CIMMYT

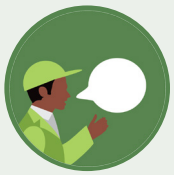
SIMLESA
Sustainable intensification of maize and legume cropping systems for food security in eastern and southern africa

IIAM
Instituto de Investigação Agrária de Moçambique

Australian Government
Australian Centre for International Agricultural Research

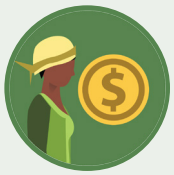
Investing In Scaling Modalities, Laying the Foundations for Sustainable Agricultural Intensification in Mozambique

Summary and key facts



The diffusion of better farming practices rarely happens without critical extension and market support

A unique multi-stakeholder approach by the SIMLESA project has demonstrated the potential for scaling with the right investments



Yet the costs of learning and experimentation of new technologies is often high for many farmers.

These investments could support: extensive networks of community based demonstrations and model farms or support seed capital for small agribusinesses to sponsor networks of information exchange

What is the problem?

Farmers lack innovations needed to feed a growing population in the face of climate change

Mozambique's food, nutrition and arguably economic security lie on the shoulder of about 3.9 million women and men farmers. However, the backbone of the country's food security relies on rudimentary agricultural farming practices that cannot meet the demands of a growing population and changing climate.

Recent evidence indicates that only about 7% of farmers use improved seeds, resistant to drought and diseases, and only 5% use fertilizers in any amount. Average yields are about 0.8 tonnes per hectare, which is well below the regional average. Due to this nearly 1 in 4 households are food insecure at any one time. The country's food security is built on weak and even uncertain foundations. Strengthening Mozambique's food security and sovereignty requires smallholder agriculture to include modern technologies that raise production and protect the environment.

What solutions were identified from research?

Information sharing and partnerships are key to widespread adoption of productive innovations

It is true that lack of finance, labor and limited risk-taking capacity are important, but much progress can be made by investments in the benefits of better seeds, fertilizers in combination with cost and resource saving agronomy. For eight years, the SIMLESA project has been testing and promoting a package of technologies adapted to smallholder conditions which at their core promote higher yields and use farmers resources more efficiently by using conserving methods of production in addition to use of fertilizers and better varieties. The basic philosophy has been the application of cost-effective but productivity enhancing and resource conserving practices. The package of practices are called Conservation Agriculture-based Sustainable Intensification (CASI) technologies.

At the start of the project, less than 1 in 10 farmers from each of the project areas used a form of conservation tillage, and about 1 in 4 implemented some elements of conservation agriculture. Through the application of SIMLESA scaling models by 2016, the adoption of at least one CASI technology rose from about 24% in 2013 to about 62%. In order to develop scaling lessons that can be used to spread promising packages, SIMLESA implemented an intensive scaling program based on three pillars: Demonstration of agronomic trials in farming communities, formation of Agricultural Innovation Platforms and the inclusion of both private and public sector players in demonstrating and educating farmers on CASI practices

The implementation occurred in 6 communities from two different agroecologies in 4 districts (in Angonia, Manica, Sussundenga, and Gorongosa). In 2010, SIMLESA started with a small group of villages, establishing demonstrations plots and permanent trials with 36 farmers in 6 communities. From 2014, the involvement of AIPs, the numbers of farmers reached increased to 38,170. Then in collaboration with private sector agribusinesses, the number of farmers reached went up to 191,757 in 2016. Over time these were scaled to more than 100 communities in nine districts covering an area of 1,651,000 hectares.

Community based demonstrations, farmer to farmer and farmer to extension engagement. The project assembled teams of agricultural and social scientists such as agronomists, breeders, economists and sociologists to conduct multi-seasonal long term trials, placement of demonstration plots within farming communities (not just at experimental sites), field days and exchange visits, radio and TV programs and an SMS service. The nucleus of these efforts was a group of 36 farmers in 6 communities of 4 districts in two different agroecologies, where on-farm and on-station trials and demonstrations on CASI were established. Over time, these were transferred and replicated in other districts.

Starting 2014, SIMLESA introduced the concept of the Agricultural Innovation Platforms (AIPs) which was sustained over the following four years. The basic approach was to create multi-stakeholder groups along the knowledge, service and commodity nodes of the value chain to facilitate and sustain the creation of shared value and mutual benefits.

The AIPs are formed by farmer associations, research, NGOs, extension services, input providers, traders, and local authorities, academic and financial institutions. SIMLESA and partners shared knowledge, experiences and disseminated CASI technologies and more farmers were reached. The outreach strategies were multi-pronged: on-farm demonstrations, field days, exchange visits, mass media (TV, Radio and SMS), and print media (leaflets, poster, flyers), physical meetings and training sessions.

The result was that CASI practices were expanded from 6 communities in 4 districts to more than 100 communities in 9 districts. Results showed by 2016 a significant increase in the number of farmers adopting CASI technologies and practices and it was estimated that 38,170 farmers had tried CASI practices.

Public and private partnership to support scaling . In continuing efforts to scale out CASI and to reach more farmers, in 2016, a Competitive Grant Scheme (CGS) was launched to provide seed funds to community and private organizations selected on a highly competitive basis. Three partner organizations, namely Instituto Superior Politécnico de Manica (ISPM), Manica Farmer's Union (UCAMA) and Agriculture and Market Development (AGRIMERC) were included in the initiative. These CGS partners were committed to reach at least 50,000 households with new legume and maize SI technologies and practices (see box below).

Outcomes of the Competitive Grant Schemes (CGS) and the engagement of private and community organizations

- At least 12 additional AIPs and farmer organizations brokers engaged and the trained on technical, socio-economic and holistic benefits of the CASI options adapted under SIMLESA.
- Managed to educate 50,000 households on the use of conservation agriculture and improved inputs to promote increase of maize and legume productivity in Tete, Manica and Sofala provinces.
- 70 agro-dealers were trained in input and output market and trading.
- 150 Village Based Agents (VBA) trained and subsequent trainings conducted among 15,000 farmers within target sites.
- About 350 partner staff engaged, supporting and sustaining the process to integrate portfolios of the CASI packages and practices, and information sets with their existing scaling programs.
- 300 MT of certified seed produced and sold through agro-dealers and/or VBA networks.
- 1,000 MT of produce sold through agro-dealers and VBA networks.

	AGRIMERC	UCAMA	ISPM
Target sites	Sussundenga, Gondola, Macate, Vanduzi, Gorongosa, Tsangano and Angónia	Macate, Vanduzi and Nhanmatanda	Sussundenga, Manica Angónia, Gorongosa, Macate, vanduzi, Barue, Buzi, Gondola
Dissemination strategies	Use of VBAs, lead farmers, agro-dealers	Training of lead farmers and associations	ITC: sms program, radio program, videos; VBAs
Target	50,000 FARMERS	50,000 FARMERS	50,000 FARMERS
Results achieved	68,907 FARMERS REACHED	63,850 FARMERS REACHED	59,000 FARMERS REACHED

Opportunities for policy action

Promoting public-private funding to scale new technologies and farmer education

Invest in the establishment and maintenance of large networks of community based demonstration plots and farms

The process used by SIMLESA was built around adaptive research conducted at experimental stations but replicated in local communities. By involving more agricultural value chain partners in demonstrations SIMLESA was able to promote CASI further faster and harness buy-in. The rapid reach within the communities described was enabled by funding and expanding the demonstrations and involving more partners in the agricultural value chain. This illustrates the opportunity to integrate similar processes in Mozambique's development agenda and organize public and private funds to support large scale and long term demonstrations.

Initiate funds and seed capital to catalyze private investments in scaling sustainable agricultural intensification

The synergies created in the CGS-enabled partnerships with ISPM, IIAM, AGRIMERC and UCAMA, show opportunity for establishment of similar models in other locations. The CGS approach can be adopted by government for strengthening the scaling out of CASI in the country. It is important to establish public private partnerships and AIPs throughout all farming regions of the country. The approach used by CGS organizations allowed greater access to information, technical assistance and production of inputs by farmers through the involvement of different actors, including agro-dealers. In the SIMLESA project, this approach enabled the project partners to reach more than 190,000 farmers.

Why Act Now?

There is a considerable evidence base for CASI in terms of economic, social and environmental benefits. However, this evidence base needs to be beefed up, regularly updated and then communicated to farmers. If the momentum created by SIMLESA is not utilized, this evidence base will remain limited to project districts. With time this evidence may also become outdated if no follow up investments in research and scaling are made. It will also be difficult to scale the practices if persistent demonstrations are not made in many communities across different agro-ecologies.

Without these and similar actions, there will be missed opportunities to reduce production costs, increase productivity, reduce soil degradation and contribute to sustainable intensification. The current state of Mozambique's agriculture and the present challenges means that any action however modest, needs to be taken now and sustained for the long run.

References and sources

1. Dias, Domingos J.B., Eduardo P. Mulima, Maria da Luz Q. Cadeado, Custodio J.F. Jorge and Jose D. dos Santos Chiocho, (2019). Enhancing Resilience and Sustainability on African Farms: Key Findings and Recommendations for Mozambique. SIMLESA Project Country Synthesis Report. CIMMYT/IIAM. El Batan/Maputo.

Please also visit us at:

www.simlesa.cimmyt.org for more publications and data on Mozambique and other SIMLESA program countries

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