

CONSERVATION AGRICULTURE

The economy of Zimbabwe – a country once considered the breadbasket of southern Africa – is beginning to turn around after a decade-long recession that saw sharp drops in agricultural production, reduced incomes and food shortages. Roughly 70 percent of the country makes a living from agriculture, so a strong agriculture sector is key to Zimbabwe's economic recovery. Adopting more environmentally-friendly and sustainable cropping practices, such as conservation agriculture, could help boost farm productivity and profitability – and reduce the country's dependence on external aid.

What FAO Zimbabwe is doing

The Food and Agriculture Organization of the United Nations (FAO) in Zimbabwe is promoting conservation agriculture because it has good potential to increase agricultural production and productivity, especially among the country's roughly 1.5 million smallholder farmers. Conservation agriculture follows three main principles: minimum mechanical soil disturbance (little or no tillage); permanent organic soil cover; and diversified crop rotation. The correct application of all three principles helps keep soils fertile and healthy for good crop growth.

FAO had initially introduced conservation agriculture techniques while providing farmers with free seeds and fertilizers – inputs that had become scarce and costly. Once input support was withdrawn, however, farmers generally stopped practicing conservation agriculture. FAO is now using farmer field schools and lead farmers throughout the country to ensure that farmers adopt correct techniques. FAO has set up demonstration plots where farmers can receive training and keep abreast of new developments, like mechanization for conservation agriculture.

Impact on farmers' lives

Conservation agriculture techniques can cut down on total variable costs per hectare over the years as farmers are encouraged to apply microdoses of fertilizers, and tilling costs are low. The use of planting basins, made with hand hoes, means that even those with limited access to animal draught power are able to prepare and plant their fields in time for the rains. To make planting basins, farmers work in groups, which spreads the workload and reduces drudgery as jobs are assigned based on ability, age and gender. Women, who make up about 60 percent of the farmers attending trainings, are generally



responsible, along with children, for weeding plots – a labour-intensive task; however, mulching has reduced the amount of weeding needed. The training timetables are agreed on by everyone in the group so as not to conflict with other household chores and activities.

Farmers practicing conservation agriculture in the communal areas have been able to get more from their small plots of land — averaging around 2 tonnes/hectare for maize, nearly triple what they had produced before, and more than twice as many legumes. Farmers are harvesting enough to carry them through to the next season, and some are even selling surplus produce like sorghum, groundnuts and beans. More farmers, seeing the positive results, are being motivated to adopt conservation agriculture techniques.

Challenges

Conservation agriculture is most effective if all three principles are adopted; it is the interaction of the three that produces results. In the early stages, labour needs for land preparation, basin digging and weeding are high, but this can be addressed by introducing and adopting mechanized systems. There is a need to improve the design of conservation agriculture machinery as it can be unwieldy to use, especially for women. The machinery is not always readily available or affordable. Finally, there are some negative perceptions about conservation agriculture among stakeholders who feel that it is too labour intensive, is only relevant for poorer farmers and runs counter to development technology.

Lessons

Conservation agriculture applies to all farmers regardless of their socio-economic status. If conservation agriculture is adopted appropriately, then soil fertility will improve and yields will increase in the medium to long term. Awareness workshops and ongoing extension support can help ensure adoption of conservation agriculture techniques even when external support is withdrawn. Research and development and increased investment in conservation agriculture mechanization can help reduce labour and improve technology adoption.

Partnerships / stakeholders

European Union

Farmers' unions and farmers

Implementing partners (Non-governmental Organizations, research institutions, Consultative Group on International Agricultural Research [CGIAR] centres, training institutions)

What next?

FAO is spearheading the promotion of conservation agriculture through training, extension and capacity building. It co-chairs the conservation agriculture taskforce with Zimbabwe's Ministry of Agriculture, Mechanization and Irrigation Development, meeting regularly with all stakeholders to discuss, refine and advance research on conservation agriculture. Promoting the country's recently launched conservation agriculture strategy, incorporating resource mobilization, implementation, monitoring and evaluation, can help consolidate the work of the task force, and lead the country's scaling up efforts.

According to Government statistics, about 300 000 communal farmers in Zimbabwe are practicing conservation agriculture and about 5 percent of the maize-growing area is under conservation agriculture. By intensifying training and outreach activities, including setting up farm demonstration sites, more farmers throughout the country can learn correct conservation agriculture techniques.

Creating an enabling environment that fosters links between public and private partners for extension, training and research is important, as is supporting input and output marketing approaches, including bank loans, microfinancing and contract farming arrangements. Conservation agriculture mechanization is still in its infancy. The domestic manufacturing of machinery, equipment and implements needs to be improved to meet farmers' demands. FAO has been supporting local industry to produce conservation agriculture equipment.

Efforts should also focus on mainstreaming conservation agriculture in Government policies and programmes and positioning it within current donor funding frameworks and thematic issues like food security, climate change, sustainable rural livelihoods and aid effectiveness.

Achievements to date:

- Conservation agriculture taskforce co-chaired by FAO and Zimbabwe's Ministry of Agriculture, Mechanization and Irrigation Development
- National conservation agriculture manual developed
- Informational posters, video and pamphlet distributed
- Conservation agriculture curriculum developed and in use in all agricultural colleges in Zimbabwe

Ministry of Agriculture, Mechanization and Irrigation Development

Private sector companies'

Spanish Agency for International Development Cooperation (AECID)

Swedish International Development Cooperation (Sida)