta region, CABI worked with the FAW taskforce to introduce village-based screenings to the Bono and Bono East regions reaching 10,000 members of farming families. A further screening experiment with Esoko, a telecom agency based in Ghana, meant a further 15,000 films were viewed. Surveys revealed that farmers watched the film with a further 2.4 people. In total 53,440 members of the farming communities viewed these videos at a cost of around USD 0.07 per viewing.

However, as at the date that data for this story of change was collected (March 2020), Volta region was the only region in which district extension services took up the SAIRLA promoted approach and materials, and funded and delivered it themselves.

Key success factors were:

- The MoFA Regional Director's leadership and standing: The change was aided by the fact that the Volta region had appointed a new charismatic director who had been promoted from the region close to Accra, the capital. He was eager to make a change and provided strong leadership on FAW management in the district. This, and the contacts he had from working close to the centre of power, contributed to his ability to make change.
- The NLA's relationship with the MoFA Regional Director: The long term engagement of the MoFA Regional Director for Volta region (including in his former capacity as Regional Director, Greater Accra region) with the Ghana NLA was critical in identifying the problem and providing an entry point for SAIRLA to bring to a local level the GALA project evidence on effective campaign approaches together with the NLA social learning on the effective use of chemicals for FAW management and control at the local level.

6. Looking forward

Not all the districts in the Volta region have implemented the NLA-GALA approach. This means that there is still an issue of misapplication of agro-chemicals to be addressed, especially when farmers receive free agro-chemicals from the Government of Ghana under flagship projects. In addition, the extension agent-farmer ratio is low and they cannot attend to every farmer at the peak of the farming season when the FAW infestation is prevalent.

Those districts reached as a result of SAIRLA engagement to date are being encouraged to integrate the NLA-GALA campaign approach and materials into future work plans giving some indication that the change described here may be replicated in future years and sustained. The wider adoption of the GALA agricultural extension campaign technique will be pushed forward through other policy dialogue fora.

7. Sources of Evidence

Rwomushana, I., Bateman, M., Beale, T., Beseh, P., Cameron, K., Chiluba, M., Clottey, V., Davis, T., Day, R., Early, R., Godwin, J., Gonzalez-Moreno, P., Kansiime, M., Kenis, M., Makale, F., Mugambi, I., Murphy, S., Nunda, W., Phiri, N., Pratt, C., Tambo, J. (2018) 'Fall armyworm: impacts and implications for Africa', Evidence Note Update, Accra: CABI www.invasive-species.org/fawevidencenote2018

'Ghana increases the use of bio-rational pesticides for fall armyworm management' (2019), *SAIRLA Story of Change*, Accra: SAIRLA <https://sairla-africa.org/resources/story-of-change-ghana-increases-the-use-of-bio-rational-pesticides-for-fall-armyworm-management/>

Materials developed for local district campaigns

- Clottey, V., Quaye, W., Duah, S. A., William, P. A., Karbo, N. and Essegbey, O.E. (2017) 'Fall Armyworm: A Threat to Sustainable Agricultural Intensification in Ghana', *SAIRLA NLA Ghana Policy Brief*, Accra: CABI
- Clottey, V., Quaye, W., Duah, S. A., William, P. A., Karbo, N. and Essegbey, O.E. (2017), 'Sustainable Agricultural Intensification (SAI): Policy Implications for Agriculture Modernisation in Ghana', *Policy Brief*, Accra: CABI
- Clottey, V., Quaye, W., Duah, S. A., William, P. A., Karbo, N. and Essegbey, O.E. (2018), 'Fall Armyworm: Impacts and Implications for Africa', *Information Note*, Accra: CABI
- Clottey, V., Quaye, W., Duah, S. A., Akuffobe M.E., Karbo, N. and Essegbey, O.E. (2018), 'Resistance Management in Pesticide Use', *Information Note*, Accra: CABI
- Clottey, V., Quaye, W., Duah, S. A., Akuffobe M.E., Karbo, N. and Essegbey, O.E. (2018), 'Hazard Profiles of Registered Pesticides in Ghana', *Information Note*, Accra: CABI
- Clottey, V., Quaye, W., Duah, S. A., Akuffobe M.E., Karbo, N. and Essegbey, O.E. (2018), 'Understanding Hazard Symbol and Precautionary Pictograms on Pesticides used in Ghana', *Information Note*, Accra: CABI
- Video production by The Story Well, Ghana