

CONSERVATION AGRICULTURE CONTRIBUTES TO ZIMBABWE ECONOMIC RECOVERY



WORKING FOR smallholder farmers in Zimbabwe

WORKING TO promote conservation agriculture techniques, including mechanization

WORKING WITH Zimbabwe Ministry of Agriculture, Mechanization and Irrigation Development

WORKING THANKS TO EU



When conservation agriculture was introduced to Zimbabwe, rural areas became dotted with what observers called “NGO plots” – parcels of land where farmers practised the approach. However, these small plots were surrounded by other fields where farmers continued their conventional methods. Initially, FAO and other development groups supplied farmers with enough seed and fertilizer to plant half a hectare under conservation agriculture – enough to get them started. However, the fact that they did not expand these plots made it obvious that, while farmers welcomed the inputs, they were not convinced enough to convert all of their land.

There were reasons for their initial scepticism. Conservation agriculture is built on three principles – minimum soil disturbance, permanent soil cover and crop rotation – that are known to reduce erosion, improve soil quality, conserve water, reduce fuel costs and, above all, improve yields. However, from the smallholder’s point of view, each principle had its own problems.

The economy of Zimbabwe – once considered the breadbasket of southern Africa – has begun to turn around after a decade-long recession that saw a sharp drop in agricultural production, falling incomes and increasing food shortages. With some 70 percent of people relying on agriculture for their livelihoods, the strength of this sector is key to economic recovery. FAO has worked with the government to increase farmers’ uptake of conservation agriculture – a no-till system that increases yields while protecting fields from erosion, improving soil quality and mitigating the effects of drought. In its initial stages, conservation agriculture is more labour-intensive than conventional methods, so FAO has initiated a programme of training and demonstrations, and introduced labour-saving mechanical planters to win over farmers. As a result, Zimbabwe has seen “spontaneous adoption”, meaning farmers see gains on their neighbours’ farms and make the decision to adopt conservation agriculture. Today more than 300 000 Zimbabwean farmers are practising this method and have nearly tripled their production.

An estimated 300 000 Zimbabwe farmers have adopted conservation agriculture.



Some farmers who have adopted conservation agriculture have tripled their maize yields.

OVERCOMING SCEPTICISM WITH EVIDENCE OF SUCCESS AND USE OF MECHANIZATION

Minimum soil disturbance means farmers do not plough but, instead, hand dig individual holes – 15x15x15 cm basins – to plant their thousands of seeds. This, of course, is more labour intensive than planting in ploughed furrows. Moreover, weeds grow faster in the undisturbed soil, requiring more effort to keep the fields clean. Maintaining a permanent soil cover also requires more labour. Farmers must gather the stalks and leaves left in the field after harvest to use as mulch, which protects the soil from erosion and holds in moisture. Crop rotation calls for farmers to alternate legumes with their maize crops in order to improve soil fertility, but they are often averse to giving up field space where they normally grow their major crops.

In reality, these issues are only problematic in the first season or two. By the second or third season, farmers can re-use the seed basins they have already dug and, as the mulch cover becomes more embedded, it helps control weeds. Yet, in spite of this, Zimbabwe's farmers were slow to adopt conservation agriculture and, when free inputs stopped, some farmers dropped out entirely.

As this happened, FAO changed its strategy, narrowing its focus to the small core group of farmers who were seriously convinced of the benefits. It also established demonstration fields where farmers could observe the increased yields of conservation agriculture compared with other farming techniques.

FAO also identified, tested and introduced new mechanized technologies that reduce the amount of labour involved in conservation agriculture without compromising its principles. It provided extensionists, agriculture colleges and NGO groups with sample devices so they could demonstrate them to the farmers and students. With these machines, farmers no longer need to hand-dig planting basins. They can plant up to two hectares a day from a standing position, using levers to release the seed and simultaneously measure microdoses of fertilizer.

FARMERS CUT COSTS, INCREASE YIELDS, MITIGATE CLIMATE CHANGE

The Government of Zimbabwe supports conservation agriculture because of its success in mitigating the adverse effects of climate change and in conserving soil and water resources. The Ministry of Agriculture, Mechanization and

Irrigation Development co-chairs the National Conservation Agriculture Task Force with FAO, and meets regularly with farmers, extensionists, researchers and the private sector to discuss, refine and advance research on conservation agriculture. An estimated 300 000 Zimbabwe farmers have now adopted conservation agriculture.

Once farmers pass the initial labour-intensive, start-up seasons, their conservation agriculture techniques cut down on waste of inputs and thus reduce their costs.

While only five percent of Zimbabwe's maize-growing area is currently under conservation agriculture, those farmers who have adopted it have been able to harvest more from their small plots, averaging around two tonnes per hectare for maize, which is nearly triple what they produced under conventional agriculture. Meanwhile legume production has doubled. The farmers are not only harvesting enough maize and legumes to feed their families – the increased yields actually provide a surplus they can sell, thereby improving their livelihoods while contributing to the national food basket.