



## Updates & News Alert

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A two-wheel tractor fitted with an Australian-designed conservation agriculture planter. Photo credit CIMMYT

## Editor's view

The prolonged droughts in eastern and southern Africa and climate change challenges on the rest of the continent have resulted in "islands of hope" for farmers practising Conservation Agriculture, providing proof of the concept and the justification to scale-up CA to millions of adopters. The resilience and successful transformation of these farmers and the restoration of degraded landscapes inspire our work. Besides, these positive changes, form the basis for our advocacy on the need for imperative transformation of Africa's agriculture to more sustainable

and climate resilient farming systems that ensure adequate and profitable production of food and fibre to meet demand from Africa's rapidly growing population.

Adopting CA practices has proved a viable means for sustaining agriculture and improving air, water and soil quality. In their varied forms, CA systems aim at reducing tillage operations such as ploughing and disking, and instead emphasize direct planting. As a result, soil disturbance is minimized and tractor operations are reduced. Consequently, fuel use, nitrogen oxides (NOx),

particulate matter and CO<sub>2</sub> emissions as well as surface water runoff are reduced, soil carbon sequestration is increased, and overall farm profitability is improved, among other benefits at field (plot), farm and community (regional) levels.

There is sufficient evidence that CA offers benefits that over time increase the productivity of smallholder production systems sustainably, as well as their profitability and resilience without compromising the environment. To achieve impact CA must be tailored to the agro-ecological and socio-economic contexts of smallholder farmers. Documented impact and feedback from practising CA farmers in Africa have shown that CA significantly increases yields and agricultural productivity in a sustainable manner even for poorly resourced farmers, improving their food security and often enabling them to sell surplus.

ACT acknowledges the various sources, authors, reporters, organizations and practitioners whose articles appear in this issue. It is testimony of the enthusiasm and interest from various organizations, countries, researchers and scientists in Africa's development.

A notable upcoming event is the 7th World Congress on Conservation Agriculture (7WCCA) being organized by CAAPAS and AAPRESID and planned to take place in 31 July–2 August 2017 at Rosario, Argentina.

To showcase CA activities in various African countries, ACT features country-focused articles in its monthly News Alerts. These articles capture and discuss the status and extent of adaptation and adoption of CA in a particular country. We encourage you to share your CA views and articles in time for the planned CA news alerts in those countries. We also encourage bookings for proposed focus country articles for 2017. Please submit articles, links or views to: [kim@act-africa.org](mailto:kim@act-africa.org)

We apologize for any cross-posting of some articles.



## How to read a soil test report

Ward Laboratories President Ray Ward offers a step-by-step explanation on interpreting soil test reports to aid no-till management decisions. Most no-tillers understand the importance of soil testing, as they typically serve as the baseline for fertilizer and lime purchases and application.

Thanks to variable-rate technology, growers can even use soil test reports to draw up exactly where they're going to apply a certain rate of fertilizer or lime. But if someone were to hand you a soil test report, would you be able to read the information and understand what it means? Most growers would probably say no. Given that fertilizer was the biggest expense for no-tillers in 2015 — more than \$75,000 on average per farm, according to this year's No-Till Operational Benchmark Study — no-tillers may want to consider learning how to read and interpret this data that can tell them what's already in their soils. This may become especially important because of growing concerns about nutrient runoff in local waterways. It also allows no-tillers to check for any discrepancies in their results and ensure the fertilizer recommendations their agronomist or consultant is suggesting matches what each field needs.

No-Till Farmer reached out to Ray Ward, founder and president of Ward Laboratories in Kearney, Neb., who shared a recent soil test report from one of his farms and took us step-by-step through the report and interpreted it for us.

For more information: <https://www.no-tillfarmer.com/articles/6147-dnt#sthash.pBlbtjil.dpuf>

## Kariba REDD+ project support conservation farming



MASHONALAND WEST, Zimbabwe — A narrow, bumpy and dirty road snakes through maize and tobacco fields in a small village in Zimbabwe's Mashonaland West province.

The maize and tobacco crops were healthy as the area received substantial rainfall with the onset of summer late last year. But some fields were strikingly better than others, with more lush green maize crops.

"This farmer is practising conservation farming," said Jeremiah Matiza, manager for Carbon Green Africa in Hurungwe

district. "You can see there is a lot of mulch in the field, what we are encouraging farmers to do". Carbon Green Africa is spearheading the conservation farming project under a project named Kariba REDD+, which is running in four districts in Mashonaland West province: Binga, Nyaminyami, Hurungwe and Mberemba. According to the Food and Agriculture Organization of the United Nations (FAO) an estimated 300,000 farmers in Zimbabwe have now adopted conservation agriculture.

While only five percent of Zimbabwe's maize-growing area is currently under conservation agriculture, farmers who have adopted CA harvested more from their small plots, averaging around 2 tonnes per hectare for maize, which is nearly triple what they produced under conventional agriculture, FAO noted.

For more information: <http://thezimabwean.co/2017/01/kariba-redd-project-support-conservation-farming/>

## Kenyan scientists urge farmers to reclaim soil fertility

Nearly 45 percent of Kenya's revenue is drawn from the agriculture sector — which also provides more than 75 percent of industrial raw materials — but declining soil fertility is undermining crop yields. A recent report by the ministry of agriculture on the suitability of soil for maize production, the main staple food in the East African nation, shows most high-potential areas suffer soil infertility due to continuous use of acidic fertilizers, inverting the pH levels. This, the report indicates, was threatening the country's state of food security. The report recommended use of alkaline fertilizers to neutralize the acidity and regain fertility of the soils.

Farmers should also use available crop residue such as wheat, rice and maize stalks to boost soil fertility, said Julius Khaemba, a soil scientist and lecturer at Egerton University, famous for training specialists aligned to the agricultural sector. "It is common practice for farmers to destroy crop waste in the field by burning it but there is a danger to this practice," Khaemba told Xinhua in an interview "First, they are destroying the organic matter that boosts the fertility of the soil. Second, crop waste holds nutrients needed for growth of crops. When

you maintain the waste in the field or plough it into the soil, you are retaining the fertility of the soil," he explained.

Khaemba said maintaining crop residue in the field is an appropriate conservation agriculture practice that should be adopted by both small and large-scale farmers. "Conservation agriculture involves covering of the soil as well as minimal disturbance to the soil such that nutrients are not lost and high moisture content is maintained within the soil," he said.

Khaemba said the tendency of burning waste should be vehemently discouraged among farmers since the activity further contributes to global warming causing the problematic climatic changes. "Burning the waste is releasing gases into the atmosphere, which are causing trouble with climate change and essentially affect farmers. Farmers need to stop the habit," he said.

For more information: <http://www.coastweek.com/4002-Kenyan-scientists-urge-farmers-to-reclaim-soil-fertility.htm>

# EU's conservation farming project transforms lives of farmers



The European Union-funded Conservation Agriculture Scaling Up (CASU) project is improving lives of smallholder farmers in Nkeyema district of Western Province, with the use of mobile broadband services and integrating information and communication technologies (ICT) in its farmer input voucher management system (FIVMS).

The CASU project, funded at a total cost of €11 million, is being implemented by Zambia's Ministry of Agriculture and the

Food and Agriculture Organization of the United Nations. CASU's FIVMS relies on mobile broadband for transactions; farmers are allowed to receive their inputs as soon as the card is swiped in an agro shop.

One of the main objectives of the project is to train lead farmers in conservation agriculture, and encourage farmers to use the technology to increase yields and household food security. In turn, lead farmers train follower farmers. That

has been happening for over three years now in Nkeyema.

CASU operates in 48 districts in Zambia and supports 21,000 lead farmers and 315,000 follower farmers. The project comes to an end in June 2017, although many farmers strongly feel that it should continue so that many more farmers adopt conservation agriculture.

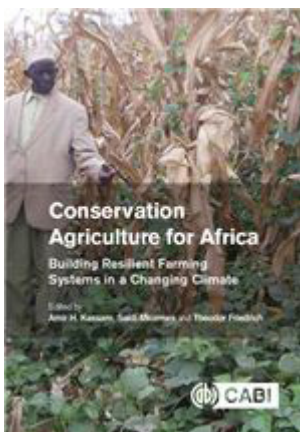
According to the acting senior agricultural officer, Ms. Linda Nkumbula, about 3,360 farmers in eight camps under the CASU project in Nkeyema district.

Integrating ICT in farming has brought value to the agricultural sector as farmers are being served on time without subjecting them to long queues at the bank, meaning CASU farmers have more time to be productive in their fields.

For more information: <https://www.dailynation.news/2017/01/29/eus-conservation-farming-project-transforms-lives-of-farmers/>

## Published

### Conservation Agriculture for Africa: Building resilient farming systems in a changing climate



The book was edited by A Kassam, FAO, Italy and University of Reading, UK; S Mkomwa, African Conservation Tillage Network (ACT), Nairobi; and T Friedrich, FAO Representative in Cuba

In the book, tillage agriculture has led to widespread soil and ecosystem degradation globally. This is especially so in Africa where traditional and modern tillage-based agricultural practices have become unsustainable because natural resources have been severely disturbed and exploited, with negative impacts on the environment and rural livelihoods. In addition, agriculture in Africa today fac-

es major challenges such as increased costs of production and energy, the effects of climate change, and the lack of an effective paradigm for sustainable intensification, especially for small- and medium-size holdings. Africa is facing a serious challenge to food security, and as a continent has not advanced towards eradicating hunger. In addition, the population is growing much faster than in the other continents. This pressure has led to the emergence of no-till conservation agriculture as a serious alternative sustainable agriculture paradigm. In recent years, conservation agriculture techniques and methods have spread to many countries in Africa, as greater development, education and research efforts are directed towards its extension and uptake.

This book is aimed at agricultural researchers and scientists, educationalists, and agricultural service providers, institutional leaders and policy makers working in the fields of sustainable agriculture and international development, and also at agroecologists, conservation scientists, and those working on ecosystem services.

For more information and pricing details: <http://www.cabi.org/bookshop/book/9781780645681>

### Cover Crop Survey, Annual Report, 2015–2016



Insights from 2,020 farmers from across 48 states and the District of Columbia show that acreage under cover crops continued its steady rise, reaching an average of 298 acres per farm in 2015, and projected to grow to a mean of 339 acres in 2016. These figures are more than double the acreage survey participants said they planted in 2011.

After cover crops, corn yields rose an average 3.4 bushels per acre, or 1.9 percent, and soybean yields increased 1.5 bushels per acre, or 2.8 percent. Analysis of the survey data revealed that yield increases rose to 8.3 bushels per acre of corn after planting cover crops for more than four years on a field. In soybeans, the average yield gain increased from 0.1 bushels per acre, after a single year under cover crops, to 2.4 bushels after four years of cover crops.

Learn more in the full report at: [http://www.ctic.org/media/CoverCrops/2016CoverCropSurvey\\_Final.pdf](http://www.ctic.org/media/CoverCrops/2016CoverCropSurvey_Final.pdf)

## Upcoming Events

### 2nd Agriculture and Climate Change Conference: Climate ready resource use-efficient crops to sustain food and nutritional security

Date: 26–28 March 2017

Venue: Meliá Sitges, Sitges (near Barcelona), Spain

Maintaining crop production to feed the growing population during a period of climate change is the greatest challenge humanity is facing. Increased crop yields during the last century, and especially during the Green Revolution, were brought about by breeding for increased harvests and disease resistance, as well as us-

ing more irrigation water and agrochemicals. Improved cultivars were adopted readily during this period of relative climate stability. While genetic gains continue, albeit at reduced rates, productivity is declining in many regions. Given the multiple challenges of climate change in many regions such as reduced water supply and declining soil fertility, new approaches to produce climate-resilient crops are desperately needed. The 2nd Agriculture and Climate Change

Conference: Climate ready resource use-efficient crops to sustain food and nutritional security, will focus on the likely impacts of climate change on crop production and explore approaches to maintain and increase crop productivity into the future.

For more information and important dates, follow this link: <https://www.elsevier.com/events/conferences/agriculture-and-climate-change-conference>

### 7th World Congress on Conservation Agriculture



Date: 1–4 August 2017

Venue: Rosario, Argentina

The 7th WCCA provides the opportunity to learn from No-till farmers associations and to network with an international gathering of agricultural experts. Argentina, Brazil, Paraguay and Uruguay want to show the modern agricultural, based on the principles of Conservation Agriculture (CA), our known No-Till System, and with FARMERS, the crucial actors of this revolution. Agricultural production systems are not sustainable unless they are profitable, and CA holds the key to

building and maintaining healthy soils and profitable farming systems. Food security, climate change, smallholder and family agriculture, gender equality, biotechnology, machinery innovations, bioenergy, water, soils, crops, agribusiness, legislation and more are going to be part of the 7WCCA proposal.

For more details: <http://congresoaaapresid.org.ar/>

### Second Africa Congress on Conservation Agriculture (IIACCA)

Date: March 2018

Venue: To Be Confirmed

To be posted on ACT's website event section: <http://act-africa.org/events.php?com=68&com2=67&com3=>

## Conservation Agriculture-related resource links

- Conservation Agriculture Research Updates: <http://www.scoop.it/t/conservation-agriculture-by-conservation-ag>
- University of California, Division of Agriculture and Natural Resources, Conservation Agriculture Systems Innovation: [http://casi.ucanr.edu/About\\_CT\\_in\\_CA/](http://casi.ucanr.edu/About_CT_in_CA/)
- FAO's Agriculture and Consumer Protection Department: <http://www.fao.org/ag/ca/>
- Conservation Farming Unit (Zambia): <http://conservationagriculture.org/CFU/index.html>
- Conservation Technology Information Center: <http://www.conservationinformation.org/>
- No- Tillage, Sustainable Agriculture in the New Millennium: <http://www.rolf-derpsch.com/en/>

For more information, please contact: [Executive Secretary](#) | [African Conservation Tillage Network](#)

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**Norad**

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