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ALL ABOUT SUSTAINABLE AGRICULTURAL MECHANIZATION IN AFRICA



Food and Agriculture
Organization of the
United Nations

Joint Actions on Operationalization of
the Framework for Sustainable Agricultural
Mechanization in Africa (F-SAMA)

WEBINAR No. 11

Thursday, 11th April 2024 | 09:00 – 11:00 hrs GMT

Mechanization of smallholder land management practices in Malawi & Zimbabwe

Sustainable Agricultural Mechanization (SAM) in Africa is an urgent imperative and an indispensable pillar for attaining the *Malabo Declaration: Zero Hunger Vision by 2025*, Goal 2 of the *Sustainable Development Goals – and Agenda 2063*, the *Prosperous Africa We Want*. Doubling agricultural productivity and eliminating hunger and malnutrition in Africa by 2025 will not be realized unless mechanization along the food value chain is accorded utmost priority. Moreover, the COVID-19 pandemic has brought to the fore the important role mechanization can play in ensuring continuity of farm operations even during uncommon situations that the world is currently witnessing.

Understanding this situation, the African Union Commission (AUC) and the Food and Agriculture Organization of the United Nations (FAO), through an Africa-wide consultative process, developed the [Framework for Sustainable Agricultural Mechanization in Africa \(F-SAMA\)](#) in response to the request of the African Union Specialized Technical Committee (STC) on Agriculture, Rural Development, Water and Environment.

The F-SAMA, which was subsequently launched in Rome on 5th October 2018 during the 26th Session of the Committee on Agriculture (COAG), has ten priority elements geared towards informing policy and decision-makers in the Member States, the Regional Economic Communities (RECs) in Africa, and the wider development community dealing with agricultural development on the significance of mainstreaming SAM in their overall national and regional agricultural development programmes.

AfricaMechanize www.africamechanize.org is a SAM platform aiming to enhance knowledge management, information sharing, networking, and partnerships in Africa. The platform has been developed to support the African Union (AU) and the Food and Agriculture Organization of the United Nations (FAO) to operationalize the F-SAMA initiative, with FAO providing technical support and the African Conservation Tillage Network (ACT) providing secretariat functions. The platform was developed following recommendations from the December 2016 stakeholders' consultative

meeting co-organized by FAO, World Bank, AGRA, ACT, and others in Nairobi Kenya. The need for an information platform for SAM in Africa is further reinforced in Element 10 of the F-SAMA as one key *option of sustainable institutions for regional cooperation and networking*.

From November 2020 to June 2023, ten webinars/virtual discussions were conducted with Directors of Agricultural Mechanization and Engineering Services [DAMES] and other stakeholders of SAM in Africa on the ten priority elements of F-SAMA and operationalizing the framework in Africa. The webinars attracted more than 1,500 participants and 65 speakers from over 75 countries globally (45 from Africa). The virtual discussions were conducted through the AfricaMechanize information platform and jointly organized by FAO, AUC, ACT and other key mechanization stakeholders in Africa.

In most of Africa, land preparation is traditionally done either by adopting the outdated slash and-

burn system, or by using the hand hoe, draught animals or tractors and their conventional tillage implements. However, the paradigm is shifting especially on these implements used for land preparation, with some experts advocating for the ubiquitous adoption of sustainable land preparation and crop husbandry techniques, such as reduced and zero tillage or CA, in the quest to lower production costs and enhance soil health for commercial and environmental

sustainability (ACT, 2014). Conventional tillage (CT) implements and practices – used for many years – are not considered environmentally sustainable.

Accumulated positive experiences and scientific knowledge about CA are leading to its rapid adoption world-wide. Farmers now apply CA on over 205 million hectares (15% of the world's annual cropland area) in over 100 countries across a diverse range of agro-ecological zones and farm sizes, in all continents. It has enhanced farm production and reduced costs while conserving and enhancing the natural resources of land, water, biodiversity and climate. This value proposition aligns well in the context of increasing input costs prices (fertiliser, energy/fuel and labour), and climate change challenges.

Over 3.2 million hectares of cropland are under CA in Africa. This is about 1.5% of the global area under CA (Mkomwa & Kassam, 2022). The number of countries in Africa opting to adopt CA as a core production component of climate smart agriculture has been increasing exponentially, from 9 to 14 to 25 in 2008/09, 2013/14 and 2018/19 respectively. Likewise, the area under CA has also increased exponentially from 485,230 ha to 993,440 ha to 2,712,203 ha over the same period, more than five-fold increase over a period of ten years. This achievement is still far below expectations and the potential. Using Kenya as an example in analysing the CA farmers, the majority of the 33,100 ha (63%) under CA in Kenya is under large scale commercial farming by an estimated 10 farmers. The majority (99%) smallholder farmers contribute a mere 37% (12,247 ha) of the area under CA. The contribution of the medium scale farmers (those owning a tractor and cultivating 5-100 ha) is less than 1%. Smallholder farmers cultivate an average of 0.5 ha while the large-scale commercial

farmers have 400 - 1,600 ha. Mechanization has a significant contribution to the adoption of CA.

The **Objective of Webinar 11** is to understand the predominant land preparation techniques in Malawi and Zimbabwe, how they could benefit from, impede, or be transformed with sustainable agricultural mechanization, and how countries could actualize such a transformation by operationalization of F-SAMA, **Element 6**: Sustainable transformation of land preparation and crop/animal husbandry practices.

The Expected Outputs of this webinar include demystifying the role of agricultural mechanization in scaling sustainable land preparation techniques, mechanization related impediments, and innovative opportunities to address them. The specific outputs will include:

- i) *Information sheets* on smallholder CA seeding systems in Malawi and Zimbabwe.
- ii) *Action plan* for realization of the identified priority interventions.
- iii) *Summary paper of the proceedings of this webinar.*

The estimated 150 **Participants** in Webinar 11 will be drawn mainly from farmers' organizations, not for profit organizations, private sector, leaders of units responsible for Agricultural Mechanization and Engineering Services [DAMES] from all African countries, representatives of the Regional Economic Communities [RECs], AUC, and with FAO and ACT as facilitators.

The Webinar will be held online from **09:00 to 11:00 hrs GMT on Thursday 11th April 2024**, using the Zoom communication tool, in both **English and French**.

AGENDA

Date: Thursday, 11th April 2024 | **Time:** 09:00 - 11:00 hrs GMT

09:00 **Opening Remarks**

H.E. Amb. Josefa Sacko, AU Commissioner for Agriculture, Rural Development, Blue Economy and Sustainable Environment (ARBE).

09:10 **Overview and Objectives of the Webinar; Facilitator**

- **Mark Fynn**, Agro-food Systems and Investment Specialist, FAO, Sub-regional Office for Southern Africa (SFS), Harare, Zimbabwe. (Facilitator).

09:20 **The transformative land preparation innovations, technologies, challenges and opportunities in Malawi and Zimbabwe.**

Presentation: Agricultural mechanization in Zimbabwe - opportunities and challenges presented by the regenerative Conservation Agriculture initiatives.

- **Edwin Zimunga**, Chief Director, Agricultural Engineering, Mechanisation and Soil Conservation, Ministry of Lands, Agriculture, Fisheries, Water and Rural Development (MLAFWRD), Zimbabwe.

Presentation: What is the new "something coming" in the *Pfumvudza* regenerative Conservation Agriculture initiative: impacts and lessons to challenge mechanization.

- **Matthew Mbanga**, CEO, Foundations for Farming, Zimbabwe.

Presentation: Conservation Agriculture adoption status in Malawi and the role of sustainable agricultural mechanization.

- **Gertrude Kambauwa**, Director, Department of Land Resources Conservation, Ministry of Agriculture, Malawi.

Presentation: Mechanization of smallholder CA system in Malawi

- **Zwibe Jere, Director**, Total LandCare, Malawi.

Discussion: Scaling innovative SAM land preparation interventions building on the existing CA seeding systems.

Session Chair: Mloza-Banda, ACT CA Pillar Leader, ICAAP-Africa panellist, and Professor, University of Swaziland.

10:20 **Plenary discussions including question and answer session**

10:45 **Concluding Discussions and Way Forward**

- Presentation and discussions on the key 3-5 outcomes and proposed way forward actions of Webinar 11

10:55 **Closing by Fenton Beed**, NSPLD Group Leader, FAO Plant Production and Protection Division (NSP).

Registration is free but required to participate in this webinar. **Kindly register in advance** using the AfricaMechanize website: www.africamechanize.org.

Organizing Partners

The Webinars and Discussion Forums are being organized by the interim F-SAMA steering committee, comprised of AUC, FAO & ACT Network:

For more information, contact:

- F-SAMA - AfricaMechanize Secretariat; Email: info@africamechanize.org
- Afeikhena Jerome, Special Adviser to the Commissioner for Agriculture, Rural Development, Blue Economy and Sustainable Environment, African Union Commission, Addis Ababa, Ethiopia. (Email: Jeromea@africa-union.org);
- Josef Kienzle, Agricultural Engineer (Sustainable Mechanization). Leader of the Sustainable Agricultural Mechanization Group in the Plant Production and Protection Division (NSP) of FAO, Rome, Italy: (Email: Josef.Kienzle@fao.org);
- Saidi Mkomwa, Executive Director, African Conservation Tillage Network Nairobi, Kenya. (Email: saidi.mkomwa@act-africa.org).

The virtual webinar series is organized by:



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