



Updates & News Alert

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Editor's view: Introducing the September 2019 CA Alert

Smallholder agriculture is the mainstay of food production in the world's developing countries and is key in ensuring long-term global food security. With the global population on course to exceed 9 billion by 2050, with Africa contributing above one billion, the need to meet the growing demand for more food is immediate and pressing. Agricultural production and access to food in a sustainable environment will represent one of the major challenges. The world's 500 million smallholder farms currently produce around 80 percent of our food and it is them who will have to bear the brunt of the need to increase food production by over 60 percent compared to 2007 levels. The current dominant agricultural practices and poor mechanization, have stagnated cereal yields at 1 tonne per hectare over the 40 years, and cannot meet this forthcoming challenges. Therefore, new set of technological options and appropriate mechanization are needed to ensure appropriate management of the interfaces agriculture/forestry, agriculture/climate and agriculture/human activities as well as provision of enough food to feed Africa.

Thus, the need for agricultural transformation is imperative. Agriculture in African countries needs to be fundamentally transformed and appropriately mechanized in order to achieve sustainable production intensification for community-based rural development. The time has come, the decision has been made by Africans, Africa Must Mechanize, but differently this time. The new Mechanization drive must follow some core principles. It must be built along the entire agricultural



value chain. Must be private-sector driven, environmentally compatible and climate smart, and must also be economically viable and affordable, especially for small-scale farmers who constitute the bulk of African farmers. It is vital that it targets women, who bear the brunt of African agriculture. Finally, mechanization must target youth, specifically to make agriculture more attractive and a choice for employment and entrepreneurship".

ACT has prioritised agricultural mechanisation in its strategy for promoting conservation agriculture in Africa since it plays an important role in the food value chain development. The Conservation Agriculture (CA) stakeholders who attended the Second Africa Congress on Conservation Agriculture (2ACCA), which met in Johannesburg, South Africa from 9th to 12th October 2018 highlighted and recognised that Sustainable Agricultural Mechanization (SAM) is an important enabler in accelerating widespread adoption of CA and attainment of the Malabo Declarations' Vision 25 x 25 and the Agenda 2063*. It urged ACT to advance appropriate African focused

mechanisms and thrives that will largely deliver suitable SAM and support the propagation of self-sustaining development of the agricultural mechanization in Africa. Agricultural mechanisation is also considered a catalyst for rural development as it is an essential agricultural input with the potential to transform rural families' livelihoods by facilitating increased output of higher value products while eliminating the drudgery associated with human muscle-powered agricultural production. Moreover, agricultural mechanization in its broadest sense can contribute significantly to the development of food systems, as it has the potential to render post-harvest, processing and marketing activities and functions more efficient, effective and environmentally friendly.

In order to facilitate effective promotion of the sustainably mechanized Conservation Agriculture technologies and practices in Africa and beyond, appropriate and affordable the agro-ecological and socio-economic based technologies and innovations anchored on the fundamental CA and SAM concepts and applications needs to

*Action Statement from Stakeholders of the Second Africa Congress on CA

be emphasized and developed. Within the context of strengthening and increasing accessibility to SAM and CA related knowledge and information, the 2ACCA urged ACT to even further catalyse expansion and widespread functioning of CA Community of Practice and regional and national level CA forums with intense vertical and horizontal, within and across sectors, communities and nations networking, sharing of experiences and co-creation of knowledge and building knowledge-based social capital. The recent Consultative Meeting on SAM which provided a platform to discuss SAM in general, SAM strategies and implementation options, came out with

a list of concrete actions to enable SAM systems to function correctly. The actions included Development of the social sector (food security, improved nutrition, and assured livelihoods); Conservation of natural resources and the environment; Identification, delivery and application of new models for public-private and private-private partnerships at regional and global levels; Establishment of a SAM network with centres of excellence for Africa; Establishment of a knowledge platform for technology exchange at a pan-African level; Production of a concise SAM advocacy brief targeted at policy makers and donors. ACT is keen to realization of these actions.

Nonetheless, ACT acknowledges the various sources, authors, reporters, organizations and practitioners whose articles appear in this September 2019 issue.

We encourage you to share your SAM and CA views and articles capturing the status and extent of adaptation, adoption and applicability of these technologies in any Country in Africa or beyond for sharing with others. Please submit articles, links or views to kim@act-africa.org. Use the [#conservationagriculture](#), [#africamechanize](#) to share links on articles, journals, news on CA and tag us on twitter [@ACTillage](#).

Regional Conservation Agriculture Dialogue: Efforts to upscale the uptake of conservation agriculture underway



Regional Conservation Agriculture dialogue meeting participants, Lusaka, Zambia

While an estimated 70% of the population of Southern Africa relies on agriculture for livelihoods as well as food and nutrition security, there are growing challenges, resulting from climate change and variability, which affect production. The situation is further worsened by the ill adapted production practices which cannot cushion farmers from the blow of the effects of climate change and variability, especially recurrent droughts.

The increasing impact of climate change and variability, particularly droughts and other production stressors, on agriculture has seen an estimated 41 million people facing various levels of food and nutrition insecurity and loss of livelihoods in Southern Africa. In order to address this, regional institutions are doubling up efforts get more farmers to adopt climate smart / Conservation Agriculture (CA).

In Zambia, FAO, the African Conservation Tillage Network (ACT) and the Ministry of

Agriculture in the country, in collaboration with the Conservation Agriculture Regional Working Group (CARWG), working under the theme, "CA Now" held a Regional Conservation Agriculture Dialogue meeting. The three-day meeting took place between 25th -27th September, 2019 at Neelkanth Sarovar Premiere Hotel, Lusaka, Zambia.

The Purpose of the meeting was to strengthen CA partnerships and develop a roadmap that will result in increased CA traction through alignment to Regional and National development frameworks. In his speech, the guest speaker, Hon. Michael Z. J. Katambo, MP, Minister for Agriculture acknowledged that CA is a climate smart approach that offers a variety of resilient building benefits to farmers especially smallholder farmers. He further reiterated that through the 2014 Malabo Declaration, CA received political will and direction. This provided

opportunities for huge investment to bring the desired transformation. However, we are not yet there, and that is why this meeting is critical to chat a way forward on how to have massive adoption of these technologies.

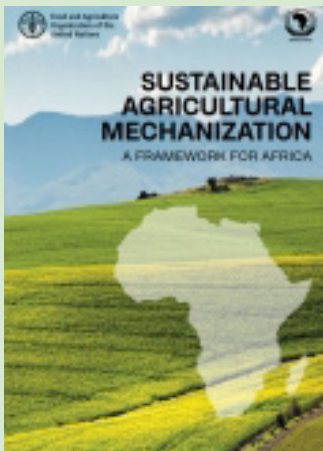
In a speech read on his behalf, the FAO Sub Regional Coordinator for Southern Africa (a.i), Alain Onibon, said it was clear that current productivity and production levels by smallholder farmers cannot be expected to meet food requirements nor can they make serious contribution to support the growth of an agro-based industrial sector in the Southern Africa.

"According to the Southern African Development Community (SADC), of the last four seasons - except for the 2016/17 season, the production of cereal staples in the region has been on the decline. The number of food and nutrition insecure people oscillated between 26 million and 41.2 million from 2015 to 2019," said Onibon.

The meeting aims to galvanize a multi-stakeholder transformation partnership to accelerate the uptake of tailored CA by smallholder farmers in the region. This is part of the contribution to enhancing the Resilience of Livelihoods and Production Systems to Climate that is espoused by the 2014 African Heads of State Malabo Declaration which targets 25 million farmers on the continent by 2025. [Read More](#)

To access the presentations visit : <https://tinyurl.com/y2w8bmk6>

Sustainable Agricultural Mechanization: A framework for



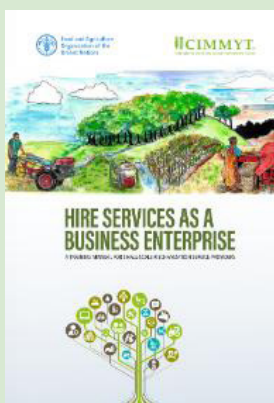
Africa (SAMA)

The African Union and FAO launched and published in 2018, the Sustainable Agricultural Mechanization: a framework for Africa (SAMA) premised on the principle by Dr. Nkosazana Dlamini Zuma, Chairperson, from 2012 to 2017, African Union Commis-

sion that *'the current mechanization wave is to send the hand hoe to the museum and liberate the African farmer from the backbreaking drudgery of tilling the land by hand.'* The framework was developed through a collaboration between the Food and Agriculture Organization of the United Nations (FAO) and the Department of Rural Economy and Agriculture (DREA) of the African Union Commission (AUC). Among other important aspects, the framework strongly promotes a shift from conventional tillage practices to more environmentally adapted practices, such as Conservation Agriculture (CA) and minimum or no-tillage systems. It also emphasizes the need to consider mechanization holistically along the entire agri-food value chain if sector is to be sustainable and to increase the quality and value of the agricultural production, reduce food losses, incorporate food safety aspects and strengthen farmer-market linkages.

This framework presents the priority elements for national strategies for Sustainable Agricultural Mechanization in Africa (SAMA). The analysis presented in Chapters 2 and 3 of the booklet calls for a specific approach, involving learning from other parts of the world where significant transformation of the agricultural mechanization sector has already occurred within a three-to-four-decade time frame, and developing policies and programmes to realize Africa's aspirations of Zero Hunger by 2025. This approach entails the identification and prioritization of relevant and interrelated elements to help countries develop strategies and practical development plans that create synergies in line with their agricultural transformation plans and realize Sustainable Agricultural Mechanization in Africa. Given the unique characteristics of each country and the diverse needs of Africa due to the ecological heterogeneity and the wide range of farm sizes, the framework avoids being prescriptive. Instead, it provides ten interrelated principles/elements to guide agricultural mechanization efforts. [Read More](#)

Hire Services as a Business Enterprise: A Training Manual for Small-Scale Mechanization Service Providers



This manual is specifically designed to help train actual and potential farm mechanization service providers, in or-

der to increase access to sustainable farm power to raise the productivity of smallholder farmers. It focuses on two crucial aspects: the provision of farm mechanization services as a viable business opportunity for entrepreneurs, and the essential criteria of raising productivity in an environmentally sensitive and responsible way i.e. that includes conservation agriculture. Practical guidance on the essential business development and management skills required to successfully run a mechanization service provision business are presented, with a focus on the equipment required to offer

services compatible with conservation agriculture. The manual will be of particular interest to policymakers' intent on achieving sustainable intensification in the agricultural sector. It is also a valuable resource for trainers charged with increasing the supply of well-trained and well-equipped entrepreneurial mechanization service providers through the implementation of training courses tailored to the specific course locations [Read more](#) or download the manual through the link ['download'](#)

Roll out of Sustainable Agricultural Mechanization framework for Africa: ACT-FAO Pilot Programme

It is largely reported in Africa that majority of the smallholder farmers often do not have the necessary capital nor access to long-term credit to invest in farm machinery which helps them increase their land and labour productivity, increase their incomes and improve their livelihoods. Poorly selected or wrongly used machinery can, in addition to increasing utilization cost, damage the soils and actually reduce their potential. Farmers, therefore, need access to mechanization services that can also enhance production in the long-term by conserving/improving the quality of the soils and their water retention capacity. Indeed, African agriculture remains characterized by the dominance of small farms whose income does not allow producers to invest in the acquisition of agricultural equipment. This, unfortunately, results in poor performance of the production system due to low agricultural productivity. Moreover, this problem of accessibility to agricultural equipment also constitutes an obstacle to the adoption of new production techniques which also conserve the environment, such as conservation agriculture, and to the relief of the chores that women undergo particularly in processing operations.

Currently, in sub-Saharan African countries, we come across several forms of service providers covering the entire agri-food value chain, from production to post-harvest. In certain regions and more particularly those practicing cash crops, initiatives in the provision of services, whether in animal traction or in tractorisation for ploughing or processing operations (such as threshing or shelling) are taken. However, these providers are poorly structured and still face a multitude of constraints, including the issue of human resources skills. Such challenges include: how to choose the right equipment, how to make profitable investments, how to manage their businesses, and how to guarantee a quality and sustainable service.? It is for this reason that FAO and ACT advocate for sustainable agricultural mechanization that is in line with sustainable agronomic practices that draw on the enhancement of local ecosystems services. Smallholder farmers are seen as potential entrepreneurs and farming as a business, rather than subsistence farming.

FAO and the African Conservation Tillage Network (ACT) have just recently



SAM Scoping study mission visiting the FAO Rep to Uganda Dr Antonio Querido (left) and ENGSOIL company (Right)

focus is on strengthening the capacity of agricultural mechanization service providers.

signed a Memorandum of Understanding to work together in the implementation of the SAMA Framework, concentrating on Small and Medium Entrepreneur (SME) development with focus on supporting mechanized Conservation Agriculture systems. The arrangement has seen the conceptualization of "Capacity Building of Agricultural Mechanization Service Providers along the Agri-Food Value Chain" project. This joint effort is derived from the recent (2018) publication by the African Union and FAO of the Sustainable Agricultural Mechanization: a framework for Africa (SAMA). In addition, the work leverages on the FAO Training Material called 'Hire Services as a Business Enterprise'. The focal countries are Cote D'Ivoire for Francophone Africa and Uganda and Zambia for Anglophone Africa.

The action is led by FAO and jointly implemented with ACT with an overall objective to improve, in the countries of Sub-Saharan Africa, the accessibility of agricultural equipment for the benefit of producers and especially the poorest through the development of service delivery. Through Element 1 of the framework: "Stimulating agricultural energy through appropriate technologies and innovative business models", the

The project is currently conducting scoping studies in the target countries as the first steps of implementing the action with an objective to assess training needs for mechanization service providers with a view to inform development of a programme responsive to the contextualized needs of the service providers in the country. Two regional workshops have been organized focused on sharing knowledge, experiences and opportunities for investment and partnership on Sustainable Agricultural Mechanization hire services provision practices along the food value chain with an objective to bring together critical stakeholders and actors along agrifood value chain to share knowledge, experiences and opportunities on Sustainable Agricultural Mechanization hire services provision practices along the food value chain. The workshops will also contribute to the development of country roadmaps for Investment Programmes and Partnerships. These workshops are planned to be held in Cote D'Ivoire for Francophone Africa and in Uganda for Anglophone Africa on 9th – 13th December, 2019. This will then be followed by in-country capacity building of the beneficiaries (ToBs) (service providers) early next year for each. For more information contact ACT through info@act-africa.org

Researchers Push for Conservation Agriculture

Tanzania Agricultural Research Institute Uyole Centre (TARI-Uyole) researchers have come up with a strategy to promote conservation agriculture due to climate change and environmental degradation, including shifting cultivation. The technology, which focuses on soil conservation and environmental protection, will help increase agricultural production in drought prone areas and ensure food security in farming communities. Conservation Agriculture should be given priority for improved livelihoods and the conservation of natural resources in Tanzania.

The coordinator of research and innovation at TARI-Uyole, Dr Ndabhemeye Mlengeru, said conservation agriculture was promoted to increase crop production and environmental sustainability. It involves the use of organic soil management practices such as reduced tillage, mulching and leguminous crops. He told the 'Daily News' at the centre on Tuesday that Tanzania had 94 million hectares, out of which 44 million were suitable for agriculture and only 10.1 million hectares (equivalent to 23 per cent of suitable land) was currently cultivated.

According to him, the conservation agriculture technology also reduces production costs and increases farmers' incomes. "TARI-Uyole Centre has planned to promote conservation agriculture in Tanzania. The technology has already been applied in some parts of the country, including Mbeya, Njombe, Songwe, Kilimanjaro and Arusha.

The technology also prevents diseases and pests," Dr Mlengeru said. On the African continent, 65 per cent of farmers use hand tools for agricultural activities, while 25 per cent and 10 per cent uses animal and tractor power respectively.

[Read More](#)

Researchers seek ways to help farmers deal with climate change



Jomo Kenyatta University of Agriculture and Technology is conducting a research that will help farmers in Kiambu and Kajado adapt to changing weather patterns. Emmanuel Ochola, a climate change scientist, said the research will also guide policy making for the provision of water. The project will be concluded in March next year. Ochola said the research relies on historical data which shows that temperatures are continuously increasing and could affect food production.

The research, Ochola said, is prioritizing horticulture and how it will be

affected by climate change in the future. He gave the example of tomatoes that require about 30 degrees Celsius to grow to maturity.

The data shows that from August, only two months have temperatures above 30 degrees yet in 2045, only two months will have temperatures below 30 degrees.

He said many farmers make efforts to deal with drought and lack of water but do not know how to deal with the rising temperatures. "We have noticed there have been changes in temperatures and rainfall, and want to

map out how they will affect farmers," Ochola said.

The information, he said, will guide farmers on the kind of seeds to plant and farming practices to use. He recommended planting of indigenous trees as the cheapest and most effective way of dealing with increasing temperatures. Hasse Goosen, a scientist from Netherlands, on Thursday said the project is a collaboration between his organization Climate Adaptation Services and JKUAT.

[Read More](#)



Farm Africa and climate-smart agriculture

Climate change is turning farmers' lives upside down, but with technical and financial support, they could emerge as climate change heroes. With temperatures rising and young people the world over mobilising, the pressure on decision-makers to take action against climate change has never been higher. Food production's contribution to carbon emissions has been much reported. What's less well recognised is agriculture's role as a carbon sink. Judicious use of appropriate agricultural techniques can trap carbon, increase yields and build farmers' resilience to changing weather patterns.

It's neither fair nor realistic to expect some of the world's poorest people to factor CO₂ emissions into decisions that will determine whether they are able to feed, clothe or educate their loved ones. It's

therefore critical that rural communities are given appropriate support to identify and implement sustainable farming systems that pay out financially and environmentally for farmers.

From cost-saving soil management techniques to growing world-class coffee underneath the canopy of forests, there are many climate-savvy techniques that Farm Africa promotes to farming communities across eastern Africa.

These techniques are not one-size-fits-all approaches but are tailored to the environmental, economic and cultural realities in which farmers operate. A third of the Earth's soil is acutely degraded. Worst affected is Africa. Globally, soil stores an estimated 9.8 billion tonnes of carbon. While soil degradation releases carbon, soil conservation traps it. What's

more, the brown stuff beneath our feet is the basis for all food production. Boosting the fertility of Africa's soil presents multiple benefits for people and the planet alike, by decreasing the cost of production; increasing farms' productivity; boosting microorganisms in the soil; and sequestering carbon.

With funding from Irish Aid, Farm Africa supported maize farmers in southern Ethiopia to adopt minimum tillage techniques, which don't require oxen or tractors to plough the land. Leaving soil alone can boost organic matter and, subsequently, carbon levels. The shift saw farmers improve their yields and profit margins. A win-win for farmers and the climate. [Read More](#)

2019 Events and Opportunities

Uganda Regional experience sharing Meeting on SAM hire service provision

ACT and FAO have organized a Regional workshop on sharing knowledge, experiences and opportunities for investment and partnership on Sustainable Agricultural Mechanization hire services provision practices along the food value chain with an objective to bring together critical stakeholders and actors along

agri-food value chain to share knowledge, experiences and opportunities on Sustainable Agricultural Mechanization hire services provision practices along the food value chain.

Specifically, the workshop intends: *i)* To enable the various stakeholders to share knowledge and practices on Sustainable Agricultural Mechanization along the agri-food Sustainable Agricultural Mechanization value chain; *ii)* To create awareness on the opportunities offered by Sustainable Agricultural Mechanization hire services provision and on the

role of capacity development in enhancing hire service provision; *iii)* To expose participants to the role of conservation agriculture in agricultural productivity and environmental degradation; and *iv)* To sensitize the Country's stakeholders on the need to develop investment roadmap and partnership plan on SAM

The workshop will take place on 9th – 13th December, 2019 in Kampala, Uganda.

For more information contact ACT through info@act-africa.org

29th Soil Science Society of East Africa Conference and Exhibition



29th Soil Science Society of East Africa Conference and Exhibition is a conference of public and private sector organizations accelerating delivery of Sustainable Land and Water Technologies, Innovations and Management Practices. The conference is scheduled to take place on **November 18–22, 2019 in Naivasha, Kenya**.

Thus, the Soil Science Society of East Africa (SSSEA) invites participation at a conference intended to critically analyse Land and Water Management (LWM), Technologies, Innovations and Management Practices (TIMPs) and strategies promoting Climate Smart Agriculture (CSA). This will be the 29th SSSEA Conference following the 28th



meeting held in Morogoro, Tanzania from 23rd to 27th November, 2015.

The theme of the conference is Climate Smart Land and Water Management Innovations for Enhanced Food and Nutrition Security. For more information, [Read more](#) or <https://taa.org.uk/>

The 8th World Congress on Conservation Agriculture (8WCCA), 29 June to 2 July 2020, Switzerland



The 8th World Congress on Conservation Agriculture (8WCCA) is jointly organized by the European Conservation Agriculture Federation (ECAAF), and its member in Switzerland, Swiss No-till (SNT), with the support of the Food and Agriculture Organization of the United Nations (FAO) and the African Conservation Tillage Network (ACT). It will be held in Bern, Switzerland, from 29 June to 2 July 2020.

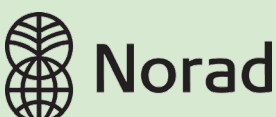
The theme of the Congress is: **The Future of Farming: Profitable and Sustainable Farming with Conservation Agriculture**

Find out more on this link [8WCCA](#)

To read our past CA Newsletter Issue, Download our **CA News app** from [Google Play store](#) at:



For more information, please contact: **Executive Secretary | African Conservation Tillage Network**
KARLO - Kabete, Waiyaki Way | P.O. Box 10375-00100, Nairobi, Kenya | Tel: +254 20 8076064; +254 774 895 077
Email: info@act-africa.org | Web: www.act-africa.org



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