



Sustainable Agriculture Review, Uganda Executive summary

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In 2009 Send a Cow UK and Send a Cow Uganda jointly commissioned a review to consider how the sustainable agriculture, (now referred to as sustainable organic agriculture (SOA) to emphasise the use of natural resources as the inputs used in the system) component of the programme is contributing to the overall goal to improve farmer livelihoods.

The areas of particular interest looked at were: whether SAC project groups are:

- improving their food security, household nutrition and income
- producing quantitative improvements to their farm soils and crop yields
- taking up and continually using SAC's SOA methods
- served by an effective SOA extension system (Peer Farmers)

The underlying question is a big one - **What effect or impact has the use of sustainable organic agriculture techniques had on Send a Cow farmers in Uganda?**

Field interviews and soil samples were collected during 2009, mainly in April and November, in Central Region: Masaka, Nakifuma; in Eastern region: Kumi and Sironko; in Northern region: Lira. The soil samples were tested using professional test kits, and a smaller sample sent for verification to Makerere University.

The results of the review gave a picture of an 'average' interviewee farm and household's current situation, including a comparison of nutrition status of the family before and after the review. Some crop yield increases were also reported and recorded. Soil fertility comparisons were made for areas where farmers had used SAC SOA methods – often vegetable gardens and small cereal and cassava gardens, and areas of their land or neighbouring land that had not had any compost, mulch or organised rotations. The difference in soil fertility parameters was seen, and for some essential nutrients such as nitrates, some cations, and pH for good crop root

environment, these were statistically significant. The improved soil organic matter is encouraging for the long term sustainability of farmers' livelihoods.

Most farmers in each group are practising SOA methods: data collected through the committees of the groups on 634 farmers showed 71% are practising Well/Very good or OK/Fine. Analysis of the reasons why the other 29% are not doing well in groups where all the farmers' situations were known, showed that only 11% of those (3% of the total sample) were not sick, elderly or had a disability which prevented their full participation. The results and different scenarios were extrapolated into the bigger data pool and considered against various models of the spread of technologies or innovations through a population.

SACU partner groups have their own by-laws and decide how to work with members who do not implement SOA on their farms. Some general principles were derived from the farmers' comments, for future guidance.

Other differences between those doing 'Very Well' and those only considered to be 'OK or Fine' were observed and discussed. Consequently it is recommended that water retention, harvesting and issues of water access are included within SAC training, and efforts made to network with other agencies on this.

The Peer Farmer (PF) training system is still the training method preferred by SAC group members. The number of farmers one PF can work with, the issue of whether their position is permanent, and how they can access new ideas or techniques was discussed with them and with the groups. An apprenticing or trainee assistant model is suggested, along with recommendations to support the development of peer sharing networks. The success of the Peer Farmer method in SACU, its sustainability, cost effectiveness, emphasis on volunteerism within a group lead to discussion of how 'horizontal diffusion' of ideas may also be appropriate for other aspects of SAC group training and learning. The changing roles of national and international offices are also considered in the light of this.

What effect or impact has the use of sustainable organic agriculture techniques had on Send a Cow farmers in Uganda?

This review took place in 2009 seven years after the previous one, in a time frame that has seen many changes in Send a Cow UK and Uganda. Initially SOA was only practiced in a few projects that had links with organic farming through St. Jude's or Kulika Trust. Following the 2002 review SOA was spread to all project groups using Peer Farmers as the mechanism of training and follow up.

Send a Cow farmers are on average now eating three meals a day. This has significantly improved since they joined SAC. Send a Cow works with vulnerable people, and in the sample group 34% were eating only one meal a day before they joined the project – higher than the national average of 10% taking only one meal a day. This shows good selection of the farmers in the group, and positive improvement in nutrition for them.

Farmers are also eating a wide variety of foods including animal proteins and fruit and vegetables, some of which are new crops for them.

Other indicators of wealth such as house construction materials also show more SACU farmers than the national average using more expensive permanent materials.

Gardening for better nutrition: sustainable agricultural systems

Small scale farmers in Uganda are eating much of their own produce. Better nutrition is directly related to better plant and animal husbandry. One measure of improved agricultural techniques is an improvement in the soil quality – texture and nutrients, thus allowing for better yields and quality of crops. The soil sampling showed that the use of Send a Cow SOA methods caused:

- pH increase
- soil organic matter increase
- nitrate increase
- potassium increase
- calcium increase

All of these are good for the soil quality and ability to support healthy plant growth and crop production. Increases lead to better yields and thus the possibility of income as well as improved food supply. Crop yield increases reported ranged from 145% to 400%.

Improving livelihoods in Africa by providing farmers with quality help, training and support

Send a Cow works with farmers by providing access to new agricultural methods through training, support and technical advice from regional and national staff. New ideas spread throughout the project groups with the help of Peer Farmers, who are specially selected group members. However, sometimes farmers don't take up these methods, or stop practising them.

We have seen that in the groups 71% of farmers are practising SOA and a further 26%, in the most likely extrapolation of data from known group figures, would like to, but are prevented by sickness, age or disability. By looking into social learning theory and from the interview responses it appears that SOA methods have become the norm in the groups with only the very last few farmers resistant or unable to implement SOA. The challenge of ageing, persistent sickness and group members who have a disability is addressed by the individual groups. We can say confidently that the SACU SOA methods have spread and are relevant and useful.

Peer-to-peer spread of innovations

SACU has helped groups to implement a Peer Farmer Training system. The review findings show that groups agree that the Peer Farmer Training System is the best one for spreading SOA methods. Some of the groups have had Peer Farmers for 6 or 7 years and have thus tested this

model of extension well. The spread of SOA methods through the groups as described in the previous section supports this finding.

The Peer Farmers system was chosen from a number of alternatives following interviews with farmers, staff, agriculturalists and other NGOs in 2002. The mainstreaming of the model was done based on the endorsement by those interviewees. Seven years later, all the farmers in SACU groups that were interviewed, again support this peer sharing horizontal extension system.

Conclusion : Is SAC Uganda fulfilling its vision and mission in the SOA component?

The sustainable organic agriculture methods being used by SACU are measurably contributing to the overcoming of poverty and malnutrition, through improved soils, increased yields, more food variety and better nutrition, household income increases, and the spreading of new technologies through a horizontal farmer driven mechanism. The farmer survey shows that those selected are amongst the vulnerable people, including elderly, sick, people with a disability and those of low nutritional status. The by-products from animals are integral to SOA, and the whole process is based within local groups who have shown they can sustain SOA methods after they are no longer receiving full financial support from SACU.

Recommendations

The review has shown that Send a Cow farmers are using appropriate, effective sustainable agriculture methods. Innovations, adaptations and ideas from the groups need to be spread – as we try to act as ‘knowledge brokers’ to support these groups, then the following are some recommendations based on feedback from the group members, executive committees, Peer Farmers, staff members and the review team.

Crop production, yields and soils

- Continue to use sustainable organic agriculture methods – low external inputs and based on natural resources
 - Allow for and encourage the spread of local improvements and adaptations
 - Emphasise principles in SOA to encourage understanding and innovation
- Encourage farmers to know and record changes to their soils through simple observations on organic matter
- Keep exposure of group members and the surrounding community to SOA high
- Staff
 - be available as facilitators of information passage between groups
 - supply technical information on demand to farmers; source information or expertise if needed
- Water - major constraint to further improvement for farmers
 - Incorporate water harvesting methods into training

- Link with NGOs and government schemes improving water access
- Search for very water efficient garden designs that may arise

Groups and group structures

- Continue with cell groups
 - Consider best options for ageing cell groups
 - new younger members?
 - Cell to cell support?
- Family Training Days in school holidays to spread SOA beyond original members
 - Increase links with local schools – school garden projects
- Increase exchange visits for group members

Peer Farmers

- Ratio to farmers
 - Work with 25 farmers
 - Half way through the project time with SACU, add in assistant/apprentice
- Networking
 - Have active networks of Peer Farmers from nearby groups
 - Support annual regional Peer Farmer retreats
- Information spread
 - Support continued education and exchange visits for Peer Farmers
 - Support and search for linkages for Peer Farmers with NGOs, government structures, training organisations and appropriate businesses
 - Link Peer Farmers as contact points for research organisations and universities

Group and Send a Cow values

- Encourage volunteerism so that all group members have an active role
- Keep to participatory training even if this means finding alternative ways of remunerating Peer Farmers
- Extend horizontal empowering learning networks into other areas of SAC group life
- Staff and offices, regional, national, international, act as knowledge brokers and facilitators