

# Research and knowledge management systems for sustainable intensification

Conservation Agriculture-Based Sustainable Intensification (CASI):  
Towards Agricultural Resilience and Sustainability in Africa

REGIONAL  
POLICY BRIEFING



## What is the role of research and knowledge management systems in promoting sustainable agricultural intensification?

Sustainable agricultural intensification will contribute towards the SDGs (such as SDG1, 2, 3, 12, 13, and 15). The path from better farming systems to the SDGs, however, will involve the interplay of many important and complex social, economic and environmental factors. Some of the factors will require fundamental changes in how farmers, their communities and entire societies function. Research institutions of all kinds have a pivotal role to play in making available the knowledge and solutions for connecting sustainable agricultural intensification to these grand challenges.

## But what are the gaps in research and knowledge management systems for sustainable agricultural intensification?

Although there is strong evidence base on potential multi-criteria benefits (economic, social and environmental) from conservation agriculture-based sustainable intensification (CASI) – there is still need to nurture the system transformations needed for CASI to take root are still lacking. To achieve the necessary system changes, this evidence base needs to be regularly updated and communicated to farmers and all stakeholders. Yet, there is a general lack of mechanisms to facilitate access to data, findings and publications to a wider audience. The wider availability of up to

date information is important for CASI institutionalisation.

With time, even the existing evidence may become outdated if consistent investments in research are not made. It will also be difficult to scale the practices, if persistent scaling efforts are not made in many communities across different agro-ecologies. Knowledge management systems are needed to gather, curate, analyze, synthesize, update and communicate scientific findings from continuous research.

## What can be done to close these gaps, and what have we learnt from SIMLESA work?

Building on existing programs and networks to create multi-stakeholder coalitions (involving international and national researchers, extension departments, farmer groups and seed

companies) can have significant results and hasten the movement of CASI innovations through the research and development pipeline.

Regarding data sharing and dissemination, large amounts of socio-economic datasets are now freely and publicly available on an open access basis through the SIMLESA website, (<https://simlesa.cimmyt.org/>). Through the website a wide variety of scientific publications, farmer and extension manuals, policy briefs, and project reports and media articles are accessible to a global audience. For example, a multi-panel socio-economic data from 2010/11, 2013 and 2015/16 cropping seasons from more than 5000

households in 500 villages located across eastern and southern Africa can be freely accessed by any interested researcher or analyst. Also freely available are agronomic farm trials data from 40 sites covering seven seasons across the 10 agro-ecologies in the five project countries in eastern and southern Africa. The data cover 150 trials from on-farm experimentation over the last seven to eight years across the SIMLESA countries.

## How can the lessons be translated into action?



### Establish regional networks of research and knowledge systems on conservation agriculture and sustainable intensification

A major way to institutionalize CASI in the region's agricultural research and development agendas would be the establishment of national and regional databases as well as publication and information repositories. There will be need to coordinate these knowledge management systems. Such systems will help in the standardization of messages for farmers, dissemination of most up-to-date findings to the larger community and faster validation

of research results. Without these and similar actions, there will be missed opportunities to benefit from the free flow of new ideas and research and create the much needed spillovers across institutions and countries. Establishing a regional network of research and knowledge management, hosted by a regional institution, and funded by the member countries can help make CASI the new normal in Africa's farming systems.

### About SIMLESA

Since 2010, the Sustainable Intensification of Maize-Legume Cropping Systems for Food Security in Eastern and Southern Africa (SIMLESA) has been implemented in Ethiopia, Kenya, Malawi, Mozambique, Rwanda, Tanzania and Uganda. The project seeks to increase food security, productivity, income levels and resilience to climate change while simultaneously protecting the natural resource base through integrating sustainable intensification technologies and practices in African smallholder farming systems.

SIMLESA is financed by the Australian Centre for International Agricultural Research (ACIAR) and led by CIMMYT in collaboration with numerous partners, including the national agricultural research institutes of participating countries, the International Center for Tropical Agriculture (CIAT), the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), the International Livestock Research Institute (ILRI); the Queensland Alliance for Agriculture and Food Innovation (QAAFI) of the University of Queensland, Australia, the Agricultural Research Corporation, South Africa, the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) in addition to various national level actors.

### Further readings

For further information on which this brief is based, please visit <https://simlesa.cimmyt.org/resources/> to access policy briefs, synthesis reports, journal articles, datasets and other information.

