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PROGRAMME COMMITTEE

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**Outcome of the FAO Global Conference on Sustainable Agricultural
Mechanization (GAMC)**

Queries on the substantive content of this document may be addressed to:

Ms Beth Bechdol
Deputy Director-General and Officer-in-Charge, Plant Production and Protection Division (NSP)
Tel: +39 06570 51800
Email: DDG-Bechdol@fao.org

Documents can be consulted at www.fao.org

EXECUTIVE SUMMARY

- The Food and Agriculture Organization of the United Nations (FAO) Global Conference on Sustainable Agricultural Mechanization (GAMC) was held from 27 to 29 September 2023, with the theme “Efficiency, Inclusiveness and Resilience”.
- The GAMC attracted the interest of 8 850 online registrants who could follow the event through live webcast. Over 300 attendees participated in person at FAO headquarters in Rome, Italy.
- FAO Director-General QU Dongyu attended the conference opening and closing sessions and was joined in the opening by Mr Patrizio Giacomo La Pietra, Undersecretary of State, Ministry of Agriculture, Food Sovereignty and Forestry, Italy, and, for the closing, by the Honourable Mohan Priyadarshana De Silva, State Minister of Agriculture, Sri Lanka.
- Seven keynote addresses and 54 technical presentations were delivered by highly qualified experts in the field of sustainable agricultural mechanization, digitalization and innovation. Four high level speakers joined the closing session to deliver remarks.
- The conference provided an open and neutral forum that enabled lively discussions on the presented items and led to the formulation of a 15-point call-to-action.

GUIDANCE SOUGHT FROM THE PROGRAMME COMMITTEE

- The Programme Committee is invited to take note of the document.

Draft Advice

The Committee:

- **appreciated the organization of the FAO Global Conference on Sustainable Agricultural Mechanization (GAMC); and**
- **noted the call-to-action addressed to the global community of stakeholders in sustainable agricultural mechanization, as well as FAO’s intention to increase its focus on this domain.**

I. Introduction

1. The Food and Agriculture Organization of the United Nations (FAO) organized the first-ever Global Conference on Sustainable Agricultural Mechanization (GAMC), with the theme “Efficiency, Inclusiveness and Resilience” from 27 to 29 September 2023.
2. The event provided a neutral and professional forum for FAO Members, farmers, academia, mechanization service providers, development agencies, policy makers, extension specialists, civil society, opinion leaders and the private sector for focused dialogues to prioritize actions and strengthen technical networks for the sustainable development of agricultural mechanization.
3. The GAMC attracted the interest of 8 850 online registrants who could follow the event through live webcast. Over 300 attendees participated in person at FAO headquarters in Rome, Italy.
4. Sustainable Agricultural Mechanization (SAM) is an important pillar in the efforts to transform agrifood systems to become more productive, diverse and resilient to shocks and stresses. It plays a key role in:
 - a) scaling sustainable crop production;
 - b) promoting the sustainable development of the agrifood sector;
 - c) creating decent jobs, increasing social equity, and reducing drudgery; and
 - d) enhancing farm input optimization by promoting timely and precise application methods, while implementing labour and energy-saving practices to reduce costs and enhance livelihoods, thereby building resilient agrifood systems.
5. Despite ongoing efforts to enhance the availability, accessibility, affordability and utilization of SAM, along with the prominent development of agricultural mechanization technologies, there remain several challenges that need to be addressed, including socioeconomic and institutional factors, especially in developing countries. Today, the agrifood sector has entered a new era of development because of the integration of new technologies in various fields, where digitalization has been of particular interest. Digital technologies offer great potential for productivity and sustainability within agrifood systems, creating more opportunities for innovation to thrive in the sector, including in low- and middle-income countries.
6. The GAMC was preceded by a first Global Conference on Sustainable Livestock Transformation,¹ held from 25 to 27 September 2023, which led to the set-up of a joint exhibit, focusing on technological paths, agricultural machinery, equipment innovations and livestock solutions.
7. This one-of-a kind exhibition showcased some of the latest technical developments in agricultural machinery across the agrifood value chain, alongside farming equipment of all sizes and scale that have provided innovative solutions to economic, social, and environmental challenges.

II. Outcome of the GAMC

8. The GAMC allowed participants to debate and synthesize evidence on innovations that confer efficiency, inclusiveness and resilience to various components of sustainable agricultural mechanization systems for possible scaling-up and adoption, particularly in developing countries. The conference discussions were organized across seven themes: “Mechanization for Sustainable Crop Production”, “Postharvest and Agro-processing”, “Climate Change and Resilience”, “Digitalization and Automation”, “Supply Chain and Standards”, “Business Models and Multi-stakeholder Engagement”, and “Enabling Environment”.

¹ PC 137/INF/5

9. FAO Director-General QU Dongyu summarized, in his closing remarks, four key summary points from the Conference:
- a) Solutions must be prepared for farmers, with farmers and by farmers. Farmers are on the frontlines of various threats, from the impacts of climate change, extreme weather events, plant pest and diseases, antimicrobial resistance and others;
 - b) The private sector is expected to play a key role in driving the development of new and emerging technologies and should ensure such developments are sustainable, economically viable, affordable, and accessible to all;
 - c) There is a need for enabling policies underpinned by scientific advances that allow sustainable agricultural mechanization to thrive; and
 - d) Strategic partnerships are crucial to mobilize knowledge, resources and innovations, and to develop evidence-based solutions at global, regional and country levels.
10. The GAMC led to three key outputs:
- a) a 15-point call-to-action to national governments and key stakeholders, as a result of discussions held across the conference's seven thematic sessions, for scaling up context-specific SAM systems through the development of inclusive policies and strategies related to SAM and the promotion and adoption of appropriate practices, business models and partnerships;
 - b) the conference proceedings - as a global knowledge product - to include a synthesis of keynote presentations, thematic sessions, and the call-to-action; and
 - c) identification of priority interventions and partnerships where FAO can offer support to countries and regions in strengthening their SAM systems.
11. With regard to FAO's engagement in sustainable agricultural mechanization, four main areas were identified:
- a) continue to provide technical support at country, regional and global levels through existing channels, and also to explore work with all stakeholders through new channels and working modalities;
 - b) support governments in developing and implementing national policies, strategies and regulations that support sustainable development of agricultural mechanization;
 - c) facilitate the establishment and operation of effective mechanisms, such as a multistakeholder technical panel; and
 - d) address the evolving needs and issues related to SAM – with the support of FAO.

III. The GAMC call-to-action

A. Development of the call-to-action

12. At an early stage in preparation for the GAMC, all thematic area teams initiated the discussion on possible follow-up initiatives and key actions. These were reviewed in line with the discussions held during the GAMC and fifteen action areas were presented to the plenary during the GAMC final session. The entire process was led by the chairs and co-chairs of the seven thematic sessions, and guided by the co-chair of the GAMC Organizing Committee. The call-to-action was published on the GAMC website to seek further feedback from stakeholders and partners until 31 October 2023. The updated call-to-action document will be reviewed and finalized by the GAMC Organizing Committee for integration into the conference proceedings.

13. The call-to-action summarizes the key action areas that should serve as a basis to develop future action plans at national, regional and global levels, and for the next steps, as outlined in the final section.

B. Call-to-action key areas

14. Mechanization for Crop Production:
 - a) Increase farm power access that is appropriate to the scales and to local conditions through a variety of business models (including service provider models) and financing schemes, to reduce drudgery and to increase food security without degrading natural resources.
 - b) Invest and promote precision technologies for crop production, including protected cultivation especially for smallholder farming systems.
15. Post-Harvest and Agro-Processing:
 - a) Establish post-harvest supply chain joint ventures in affordable, high-tech, structural and mechanical designs, and logistic systems combined with quality monitoring, prediction, and control methods towards a zero-waste fresh food chain.
 - b) Encourage sustainable quality control practices within agro-processing operations, with efficient energy, water and waste management to make affordable and consumer trusted healthy processed foods ensuring food security. Provide technology transfer and innovation to enhance circular bioeconomy practices for a sustainable agrifood chain that reaches all populations, leaving no one behind.
16. Sustainable Agricultural Mechanization, Climate Change and Resilience:
 - a) Incentivize climate smart, conservation and precision agriculture type mechanization and management systems, through comprehensive policies that are explicit and sensitive to climate change mitigation and adaptation and disincentivize soil and environment degrading practices. This should include increased training and/or support of extension agencies, financing incentives and/or targeted priority programmes for institutions.
 - b) Rate farming equipment and related systems (starting from manual and draught animal power systems) and their management options for goals of emission reduction and natural resource protection. Score agricultural practices relative to, e.g. Conservation Agriculture, quantitatively for greenhouse gas (GHG) emissions and protection of natural resources and biodiversity.
17. Digitalization and Automation:
 - a) Commit to development of technologies tailored to needs of smallholder farmers, enhancing their digital skills. Prioritize training and support for both farmers and service providers in making sustainable data-driven decisions. Establish a robust digital infrastructure that ensures open and equitable access, as a catalyst for the sustainable increase of agricultural productivity.
 - b) Pledge to amplify research and demonstration in automation and artificial intelligence, seamlessly integrating them into sustainable agrifood chains. Champion the growth of start-up ecosystems and innovative business models, particularly for smallholder farmers and regions with lower incomes, to fast-track advancements in sustainable agricultural mechanization.
18. Supply Chain and Standards:
 - a) Strengthen the supply chains for agricultural machinery, equipment and implements in developing countries by incentivizing/attracting suppliers and agribusiness to optimally utilize the capacity of local dealers and franchises, as well as manufacturers to ensure competitive and continuous provision of services including capacity development of operators and after-sale services.
 - b) Encourage the development and harmonization of standards, test protocols, certifications, and data for agricultural machinery, to facilitate the trade of safe and well-performing machinery. Facilitate the development and establishment of subregional and regional protocols for testing and certification of agricultural machinery, including gender inclusive design.

19. Business Models and Multi-Stakeholder Engagement:
 - a) Enhance business opportunities through comprehensive policies, programmes and institutional collaboration to incentivize, educate and enable farmers and entrepreneurs to develop capacity at local and national levels, meeting the mechanization and service provider needs.
 - b) Promote innovative and inclusive business models along the value chain with involvement of farmers, financing institutions, small- and medium-sized enterprises (SMEs) business owners and others to foster entrepreneurship in providing access to mechanization services.
20. Enabling Environment for Sustainable Agricultural Mechanization:
 - a) Strengthen national and international institutions to explicitly provide coordination and advice on SAM and digitalization to governments and other stakeholders, ensuring representation by key public and private stakeholders.
 - b) Create an enabling business environment to make mechanization services more accessible, available, affordable, and timely to all farmers through commercially viable enterprises.
 - c) Specifically, attract youth to work and innovate mechanization and digitalization by creating entrepreneurship incubators, facilitating finance and subsidies, investing in mentorship programmes and enhancing their skills.

IV. The way forward

21. The key actions identified under the call-to-action are envisaged as guidance for initiatives at country, regional and global levels, and to guide FAO's review and planning for strengthening its technical work related to sustainable agricultural mechanization. This includes consideration of suitable coordination and working modalities following the GAMC and of potential future convenings.

22. In addition to the publication of the GAMC proceedings, as a first concrete step, it is proposed to develop a document, including the key action points identified by the GAMC, for the 33rd Regional Conference for Africa, planned from 15 to 19 April 2024. This further reflects the close collaboration between FAO, both at global and at regional levels, with the African Union Commission (AUC) in implementing *The Sustainable Agricultural Mechanization: A Framework for Africa (F-SAMA)*.²

23. The outcomes of GAMC will be further presented to the 29th Session of the Committee on Agriculture (COAG), scheduled from 30 September to 4 October 2024.

² [The Sustainable Agricultural Mechanization: A Framework for Africa \(SAMA\)](#) was developed in response to a request by the African Union (AU) and endorsed by the AU Specialized Technical Committee (STC) on Agriculture, Rural Development, Water and Environment meeting in October 2017. It responds to both the Malabo Declaration and AU Agenda 2063 and is a result of discussions with policy makers and experts from AU member states, the AU Commission, FAO and key partners.