REPUBLIC OF KENYA

Ministry of Agriculture & Livestock Development

ACAT
African Conference on Agricultural Technologies

AATF
PROSPERITY THROUGH TECHNOLOGY

The African Conference On Agricultural Technologies (ACAT) 2023 Report

30 October to 03 November 2023
Safari Park Hotel, Nairobi, Kenya

Conference Report

Agricultural Resilience Through Innovation

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Executive Summary

This report highlights presentations and discussions held during the 2023 African Conference on Agricultural Technology (ACAT) on the theme **"Agricultural Resilience through Innovation."** The inaugural conference held from 30th October – 3rd November 2023, at the Safari Park Hotel, Nairobi was organized by the Government of Kenya, through the Ministry of Agriculture, Livestock, Fisheries and Cooperatives, and the African Agricultural Technology Foundation (AATF).

At the end of the conference, priority actions were packaged into a communique, serving as a call to action to all relevant stakeholders. This report presents key points raised during the discussions and the actions and priorities highlighted to foster agricultural development in Africa through adoption and use of innovative technologies.

Click **HERE** for the ACAT 2023 Joint Communique.

High Level Reflections

"African countries are grappling with the challenge of feeding a growing population, estimated to exceed 1.4 billion by 2030. Effective application of science and technology in agriculture is a powerful tool that can improve productivity across value chains and build resilience to the effects of climate change. Technology and innovation can boost the payback periods for agriculture investments and create more employment opportunities for Africans.

H.E. Dr. William Samoei Ruto, C.G.H.
President of the Republic of Kenya and
Commander-in-Chief of the Defence Forces

High Level Reflections

> Innovation in agriculture is a necessity not optional. The world's population and the demand for food is growing. As climate change poses threats to traditional agricultural practices, **we need innovations that will ensure sustainable, efficient and climate smart food production systems.**

H.E. Dr. Goodluck Jonathan
Former President Federal Republic of Nigeria and AATF Goodwill Ambassador

ACAT 2023 Conference Metrics

785 delegates from **32** countries in attendance

Over 200 products exhibited by public and private sectors

10 live technologies demonstrated

Over 2 million people reached through mainstream and social media

160 high level speakers

5 emerging technologies showcased

6 regional organisations and **22** African governments represented

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List of Abbreviations

ACAT	Africa Conference on Agricultural Technology
ACTESA	Alliance for Commodity Trade in Eastern and Southern
AFAAS	African Forum on Agricultural Advisory Services;
AFAP	Africa Fertilizer and Agribusiness Partnership
AfCFTA	The Africa Continental Free Trade Area
AUC	Africa Union Commission
AUDA	African Union Development Agency
BMGF	Bill and Melinda Gates Foundation
BoT	Board of Trustees
Bt	Bacillus thuringiensis
CAADP	Comprehensive Africa Agriculture Development Programme
CCARDESA	Centre for Coordination of Agricultural Research and Development for Southern Africa
CEO	Chief Executive Officer
CGA	Cereal Growers Association
COMESA	Common Market for Eastern and Southern Africa
COSTECH	Tanzania Commission for Science and Technology
COVID-19	Corona Virus Disease
CPA	Consolidated Plan of Action
CSIR	Council for Scientific and Industrial Research
CTA	Call to Action
CTCN	Climate Technology Center & Network
DLCO-EA	Desert Locust Control Organisation for Eastern Africa
EAC	East African Community
EAGC	Eastern Africa Grain Council
ECOWAS	Economic Commission for West African States
EIAR	Ethiopian Institute of Agricultural Research
FANRPAN	Food, Agriculture and Natural Resources Policy Analysis Network;
FAO	Food and Agriculture Organisation
FARA	Forum for Agricultural Research in Africa
GDP	Gross Domestic Product
GE	Genome Editing
GMOs	Genetically Modified Organisms
IAR	Institute of Agriculture Research, Nigeria
IFPRI	International Food Policy Research Institute
IITA	International Institute of Tropical Agriculture
INERA	Institute of Environment and Agricultural Research, Burkina Faso
KALRO	Kenya Agricultural and Livestock Research Organisation
KEPHIS	Kenya Plant Health Inspectorate Service
KUBICO	Kenya University Biotech Consortium
MSU	Michigan State University
NABDA	Nigeria Biotechnology Development Agency
NARO	National Agricultural Research Organisation, Uganda
NARS	National Research Systems
NASAC	Network of African Science Academies
NEPAD	New Partnership for Africa's Development
NGOs	Non-Governmental Organizations
NPBTs	New Plant Breeding Technologies
R&D	Research and Development
RAB	Rwanda Agriculture and Animal Resources Board
SADC	Southern Africa Development Community
SDATA	Strategic Dialogues on Agricultural Technologies in Africa
SSA	Sub-Saharan Africa
STI	Science Technology and Innovations
STISA	Science Technology and Innovation Strategy for Africa
TIP	Technical Interactive Panel
UNCST	Uganda National Council for Science and Technology
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UoN	University of Nairobi
USA	United States of America
WTO	World Trade Organization

About ACAT

The African Conference on Agricultural Technologies (ACAT) focuses on technology transfer and showcases practical solutions that catalyze more efficient, inclusive, resilient and sustainable agriculture in Africa. ACAT discussions and consultations center on game-changing novel technologies, ideas and policies that aim to foster agricultural transformation on the continent. ACAT highlights the centrality of science, technology and innovation (STI), that has been key in solving many of Africa's challenges; from mobile money payments to drought-tolerant seeds. Through its program, ACAT promotes networking, shared learning and provides a platform to attract investments for innovation and technology development while feeding into continental and global policy processes. Through a series of well-crafted interactive panel discussions, plenary sessions, policy dialogues and live demonstrations of scalable technologies, ACAT brings together experts, policymakers, practitioners, farmers, private sector players and development partners in the agriculture sector from across the continent and beyond.

ACAT 2023 was attended by over 785 people from 30 countries including government representatives, industry thought leaders, farmers, youth, representatives from the African Union, AUDA-NEPAD, sub-regional organizations, local and international universities and large-scale entrepreneurs/businesses.

ACAT Objectives

1 SHOWCASE

Emerging agri-science and technological innovation

2 UNLOCK

Innovation and technology access and delivery

3 PROMOTE

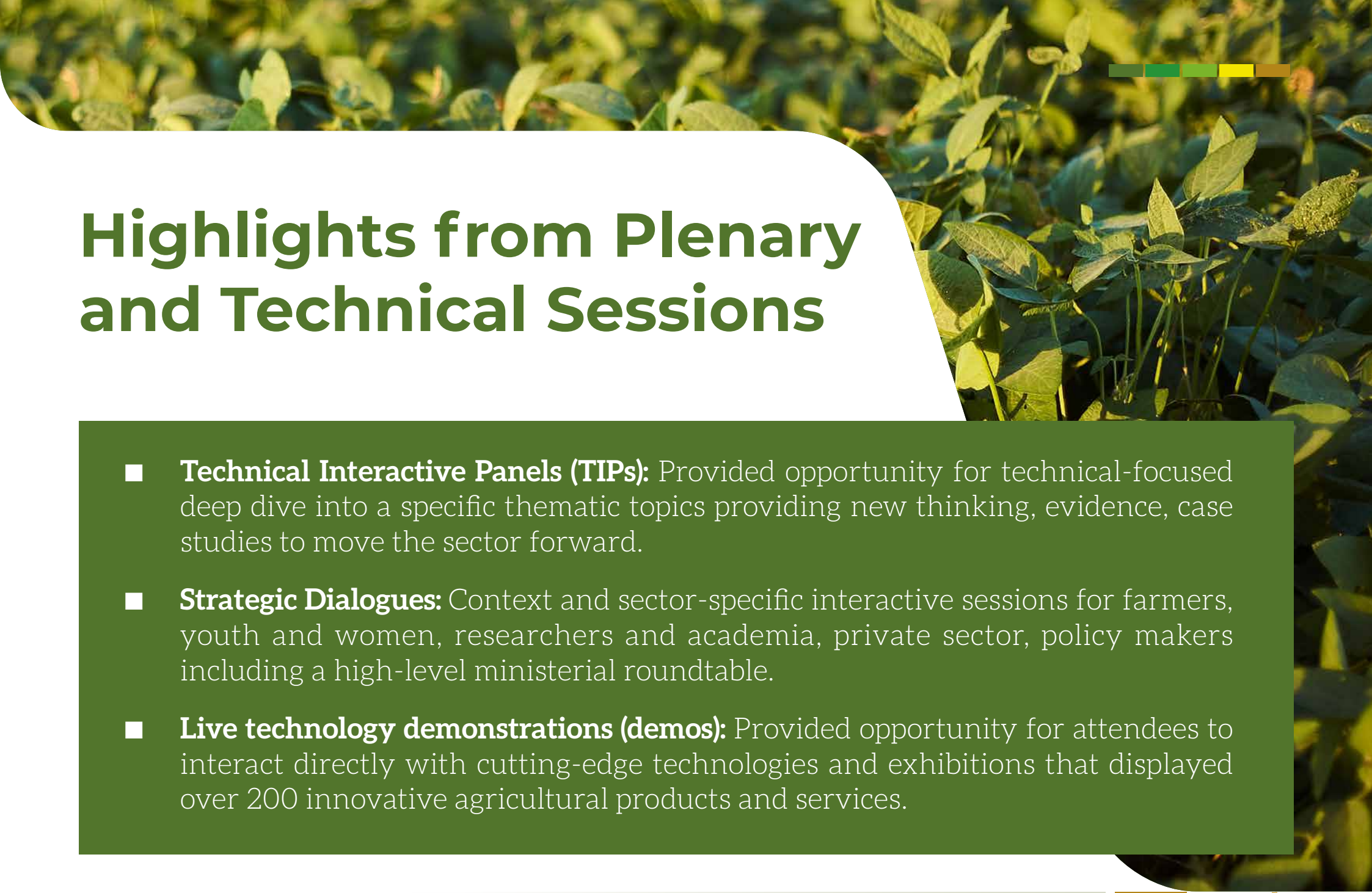
Networking and shared learning on agricultural technology

4 DEMONSTRATE

Innovations making a difference in the agricultural space in Africa

5 ENGAGE

Critical stakeholders including policy makers towards advancing ag tech in Africa



Highlights from Plenary and Technical Sessions

- **Technical Interactive Panels (TIPs):** Provided opportunity for technical-focused deep dive into a specific thematic topics providing new thinking, evidence, case studies to move the sector forward.
- **Strategic Dialogues:** Context and sector-specific interactive sessions for farmers, youth and women, researchers and academia, private sector, policy makers including a high-level ministerial roundtable.
- **Live technology demonstrations (demos):** Provided opportunity for attendees to interact directly with cutting-edge technologies and exhibitions that displayed over 200 innovative agricultural products and services.

Day 1: Food Security

Plenary: Enabling Farm Scale Resilience Through STI

Speakers

- **Dr. Canisius Kanangire**, Executive Director, AATF
- **Dr. Sylvester Oikeh**, Project Manager, TELA Maize Project, AATF
- **Prof. Appolinaire Djikeng**, Director General, ILRI
- **Dr. Amos Nungu**, Director General, COSTECH Tanzania
- **Dr. Kenton Dashiell**, Deputy Director General/ Partnerships for Delivery/General Directorate, IITA
- **Dr. David J. Spielman**, Director, Innovation Policy & Scaling Unit, IFPRI
- **Mr. Lawrence Kent**, Senior Program Officer, Agricultural Development, BMGF
- **Prof. Muhammed Ishiyaku**, Executive Director, IAR

Key Messages

- STI can be crucial in building farm-scale resilience by enabling farmers to adopt sustainable and innovative practices.
- Promoting STI requires the collaboration of stakeholders, including governments, the private sector, and research institutions.
- An enabling environment including access to resources and infrastructure will enhance progress in agriculture.
- The youth need to be incentivized to engage in agriculture.

Session

Focusing on how STI can enable farm-scale resilience, the session noted that the resilience of farmers and food systems depends on how well innovations, both crop and livestock, can be generated and included in the farming systems.

Genetic modification was acknowledged as key in addressing food shortages but there is concern with delayed product delivery to farmers. Panelists emphasized the need to increase funding to scale out research products.

Understanding farmer behavior changes and using the knowledge to design demand-driven technologies can ensure that research efforts achieve the desired impact of technologies. It is important to de-risk the private sector through trust building to leverage their support to smallholder farmers.

Session Sponsored by:

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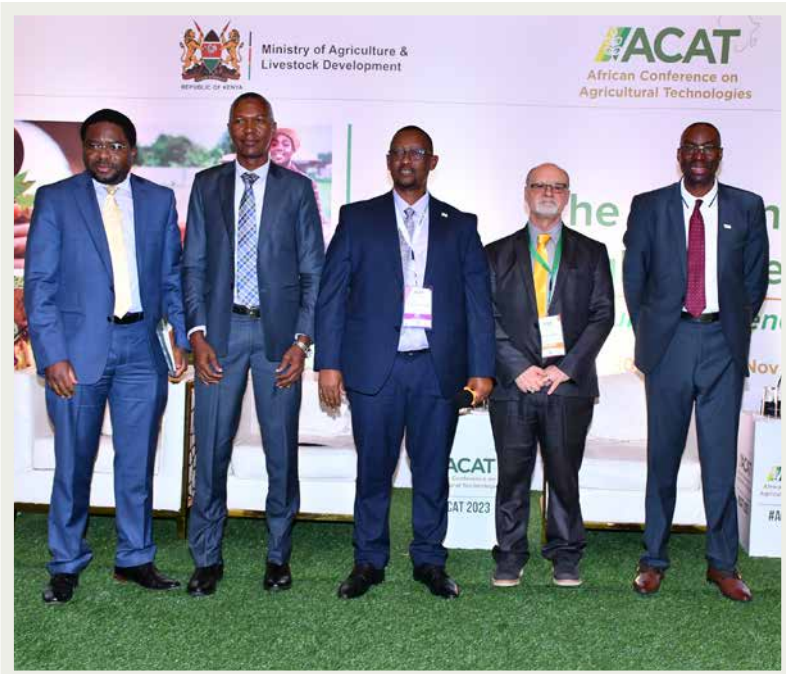


Recommendations

- Policymakers and the private sector should promote STI outputs that meet Africa's needs.
- Utilization of digital technology should be promoted to incentivize smallholder farmers to collect production data.
- There is need to strengthen multi-sector collaboration for successful technology adoption.

"We are looking at agricultural technology to provide solutions to the animal sector, especially in dealing with infections. Using digital technology, we can incentivize smallholder farmers to collect and share data critical for decision making.
Prof. Apollinaire Djikeng, Director General-ILRI

"Scaling of agricultural technologies is critical in achieving impact. There is need to amplify technology deployment and scaling initiatives such the Technologies for African Agricultural Transformation (TAAT) funded by the AfDB to achieve impact.
Dr. Kenton Dashiell, DDG -IITA

Technical Interactive Panel 1: Ag-tech and Digitalization

Speakers

- **H.E. Muhammadou M.O. Kah**, Member, Board of Trustees (BoT) AATF, and Ambassador & Permanent Representative, The Republic of Gambia to the UN, WTO & other organizations in Geneva
- **Ms. Susan Kahumbu**, Founder, Green Dreams Tech Ltd and iCow
- **Mr. Jehiel Oliver**, CEO and Founder, Hello Tractor
- **Dr. Kenneth Mubea**, Capacity Development Lead, Digital Earth Africa
- **Ms. Lucy Komen**, Ag. Registrar, Warehouse Receipt System Council
- **Mr. Anthony Muriithi**, Agriculture Attache, Mission of Kenya to FAO
- **Dr. Eliud K. Krieger**, Director General, KALRO
- **Prof. Bernard Slippers**, Member, BoT AATF & Director, FABI
- **Prof. Theophilus Mwendwa Mutui**, Managing Director, KEPHIS
- **Dr. Racine Ly**, Director, AKADEMIYA2063

Key Messages

- Successful adoption of agtech and digitalization requires technology access, capacity building, and regulatory frameworks.
- Collaboration among stakeholders—farmers, researchers, and the private sector—is critical for adopting agtech and digitalization.
- Sufficient investment in agtech digitization to address the needs of farmers and consumers could attend to the talent migration crisis among youth in technology.

Session

With a focus on access to agricultural digitization technology, data use and integrity, and inclusion of youth in agtech initiatives the session noted the need for incorporation of farmers in innovation modelling and co-creation of agtech solutions to develop products that are fit for purpose. Localized policies and data prioritization in agriculture in Africa was emphasized. Local funding to support initiatives needs to be paired with properly validated data from farmers and the private sector.

Challenges identified in agtech included insufficient partnerships and data access complexities. The panelists noted that enhanced investment in agtech digitization to address the real needs of farmers and consumers could address talent migration crisis among youth in technology.

Recommendations

- Collaborative design of centralized and scalable virtual systems to provide farmers with essential information
- Need for a unified agtech regulatory framework to enhance progress.
- Build partnerships and encourage leveraging of competitive advantages
- Carry out advocacy on data sharing and cooperation in development of solutions across institutions and actors.

> *We have seen some tremendous results when people use digitization in agriculture, like a 300% increase in seed yield for some farmers.*
> **Ms. Susan Kahumbu, CEO & Founder, Green Dreams Tech Ltd and iCow, Kenya**

Technical Interactive Panel 2: Agricultural Mechanization

Speakers

- **Prof. Garba Hamidu Sharubutu**, Member BOT AATF & Executive Secretary,ARCN
- **Ms. Winnie Jelagat Kimutai**, Head Agronomist, Bharat Bio East Africa Ltd
- **Mr. George Marechera**, Agribusiness Development Manager, AATF
- **Dr. Duncan Onyango Mbuge**, Associate Professor, UoN
- **Mr. Geoffrey Otieno**, Board Director, Agridrive Ltd
- **Mr. Anthony Kabethi**, Equity Foundation
- **Mr. Jean Hitimana**, Rwanda Agriculture and Animal Resources Development Board.

Key Messages

- Mechanization can revolutionize agriculture in Africa by reducing labor costs and increasing efficiency and yields.
- Adoption of agricultural mechanization by smallholder farmers is hindered by limited access to finance, poor infrastructure, low awareness of appropriate mechanization technologies and fragmented farm holdings.
- Development of targeted solutions through public-private partnerships can address hindrances to mechanization adoption.

Session

The session focused on the latest developments in agricultural mechanization and the potential to transform agriculture in Africa through increased efficiency, productivity and profitability. Panelists called for prioritizing issues of "Women in Agriculture," including involvement in the design of machines noting they provide a large part of farm labour.

Panelists noted that the low access to and utilization of machinery among smallholder farmers can be increased through a shared economy model, with private sector providing paid-mechanized services to farmer clusters, financial institutions funding machinery acquisition by farmer cooperatives, and governments providing machinery acquisition subsidies for private sector through tax exemptions and discounts. Agricultural insurance scheme was proposed as a de-risking mechanism avenue to increase access to credit by smallholder farmers.

Recommendations

- Governments should provide subsidies, tax exemptions, and discounts to enhance the acquisition of machinery and entrepreneurship in the provision of mechanization services.
- Encourage farmers to organize themselves into cooperatives for access to affordable mechanization.
- Set clear strategies for livestock and crop production for complementary usage of the same machinery on both value chains.
- Avail mechanization for different ecologies and landscapes, crop types, and seasonality.

> *"The action we all need is to embrace seed, soil, and mechanization technologies suitable for Africa because no single solution can adequately address the challenges in African agriculture.*
>
> **Patience Koku, CEO – Replenish Farms**

Day 1 Gallery

Farmer Testimonial

> *Striga resistant IR Maize helped me to demystify the notion that our land that was heavily infested with the Striga weed was cursed by our ancestors... I managed to more than triple yields in just one season of planting the improved seed.*
>
> **Ken Oure, Maize Farmer, Kagan-Kenya**

Kennedy Oure, a maize farmer from Kagan, a village in Homa Bay County in western Kenya is a symbol of resilience. His grandmother advised him to abandon farming as she strongly believed that their land was cursed by their ancestors. This was after a series of 100% crop failures attributed to heavy Striga weed infestation, Ken took a risk and sold his only cow and traveled to attend the annual Agricultural Society of Kenya Show in Nairobi where he met the late Dr. Gospel Omanya, the then Seed Systems Manager at AATF, who introduced him to StrigAway®, a hybrid maize variety that was bred to protect maize from the devastating Striga weed. Planting the seed completely transformed his farming life as he was able to more than triple the yields from the same apparently cursed land that had been condemned. From his farming proceeds he was able to transform his household, including sending his wife back to school and educating his children, one of whom is pursuing a degree course at the university.

Day 2: Enabling Environment

Official Opening Plenary: Transforming Agriculture Through Technology

Session

The opening session focused on strategies for driving agricultural innovation through technology recognising the centrality of an enabling environment and the critical role of policy makers and other players.

The session discussed technology's transformative power and how it can advance agriculture in Africa and foster sustainable growth and resilient food systems. Panelists underscored the crucial role of governments in regulating innovative technologies to ensure their safe and sustained use.

Speakers

- **Ms. Yvonne Okwara**, News Anchor, Citizen TV
- **Dr. Ousmane Badiane**, Founder and Executive Chairperson, AKADEMIYA2063
- **Prof. Aggrey Ambali**, AATF Board of Trustees Chair
- **Patience Koku**, CEO – Replenish Farms
- **Hon. Mithika Linturi**, Cabinet Secretary, Ministry of Agriculture, Kenya
- **H.E. Dr. Goodluck Ebele Azikiwe Jonathan**, Former President, Federal Republic of Nigeria

Key Messages

- Innovation, investments, and collaborations are essential for technology to play a pivotal role in agriculture.
- Access to technology by smallholder farmers is a critical priority in addressing challenges in Africa's food systems.
- It is essential to build on existing Indigenous knowledge among farmers as a key platform in technology development.

"Given the requirement for farmers to produce more food despite limited resources, it is crucial that we revolutionize and modernize our agricultural practices to meet this challenge.

Dr. Canisius Kanangire, Executive Director, AATF

> *Everybody in the agricultural value chain needs to be consistent and responsible in doing what they ought to do to promote technology adoption and enhance food security.*
> **Dr. Ousmane Badiane, Founder and Executive Chairperson, AKADEMIYA2063**

Governments were also highlighted as key players in funding basic and advanced research to support the development of innovative farming solutions.

It was emphasized that technology should be understood from a broad perspective, which is defined by changes in climate, soil degradation, and increased land subdivision. Panelists called for a demand-driven technology approach.

Research institutions should exploit solutions by investing in information dissemination to ensure that outputs reach farmers effectively. An enabling environment and policy framework was noted as essential in facilitating freedom of innovation.

The session called for a comprehensive value chain that not only facilitates technology adoption but also leverages existing indigenous knowledge to enhance access to technology.

Recommendations

- Adopt a demand-driven, technology development approach that places the farmer at the center of research and innovation.
- Governments to fund basic and advanced research to support the local development of innovative solutions.
- Create an enabling policy framework that enhances freedom to innovate and the generation of valuable technologies.
- Exploit existing solutions by research institutions through information dissemination to ensure that outputs reach farmers whose voices must be included and recognized in the National Plan of Action.

High Level Plenary: Trade, Policy, and Regulatory Frameworks

Speakers

- **Ms. Yvonne Okwara**, News Anchor, Citizen TV
- **Mr. George Marechera**, Agribusiness Development Manager, AATF
- **Prof. Francis Nang'ayo**, Senior Manager, Policy & Regulatory Affairs, AATF
- **Ms. Emily Rees**, President and Chief Executive Officer, CropLife International
- **Ms. Michelle Kagari**, Senior Director Government Relations and Policy, One Acre Fund
- **Mr. Nega Wubeneh**, Head of Trade and Markets, AGRA

Key Messages

- Effective policy and regulatory frameworks enable trade, economic growth, and African development.
- The successful scaling of trade across Africa requires investment in capacity-building and infrastructure.
- An African block approach to international trade will strengthen the continent's negotiating position in the global market
- Implementing the African Continental Free Trade Area Agreement to attract investors must be expedited.

Session

This high-level plenary session focused on the role of policy and regulatory frameworks in enabling trade and economic development in emerging markets.

The session noted that countries are yet to actualize the Maputo Declaration that included a commitment by countries to invest a minimum of 10% of their GDP to support agriculture to spur economic growth. It emerged that isolated country-specific regulations, standards, and policies that limit the optimization of opportunities continue to hinder Intra-African trade.

In addition, Africa's entry into the global market is weakened by its approach and trade negotiations as individual sovereign nations instead of as a continental body.

"Flexibility is imperative on how we trade owing to climate change.

Emily Rees, President and Chief Executive Officer, CropLife International

The panel noted that policies to promote the development of inputs, including agro-processing and sustainable product markets, are lacking in most countries. Additionally, policies that support trade across the continent to promote the uptake of agricultural technologies are inadequate.

It was noted that implementing the African Continental Free Trade Area agreement needs to be expedited to spur trade across the continent. Harmonized policies and standards will simplify trade agreements across the continent and promote cross-border trade through flexibility in payments regionally, simplification of customs procedures and institution of globally aligned non-tariff barriers such as sanitary and phytosanitary requirements to enhance trade.

Recommendations

- Strengthen Africa's negotiating position in international trade by pitching as an African block as opposed to individual countries
- Expedite the implementation of the African Continental Free Trade Area agreement to attract investors.
- Create policy frameworks that promote trade including harmonization of policies and standards and access to finance.

"Implementation of policies is the significant gap in Africa; for example, our border policies are so strict that investors find it hard to move agricultural products across Africa.
Dr. Laila Lokosang, Senior Technical Advisor, AU

"We need policies that address interrelated areas: agricultural inputs like seeds, fertilizers, and soils; and agro-processing incentivizing policies that address output markets.
Dr. Francis Nang'ayo, Senior Manager, Regulatory Affairs, AATF

Technical Interactive Panel 3: One Health

Speakers

- **Dr. Hung Nguyen**, Co-Leader, Animal and Human Health Program, ILRI
- **Dr. Emmanuel Okogbenin**, Director, Program Development and Commercialization, AATF
- **Mr. Justin Hess**, Founder, Aquaponics
- **Prof. Lateef Oladimeji Sanni**, President, ISTRC
- **Ms. Feddy Tesha**, Founder, Profate Investment Ltd

"What an animal eats it becomes, and therefore, there is a need to improve animal feeds to have a direct impact on the health of the animals.

Mr. Justin Hess, Founder, Aquaponics South Africa

Key Messages

- One Health helps integrate human, animal, and environmental health ecosystems through collaborative approaches that promote sustainable food systems in Africa.
- There is a need to explore and improve on the positive contributions of agricultural technologies and work towards finding a balance between human and animal health and the environmental sectors.
- The crop/livestock system, which can be seen as most basic from a One-Health approach, is already practiced by millions of smallholder farmers, and the lack of policy support is a missed opportunity.

Session

Focusing on inter-linkages between human, animal, and environmental health in the context of agriculture, panelists noted that agricultural production is a critical component of One Health since food links the environment to human and livestock health; it also represents a pathway for exposure to harmful microbes and agrochemicals. Inappropriate agronomic practices can damage the environment, with unintended adverse impacts on human health, exacerbated by poor compliance with agricultural standards that would enhance the One Health approach.

To promote the One Health concept, panelists called for a collaborative and multidisciplinary approach to understand the ecology of each emerging zoonotic disease, undertake a risk assessment, and develop plans for response and control. Panelists urged governments to develop standard operating procedures and regulatory frameworks to guarantee consumer safety and build alignment of departments of crops, livestock, environment, and health on the One Health goal.

Recommendations

- Develop standard operating procedures to assure consumers of safety on the quality of products.
- Enhance localized approaches to One Health by aligning interests across government departments.
- Develop a high-level policy brief on One Health to encourage the development of adequate regulatory systems and procedures
- Farmers have a role to play in selecting what is safe and sound for use to enhance a less harmful interaction between humans, livestock, and the environment, hence promoting the One Health concept

Technical Interactive Panel 4: Biotechnology Advances and Emerging Opportunities

Speakers

- **Prof. Hamadi Boga**, Senior Advisor at African Agricultural Transformation Initiative
- **Ms. Florence Nazare**, Head of Centers of Excellence, AUDA-NEPAD
- **Dr. Nompumelelo Obokoh**, Chief Executive Officer, SACNASP
- **Dr. Silas Obukosia**, Business Manager, African Biosafety Network of Expertise, ABNE
- **Dr. Agnes Asagbra**, Director-General, National Biosafety Management Agency (NBMA)
- **Dr. James Onsando**, International Seed and Seed Systems
- **Prof. Walter Alhassan**, Former Director General, CSIR, Ghana
- **Dr. Sheila Ochugboju**, Executive Director, Alliance for Science
- **Dr. Margaret Karembu**, Director, ISAAA AfriCenter

Key Messages

- Innovative technologies, including genome editing, offer opportunity to unravel novel traits critical to spurring advances in industry, agriculture, health, and nutrition.
- Africa should fast-track the development of an enabling environment to facilitate delivery of biotechnology value in a timely manner.
- Biotechnology investment should be prioritised to enable utilisation of its efficient approaches for product development and innovative solutions.

Session

The session focused on the role of agricultural biotechnology in transforming agriculture for improved resilience to climate change and sustainable food systems. Panelists highlighted the importance of African ownership and participation in biotechnology developments through enhanced capacity building in human and infrastructural resources and the creation of an enabling environment, enhanced awareness, and investment from governments and the private sector.

It was acknowledged that many African countries are yet to develop strong biotechnology policies which can impede progress. It emerged that biotech communication efforts were ineffective, hindering understanding of the technology and its products due to the fragmented approach with information scattered and isolated. The session emphasized the need to break down information silos and foster collaboration.

Recommendations

- Introduce public participatory sessions to facilitate disseminating research and scientific information to increase public involvement and understanding.
- Shift from process-based to product-centered communication models to enhance public appreciation of biotech products.
- Establish science-based biosafety laws to attract private-sector investment in biotechnology in Africa.
- Project and showcase biotechnology as a solution to climate change adoption and mitigation.

A major take-home from the discussions is that we should consolidate the knowledge economy and make information available by connecting governments, science, research and development, and the media.

Ms. Florence Nazare, Lead on Genome Editing, AUDA-NEPAD

Day 2 Gallery









ACAT 2023 Awards

The ACAT 2023 IMPACT AWARD was designed to celebrate and honor the continent's top innovators who have made significant contributions to agriculture technology. The award recognized outstanding achievements by highlighting the remarkable talents, dedication, and hard work of individuals who have gone above and beyond in their respective areas. Let us be inspired by their stories and motivated to reach new heights in our own endeavors.

Dr. Eugene Terry, Implementing Director, AATF

"There really is no other task in the world I would rather be tackling at this time in my life than that of promoting partnerships for increasing African agricultural productivity.

Joyce Seke Ampitan, Agricultural Biotechnology Champion - Nigeria

"I farm a biotech crop; I eat it and I love it. Because with science we shall fight one of the common enemies (hunger) of humanity to a standstill.

Prof. Mohammad Faguji Ishiyaku, Plant Breeder/ Biotechnologist Champion

"Biotechnology is the Allen key to agricultural development problems, when deployed appropriately, it dismantles even the most insurmountable problems and releases effective solutions for farmers and consumers leading to huge economic growth.

Mahmoud Omari Masemo, BT Cotton Farmer Champion - Kenya

"Before the introduction of BT cotton, I used to harvest 500 kilograms of cotton per acre using conventional seeds. With the introduction of BT cotton, the yields have significantly improved, ranging from 900 to 1,200 kilograms of cotton per acre.

Click here (link) for details of the award.

Day 3: Climate Smart Agriculture

Day sponsored by:

BILL & MELINDA GATES AGRICULTURAL INNOVATIONS

Plenary: Mainstreaming Biotechnology in African Agriculture

Speakers

- **Dr. Roy Mugiira**, CEO, National Biosafety Authority
- **Mr. Vitumbiko Chinoko**, OFAB Project Manager, AATF
- **Prof. Richard Oduor**, Registrar, Research, Kenyatta University/ Chair, KUBICO
- **Ms. Patience Koku**, CEO, Replenish Farms
- **Dr. Rufus Ebegba**, Executive Director, REC
- **Prof. Abdullahi Mustapha**, Director General and CEO, NABDA
- **Dr. Titus Alicai**, Director of Research and Postgraduate Studies, NARO
- **Mr. Joe Cornelius**, Chief Executive Officer, Gates Ag One
- **Dr. Leena Tripathi**, Director, Eastern Africa Hub Biotechnology Program Leader, IITA
- **Prof. Douglas D. Buhler**, Associate VP, Professor of Plant, Soil and Microbial Sciences, MSU
- **Mr. George Sarpong**, Member, BOT, AATF & Director, G.A Sarpong & Co. Legal Practitioners

Key Messages

- Biotechnologies require a facilitative regulatory environment, research, and capacity-building investment.
- Collaboration between researchers and regulatory agencies and public and private sectors will ensure emerging technologies benefit African smallholder farmers.
- A centralized knowledge platform is needed to address the knowledge gap and perception challenges.
- Intellectual property is not sufficiently explored and taken up in Africa, posing a challenge to private investment.

Session

The session discussed the benefits and risks of biotechnology and the importance of science-based ethical approaches in agriculture. Panelists highlighted the current state of agricultural biotechnology in Africa as predominantly influenced by policies that rely on

Session Sponsored by:

MICHIGAN STATE UNIVERSITY

subjective perception and personal opinion rather than empirical scientific evidence. It was noted that biotech infrastructure, skilled workforce, and sufficient capacity are low.

Additionally, Africa lags in intellectual property rights, with a meager 0.5% global patent registrations in 2018. Inadequate funding including public investment was noted as a significant challenge to the advancement of agricultural biotechnology in Africa. The session highlighted the need to leverage on Africa's youthful population which has a penchant for digital platforms and to whom emerging technologies are considered an invaluable option.

The panelists proposed a well targeted biotech messaging regime to fit the different users to enhance the adoption of biotechnology.

"African advantage is in the youth, which resonates with digital platforms, and the ability to tap into that "youthquake" will help to realize the full potential of biotechnology and emerging agricultural technologies.
Dr. Joe Cornelius, Chief Executive Officer Bill & Melinda Gates Agricultural Innovations.

"There is a very strong role for short-focused programs on specific areas like intellectual property and commercialization of knowledge and techniques to move long term relationships and interactions.
Prof. Douglas D. Buhler, Associate VP, Professor of Plant, Soil and Microbial Sciences, MSU

The speakers also emphasized the need for a holistic approach that encompasses policy changes, resource mobilization, capacity development, and strategic partnerships to mainstream biotechnology into Africa's agriculture.

Recommendations

- Develop a strategy to help African countries without biosafety laws and systems
- Consolidate resources for research, implementation, and commercialization of biotechnology findings
- Set up universities as centers for training and research in biotech and establishing innovation centers for biotechnology to enable country-specific focus based on strength.

Technical Interactive Panel 5: Climate-Smart Farming Solutions

Speakers

- **Mr. Vitumbiko Chinoko**, OFAB Project Manager,AATF
- **Ms. Sheila Roquitte**, Deputy Mission Director, Kenya, USAID
- **Dr. Emma Naluyima**, Chief Operating Officer, One Acre Unlimited
- **Mr. Jacob Cheptaiwa**, Deputy Director of Plant Variety Protection, KEPHIS
- **Ms. Sithembile Mwamakamba**, Director, Policy Research and Analysis, FANRPAN
- **Mr. Kamwesige Mtembei**, Ministry of Agriculture, Tanzania
- **Ms. Elizabeth Gulugulu**, Program Project Manager, African Youth Initiative on Climate Change
- **Dr. Hamidou Traoré**, Director General, INERA Burkina Faso
- **Dr. Solomon Assefa**, Head, TAAT Clearinghouse
- **Mr. Benson Kamau**, CEO, Climate Smart Agriculture Excellence Centres
- **Mr. Charles Gitau**, Country Director and Vice Chair-Pan Africa Board, Africa Agribusiness Academy
- **Mr. Dziko Chatata**, Founder Thanwe Farms

Key Messages

- Climate-smart farming solutions that enhance productivity while ensuring adaptation and mitigation are essential to improving farmer resilience towards enhanced productivity, food security, and sustainable food systems.
- Agricultural policies and investments should provide support for scalable climate-smart farming solutions.
- Small-scale production promoting biodiversity and climate resilience is feasible, productive, and profitable.

Session

This session focused on the latest innovations in climate-smart farming practices, such as conservation and regenerative agriculture and technologies, including small-scale adaptation technologies and how they can be applied to mitigate the impact of climate change in agriculture, particularly in Africa. The panelists noted there was limited inclusion of women and youth in technology design and financing with women also missing out on capacity-building initiatives because of household responsibilities.

Sustainable food production is vital amidst the challenges of climate change.
Ms. Sheila Roquitte, Deputy Mission Director, Kenya, USAID

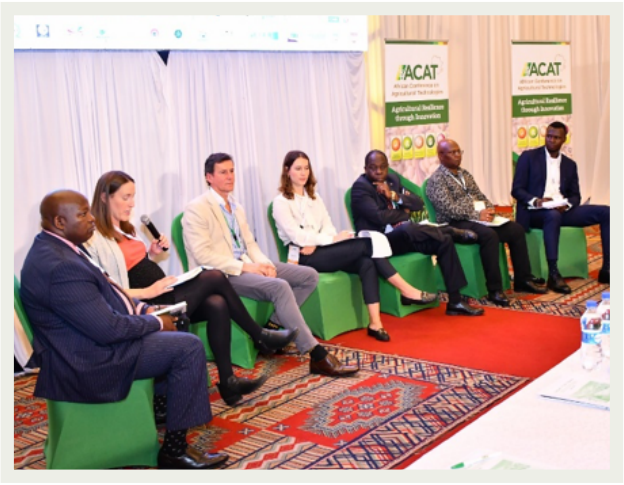
The panelists noted gaps between formulation and practice of policies to address climate-smart technologies attributed to insufficient financial investment from governments and limited interest by private sector. It emerged that technologies such as Artificial Intelligence (AI) have not been fully exploited to support climate-smart technologies.

The issue of conflicting taxation policies affecting development and importation of climate-smart technologies was also discussed including the limited inclusion of women and youth in technology design and financing. Speakers urged governments to harmonize messages around climate-smart technologies to encourage investment and support for the development and dissemination of new technologies.

Recommendations

- Governments to enhance outreach and proactive extension programs to promote adoption of climate-smart technologies.
- Set up easily accessible information centers for farmers to mitigate the inadequate digital data management systems.
- Governments and private sector to co-design financially attractive climate-smart technologies.
- Engage women in developing appropriate tailor-made solutions for increasing productivity.

Technical Interactive Panel 6: Agricultural Early Warning Systems



Speakers

- **Mr. John Agboola**, Ambassador, Platform for Big Data in Agriculture
- **Ms. Allegra Piazza**, Lead, Agricultural Early Warning Systems, DevelopMetrics
- **Dr. Stephen W. Njoka, OGW**, Chief Research Scientist, KALRO
- **Mr. Moses Mwesigwa**, Director, DLCO-EA
- **Prof. Kevin McDonnell**, Professor Crop Science & Biosystems Engineering, University College Dublin
- **Ms. Brenda Lazarus**, Food Security and Early Warning Economist, FAO
- **Dr. Daniel Karanja**, Deputy Director, Research and Innovation, CABI

Key Messages

- Agricultural early warning systems enable farmers to anticipate and manage the effects of natural disasters, pests and disease outbreaks.
- Recent technological advancements and innovations such as remote sensing, satellite imagery, weather forecasting models, and data analytics have significantly enhanced the accuracy and efficiency of early warning systems.
- Data sharing and simplification into local languages form key success factors for agricultural early warning systems.
- Indigenous knowledge can complement early warning systems if harnessed and incorporated into existing models.

Session

The session focused on how early warning systems can aid farmers to prepare for and mitigate the impact of natural disasters, pest and disease outbreaks, and other challenges including current technical and policy gaps.

It emerged that the main challenges affecting early warning systems in many African countries include stringent legislation on some useful technologies such as drones; the responsive nature to crisis as opposed to preventive measures which is more cost-effective; language barriers; limited funding in early warning systems; low infrastructure capacity; and poor implementation of early warning data. The session noted the need to increase funding to support early warning systems in Africa.

Speakers recognized that some African countries have made strides in application of technology such as drones to mitigate migratory pests especially locusts and quelea birds.

It was noted that several initiatives by different agencies exist such as the FAO collaboration with schools in arid and semi-arid areas to disseminate information on early warning systems to learners.

Recommendations

- Preventive approaches to be enhanced through early, timely alerts and information sharing instead of adopting responsive angle.
- Improve infrastructure and mobile communication networks in rural areas to ease farmers' access to information.
- Build partnerships with local leaders and media who have a strong voice in the communities to disseminate early warning systems data
- Governments to put in place facilitative policies regarding use of early warning system technologies such as drones.
- Benchmark with other countries on the continents on working technologies such as the use of Artificial Intelligence.

Day 3 Gallery

> ***The discussions and technology showcase during ACAT clearly demonstrated that technologies have the potential to deliver transformative agriculture to the continent. They not only improve crop yields, reduce the risk of crop failure, and result in an increase in farmer incomes, but also create new opportunities for farmers due to their robustness to adapt to different agroecological zones.***
>
> **Prof. Aggrey Ambali**
> Chair, AATF Board of Trustees

Day 4: Nutrition Sensitive Agriculture

Plenary: Scaling up Nutrition Sensitive Agriculture

Speakers

- **Dr. Emmanuel Okogbenin**, Director of Program Development and Commercialization, AATF
- **Ms. Maureen Munjua**, Country Representative, Kenya, Tanager
- **Ms. Sithembile Mwamakamaba**, Director, Policy Research and Analysis, FANPRAN
- **Dr. Edidah Ampaire**, Senior Programme Officer, IDRC
- **Ms. Ruth Okowa**, Country Director, Kenya, GAIN
- **Prof. Jane Ambuko-Lukhachi**, Associate Professor, UON
- **Mr. Jean-Claude Rubyogo**, Director, PABRA
- **Dr. Jane Ininda**, Head of Seed Research and Systems Development, AGRA
- **Ms. Tendai Gunda**, Regional Representative, Anglophone Africa, Scaling Up Nutrition

Key Messages

- Effective tailored engagement of every stakeholder in the value chain is critical for scaling nutrition technologies.
- Technology developers, farmers, traders, and consumers need to establish a common value for mutual benefit to invest and scale out nutrition-sensitive technologies and products.
- A strong high-level convenor, such as the president or minister, is critical to propel discussions around nutrition-sensitive agriculture .

Session

This session focused on the importance of nutrition-sensitive agriculture (NSA) in reducing food insecurity. Vulnerable groups such as women, children, and youth can meet their daily nutritional needs for healthy living while increasing household incomes. It emerged that women and children are most vulnerable to malnutrition. The panelists noted that access to and adoption of biofortified foods has not been given adequate attention by many African countries. Speakers noted that the inadequate biofortified food crop seed system is affecting farmer access to nutrient-dense varieties such as iron-rich beans.

> *"There is a need to identify a niche for nutrient-rich crops to promote the adoption of nutrient-dense food products to improve nutrition and increase incomes.*
> **Dr. Jane Ininda, AGRA**

Session Sponsored by:

PABRA 25
Beans for impact and nutrition in Africa
1996-2022

Taxation regimes and food safety protocols for fresh foods were noted as a hinderance to cross-border trade of nutrition-sensitive commodities.

The session noted that initiatives such as incorporating fresh fruit juice in school feeding programs could improve nutrition and establish new product markets and incomes for farmers.

Speakers called for gender inclusion of male and female farmers in the design, development, and dissemination of the technologies.

Recommendations

- Governments to harmonize taxation regimes and food safety protocols for fresh foods to enhance cross-border trade of nutrition-sensitive commodities.
- Technology developers to adopt a family/household approach to developing, disseminating, and promoting nutrition-sensitive technologies.
- Government to form cross-sector and multi-sectoral partnerships to drive financing and technical support for nutrition sensitive technologies.

"Nutrition matters need to be escalated to decision makers at the top most office to ensure it gains the requisite attention.

Ms Maureen Munjua, Country representative, Tanager, Kenya

Technical Interactive Panel 7: Urban and Peri-Urban Agriculture

80 percent of the world's food is consumed in Urban Centres hence why we cannot ignore the importance of Urban and Peri-Urban Agriculture.
Mr. Henry Gordon-Smith, CEO Agritecture, USA

Speakers

- **Ms. Sylvia Horemans**, Member, BOT, AATF & CEO, Kamano Seed
- **Mr. Henry Gordon-Smith**, Founder & Chief Executive Officer, Agritecture
- **Prof. Margaret Gill**, Member, BOT AATF & Emeritus Professor,University of Aberdeen
- **Ms. Renalda May**, Founder, Renie Fresh

Session

This session explored the potential benefits of Urban and Peri-urban agriculture (UPA) in promoting food security, nutrition, income, and environmental sustainability including prospects and investment opportunities in Africa. Panelists noted that UPA offers a fundamental strategy for building the resilience of a city's food supply given that 55% of the world's population resides in urban areas.

Key Messages

- According to the United Nations, 68% of the world's population will be living in urban areas by 2050, and around 90% of this increase will occur in small cities and towns in Africa and Asia.
- The impact of global trends in population increase and urbanization is increasing food insecurity and malnutrition calling for stable food production, shorter and simplified food supply and distribution chains.
- Urban and peri-urban agriculture (UPA) is increasingly becoming a solution adopted by urban dwellers to address food security needs.

The rural-urban migration translates to a higher demand for food daily. It was noted that some of the farming technologies include greenhouse production, vertical farming, aquaponics and hydroponics.

It emerged that UPA relieves farmers of excessive transportation costs as the food supply chain is reduced noting urban center markets are bigger than rural ones. Other benefits include greening of cities as well as creative recycling of urban waste. The UPA farmers can also access specialized markets such as restaurants in town. Some of the bottlenecks noted by speakers included stringent laws and policies that control UPA; shrinking arable land for crop or livestock farming; and limited knowledge on best practices for UPA such as vertical agriculture. Speakers noted opportunities to include agritourism; agriculture training centers for youth and learners; and creation of food banking centers with local governments and non-state actors.

Recommendations

- County governments to lift bans or review the stringent policies and laws on urban farming to encourage growth in UPA.
- Local governments and the private sector should facilitate farmers' training on novel agriculture technologies, including hydroponics and vertical farming, in limited space.
- Develop agriculture farms as training centers for Youth, mainly in urban areas in Africa, to entice them to delve into Agriculture for income.
- Build collaboration between UPA farmers, governments, and nonprofits to eliminate hunger through food banking.

Technical Interactive Panel 8: Agro-processing

Speakers

- **Mr. Norman Mudibo**, Media, MC & PR Advisor
- **Ms. Sylvia Horemans**, Member, BOT, AATF & CEO, Kamano Seed
- **Mr. Olapade Damilola Blessing**, Head, Agricultural Value Chains, Psaltry International
- **Dr. Abass Adebayo**, Coordinator, Cassava Compact, TAAT
- **Ms. Dorah Momanyi**, Founder, Nutritious Agriculture Network
- **Ms. Renalda Mlay**, Founder, Renie Fresh
- **Ms. Oluwaseun Sangoleye**, CEO, Baby Grubz

Session

This session focused on the latest insights on trends, innovations, and best practices in agro-processing and value addition to optimize production, enhance competitiveness, maximize profits, and contribute to improved nutritional outcomes. The panel noted the importance of agro-processing in enhancing the value of agricultural products while effectively managing post-harvest losses and addressing food insecurity and malnutrition. The session noted that the emergence of a vibrant and competitive sector will be key for agro-processing to achieve its full potential.

Speakers noted some barriers to agro-processing to include access to credit and capital, regulatory requirements, quality of raw material, availability of appropriate technology, standardization of processes, prejudice against women and youth, acceptance of locally made products and access to knowledge on markets and consumer knowledge behaviour. It also emerged that, substandard practices undermine profit margins and hinder adoption. Lack of policies to protect young local agro-processors from unfair competition reduces chances of business survival beyond their formative years.

Key Messages

- Africa must expand its agro-processing capacity and industrialize at scale while ensuring women and youth participation
- Food safety controls are required across the value chain and they should start during production level
- Agro processing has the potential to fuel economic growth in African countries that are heavily reliant on agriculture.

"It is key for an agro-processor to assess the supply and demand of the raw materials to know the salable quantities that determine the scale of production.

Dr. Abass Adebayo, Coordinator, Cassava Compact, TAAT

Recommendations

- Africa to prioritize and expand agro-processing capacity through investments in industrialization and installation of efficient equipment.
- Countries to encourage exploration of locally available solutions, including portable agro-processing technologies such as Nigeria's mobile cassava processing plants.
- Encourage friendly tax incentives to encourage access to finance by young agro-processors to boost their businesses

Technical Interactive Panel 9: Innovation for Nutrition Sensitive Agriculture

Key Messages

- Nutrition-sensitive agriculture is essential in addressing hidden hunger and achieving the end goal of food security and improved nutrition outcomes.
- Biotechnology can contribute to addressing deficiencies and enhancing the overall nutritional quality of foods through biofortified crops and increasing the availability and affordability of nutritious foods.
- Effective behavior change communication can encourage vulnerable populations to adopt diversified and nutritious diets.

> *Nutrition-sensitive agriculture is not an option. It is the future to delivering quality foods and sustainably breaking down all the barriers and challenges to these nutritious foods in rural and urban settings.*
> **Dr. Mel Oluoch, Director, Strategic Partnerships, Sasakawa**

Speakers

- **Dr. Mel Oluoch**, Director, Strategic Partnerships, SASAKAWA
- **Dr. Ashish Saxena**, Division Chief, Input Systems, USAID Bureau for Resilience, Environment, and Food Security
- **Ms. Tendai Gunda**, Regional Representative, Anglophone Africa, Scaling Up Nutrition
- **Dr. Eileen Nchanji**, Gender and Social Inclusion Expert, Bioversity International and CIAT
- **Dr. Abdelbagi Ismail**, Regional Director, IRRI-Africa
- **Dr. Catherine Macharia-Mutie**, Deputy Team Leader, Tanager
- **Mr. Matthias Charles Yabe**, CEO, AkoFresh
- **Mr. Jonathan Bamber**, Director, Sweet Tunda

Session

The session focused on innovations in food production, post-harvest loss management, processing, and distribution. It emerged that consumer perceptions of new or unfamiliar nutritious dense food influenced adoption of diversified diets. Speakers noted that for social behaviour change, deeper historical understanding of the communities was needed.

The session urged stakeholders to collaborate with ministries to conduct social behavior change noting the government was the most influential stakeholder to work with communities, including school going children as first line consumers of these foods.

The panel noted biofortification as one of the low-cost and sustainable innovations that is effective in providing micronutrients (such as zinc, copper) to the African population that may have limited access to diverse diets. Speakers recommended promotion of orphan crops and encouraged production of easy to prepare foods that are nutritious and not highly processed.

The session noted that food safety is key in the preservation of micronutrients during the post-harvest process. Existing innovations include solar powered cold storage technologies which can extend harvests for up to 21 days and reduce losses. Traditional post-harvest preservation methods such as drying were encouraged especially in small scale farming.

Recommendations

- Food industry players should not ignore the taste aspect of food when producing nutritious, dense food.
- Prioritise consumer education and awareness campaigns on nutrition-sensitive agriculture, working closely with governments so consumers do not resist change.
- Promote orphan crops such as finger millet, indigenous vegetables, and cassava. These crops are indigenous and often grown for subsistence use yet are highly rich in nutritional profile and well adapted to suboptimal growing conditions.

Day 4 Gallery









The journey towards revolutionizing agriculture through technology is a collective endeavor, guided by a shared vision and purpose. ACAT is providing an opportunity for stakeholders, who are keen on progressing the continent's socio-economic development, food and nutrition security through the development and commercialization of innovative agricultural technologies, to convene, deliberate and come up with solutions to the challenges they face.

Dr. Canisius Kanangire,
Executive Director, AATF

Farmer Testimonial

> ***The growing of WEMA maize varieties has transformed my household. I now have a better house and can afford fees for my child in a boarding school.***
>
> **Doreen Atemo, Farmer - Kakamega Kenya**

My name is Doreen Atemo. I am maize farmer from Kakamega County, Kenya. I used to farm but wasn't doing it as effectively as I should have. That changed when I joined WEREFANET and was introduced to good farming practices. They guided me on the best improved maize varieties for my farm, and I adopted the drought-tolerant Water Efficient Maize for Africa (WEMA) variety, known as DroughtTego. This variety performed well. I harvested and sold part of the yield, using the proceeds to build a new house for my family. I also enrolled my child, who is in grade seven, in a good boarding school. I've achieved all this thanks to the TAAT project and WEREFANET. My prayer is for the project to go on in the years to come, because this far I have come, I know in the future I can even buy a car through the TAAT project to access more technologies that can revolutionize and transform my farming and livelihood.

Day 5: Food Systems Development

Technical Interactive Panel 10: Food to Market

Speakers

- **Dr. Tshilidzi Madzivhandila**, Head of Missions & Chief Executive Officer, FANRPAN
- **Ms. Hazel Awino**, Chief Executive Officer, Agri Innovation Hub, Kenya
- **Ms. Eunice Mwongera**, Business Executive, Hillside Green Growers & Exporters
- **Ms. Pauline Otila**, Managing Director, Apiculture Venture Limited
- **Mr. Shey R. Tata**, Member, BOT,AATF & International Development Consultant
- **Mr. Michael Waciira**, Founder, Umoja Farmers' Agri-hub
- **Mr. Julius Methuselah Nyabicha**, Project Manager, Cereal Growers Association

Key Messages

- Enhanced access to markets incentivizes agricultural production and reduces post-harvest losses by providing opportunities for viable prices, enhanced farm incomes, and improved livelihoods.
- Strategies to promote sustainable and equitable growth in food systems will facilitate inclusive market participation and trade, especially for smallholder farmers.
- Producers and agro-processors need to belong to associations that can advocate for their progress.

Session

The panel focused on promoting sustainable and equitable growth in the food market in Africa with special attention on improving the competitiveness of smallholder farmers in the market.

The session noted that inadequately developed markets, dysfunctional payment systems, exploitation by middlemen, and underdeveloped infrastructures were key hinderances to development of successful markets for agricultural products. These challenges create an unfavorable business and agricultural environment for farmers and agribusinesses. Farm to market challenges across Africa revolve around aggregation, transportation, quality, market infrastructure, value addition, access to education, farmer education, different understanding on definitions and standardization of processes.

> *"Gearing towards value addition like pre-packing at the farm level will create better value including jobs, reuse of the by-products, and cost reduction for better market competitiveness.*
> **Ms. Eunice Mwongera, Business Executive, Hillside Green Growers & Exporters**

Participants called for value addition at the farmer level including pre-packing that will create jobs, encourage reuse of the by-products, and reduce costs for enhanced market competitiveness. The sessions called for linkage to Africans in the diaspora who may have access to resources to advance markets and build agribusinesses in Africa. Speakers called for innovative financial inclusion models for farmers, to address monetary challenges like the RACE Financial Inclusion Unit Fund in Bangladesh.

The session also noted it was key to leverage information technology including digitization to address gaps in agri-markets citing AgriSoko application by Agri Innovation Hub. It was noted that networking and formation of smallholder farmer unions and service centers could support market access such as the Umoja Farmers Agrihub.

"The best way to provide market information to smallholder farmers is to leverage information technology like the AgriSoko application by Agri Innovation Hub that gives access to services like training on best practices, insurance, loans, market intelligence, and aggregation to potato farmers in Narok.

Ms. Hazel Awino, Chief Executive Officer, Agri Innovation Hub, Kenya

Recommendations

- Promote mechanization and digitization to attract youth to the agriculture sector.
- Address the market information gaps through farmer service centers, unions and leveraging information technology, including digitization
- Benchmark with working models to help smallholder farmers to access better market services and finance
- Train youth in specialized areas such as harvesting and equip them with the skills for quality management.

Closing Plenary: Investment in Innovation

Speakers

- **Ms. Yvonne Okwara**, News Anchor, Citizen TV
- **Dr Munyaradzi Jonga**, Seeds Production Manager, AATF
- **Dr. Laila Lokosang**, Senior Technical Adviser, African Union
- **Ms. Seema Gohil**, Director, Digi-Farm
- **Ms. Elizabeth Gulugulu**, Program Project Manager, African Youth Initiative on Climate Change
- **Dr. Pascaline Sanginga**, Regional Sector Manager, Africa Development Bank Group(AfDB)
- **Ms. Emmastella Gakuo**, Co-Founder & COO, Savanna Circuit
- **Dr. Canisius Kanangire**, Executive Director, AATF
- **Dr. Aggrey Ambali**, Head of Science, Technology and Innovation Hub (NSTIH) -AUDA/NEPAD and Chair, Board of Trustees, AATF
- **H.E. Dr. Goodluck Ebele Azikiwe Jonathan**, Former President, Federal Republic of Nigeria
- **Hon. Mithika Linturi**, Cabinet Secretary, Ministry of Agriculture and Livestock Development, Kenya

Key Messages

- The most reliable measure in validating technologies are the national governments, national research agencies, academia, farmers and farmer organizations, private sector, and other food value chain actors.
- Regional economic communities and continental bodies including AUC and AUDA-NEPAP are key allies towards shortening turn-around time for learning, iteration and advocating for political support for agricultural technologies and creating an enabling environment for innovation to thrive.
- Increased investments in innovative solutions are needed to realize the potential of Agtech and innovation in Africa.

Session

To close the first ACAT session, government officials, industry leaders, innovators, farmers, and other actors came together to make commitments and provide the path forward for realizing the continent's agtech and innovation potential. The session outlined concrete steps needed to increase investments in innovative solutions to address the challenges facing agriculture and food systems. It examined the current state of innovation in agriculture, the opportunities, and challenges of investing in innovation and how actors can work collaboratively to create an enabling environment for innovation to thrive.

The session noted that the less friendly regulatory environment is affecting funding for scaling of technologies. It also emerged that private sector engagement is limited owing to the challenging operational environment and insufficient incentives. Speakers also noted that the full potential of biotechnology has not been fully exploited because of prohibitive regulatory environments and resistance fueled by disinformation.

Recommendations

- Subsequent ACAT forums should be hosted under the auspices of the African Union to ensure so that the outcomes and policy recommendations of ACAT are included in the AU Policy and gain traction.
- AATF and partners to collaborate with the AU Department of Agriculture and Environmental Sustainability, especially considering the risks and impacts of world crises such as COVID-19, and other global crises like the Ukraine war.
- The 2nd ACAT to be hosted in Kigali, Rwanda from 19 - 23 May, 2025 to take stock of the progress made against the commitments made in the Inaugural ACAT.

"Institutions of higher learning need to support their students to attend high-level conferences as it is a great platform for knowledge gain in the agricultural sector.
Ms. Elizabeth Gulugulu, Program, Project Manager, African Youth Initiative on Climate Change

Closing Ceremony

Speakers noted that ACAT had established a foundation for high-level discussions around agricultural technologies in Africa. It was recommended that ACAT 2, planned for 2025 in Kigali, Rwanda, should be hosted under the auspices of the African Union to give it continental ownership. In this manner, the ACAT outcomes and policy recommendations will be included in the AU Policy and gain traction. ACAT will also explore inter-governmental support, especially at the high-level policy dialogue on science technology and innovation where food, nutrition security, and agriculture is the main focus. An appeal for more investors, especially those operating in Africa, and those committed to agricultural innovation and technology transfer to join hands with AATF in the agricultural technology transfer journey was made.

An appeal was also made towards sustaining ACAT as a one-stop-shop for showcasing science technology and innovation in agriculture on the continent while driving change for realization of an enabling and supportive environment. ACAT was encouraged to also leverage the USD10 million dedicated to boosting and accelerating the private investment in the Food Systems Transformation as part of the African Common Position on Food Systems.

The session also recommended that deliberations of the inaugural ACAT be furthered at the China-Africa Agriculture Forum on Science Technology and Innovation. Recommendations of ACAT should form part of discussions during the AU convened specialized working group on agriculture, water, and the environment.

AATF was encouraged to focus on developing programmes on smart and resilient agriculture that emphasize indigenous food systems as an intervention for local markets. It was also recommended that AATF and partners seek close collaboration with the AU Department of Agriculture and Environmental Sustainability, especially considering the risks and impacts of world crises such as COVID-19, the Ukraine war, and other global trends. This consideration should be made particularly with a focus on how technology and digitization can be entrenched in agriculture for sustainability.

The youth were encouraged to be proactive in seeking information to tap into available opportunities around agricultural innovations. Youth must be deliberately aware of the rights, laws, regulations, and policies governing STI and be accountable to them. Stakeholders were encouraged to enhance youth involvement in advancing STI through exposure, sharing learning opportunities, and making financing accessible to them. It was noted that establishing a youth networking platform would enhance knowledge and experience sharing geared towards advancing agricultural technology.

Day 5 Gallery

Strategic Dialogues on Agricultural Technology in Africa (SDATA)

Ministerial Roundtable: Cultivating Sustainable Growth

Key Messages

- African governments have developed policies, institutions and strategies to spearhead integration of STI in national and continental sustainable economic development plans.
- Development and use of agricultural biotechnology including genetic modification and gene editing can increase agricultural productivity in Africa, address the perennial food shortages and reduce food imports.
- Core consideration of smallholder farmers and skillful collaboration with the private sector will positively contribute to food and nutrition security attainment.

Speakers

- **Hon. Mithika Linturi**, Cabinet Secretary, Ministry of Agriculture, Kenya
- **Hon. Frank Tumwebaze**, Ministry of Agriculture Animal Industry and Fisheries, Uganda
- **Prof. Adolf Mkenda**, Ministry of Education, Science & Technology, Tanzania
- **Mr. Emmanuel Minari**, Policy and Programme Advisor, Ministry of Agriculture and Food Security, South Sudan
- **Dr. Ousmane Badiane**, Founder and Executive Chairperson, AKADEMIYA2063

Session

This session focused on promoting sustainable agriculture and building the support needed for STI. Governments were lauded for developing policies, institutions, and strategies for integration of STI into economic development agendas. It was noted that Africa still suffers low farm yields as it also emerged that there are some bottlenecks hindering progress of STI in the agriculture sector.

Panelists urged African countries to embrace agricultural biotechnology including genetic modification and gene editing to increase productivity and to address the perennial food shortages. It was noted that the net effect would be a reduction in food imports.

Governments were also urged to put in place appropriate regulatory frameworks to test and vet imported technologies before adapting them. The roundtable encouraged African countries to benchmark with

such as Israel that are using advanced technologies including irrigation systems and land management practices to improve agriculture. Speakers noted Africa's high food imports with countries like South Sudan spending up to 40% of their GDP.

Recommendations

- Incorporate traditional breeding methods and programs into new programmes.
- Invest more in science and research for development of crop varieties that work best.
- Skillfully and deliberately collaborate with private sector as investors in Agritech to support agriculture transformation.
- The African Union and country leadership to commit to taking proactive steps STI in agriculture.

"There is need to create an enabling environment for private sector investment in the agriculture technology space.

Dr. Ousmane Badiane, Founder and Executive Chairperson, AKADEMIYA 2063

"The biggest issue facing agriculture in Africa is low yield, which is why we have to keep importing food to supplement our yield. To improve yields, we need to invest in science so that we export more than we import.

Prof. Adolf Mkenda, Minister of Education, Science and Technology in Tanzania

Youth Dialogue: Fostering the Next Generation

Speakers

- **Dr. Joseph Macharia**, Founder, Mkulima Young
- **Mr. Matthias Charles Yabe**, CEO, AkoFresh
- **Ms. Vivianne Meta**, Managing Director, LocateIT
- **Ms. Zola Magada**, Global Fellows Coordinator, Alliance for Science
- **Mr. Kenneth Obayuwana**, National Director, IAAS

Session

The Youth Dialogue focused on fostering youth engagement, innovation, and leadership within the sector. The panel emphasized the need for early inclusion of youth in agricultural dialogues. The session noted that the youth largely frowned upon agriculture and hence the importance of early conversations on how to encourage and incentivise them to participate.

Key Messages

- The youth are drivers of the agriculture journey towards adapting to changing societal expectations, market dynamics and climate change
- Youth should be encouraged to participate in agriculture as viable career and business opportunities
- Investing in young farmers and entrepreneurs through mentorship, access to financing and tax incentives will support entry and growth in agribusiness.

Speakers proposed that agriculture should be presented to youth as a viable careers and businesses. The youth also stated that they needed mentorship and investment support to implement their agricultural ideas and innovations. Speakers urged the youth to look at agriculture in its wider sense and undertake other related activities including value addition, selling of farm produce and the supply of farm inputs among others.

"The youth need access to tools and mentorship. This will help them scale up their agriculture ideas.
Matthias Charles, CEO AkoFresh

Recommendations

- Celebrate and recognize youth that excel in agriculture to attract and encourage others.
- Provide practical training on agriculture beyond theory and empower the youth with entrepreneurial skills.
- Governments to consider special incentives for youth in agriculture including on tax and financial investment.

"The solutions to help young farmers in rural areas are available, but we need to bridge the communication gap through media such as radio.
Zola Magada, Global Fellows Coordinator, Alliance for Science.

Farmers Dialogue: Repositioning Producers

Speakers

- **Mr. Dziko Chatata**, Founder, Thanthwe Farms
- **Ms. Margaret Munene**, CEO, Palmhouse Dairies
- **Mr. Wiledio Naboho**, Farmer, Burkina Faso
- **Mr. Daniel Magondu**, Farmer, Society for Biotech Farmers of Kenya
- **Mr. Paul Fatch**, Chairperson, AFAAS
- **Mr. Anthony Kioko**, Chief Executive Officer, Cereal Growers Association.

Session

The session focused on repositioning farmers and putting them at the center of discussions on technology development and adoption. Farmers pointed to key causes of low technology adoption in Africa as being lack of co-creation and co-development resulting in inappropriate strategies to solve farmer challenges, lack of capacity building and knowledge transfer given the inadequacy of the extension services, and dissemination methods and pricing. Other challenges noted included effects of climate change, tropical crop diseases and pests, and the prohibitive cost of technologies with farmers asking researchers for clean planting materials.

Key Messages

- Farmers are at the centre of Africa's economic growth; crucial to achieving sustainable agricultural development and rural transformation.
- Access to technologies and an enabling business environment – including resources, markets, and knowledge - will enhance the productivity and livelihoods of farmers.
- Involving farmers as key stakeholders in policy and decision-making processes will lead to effective design and implementation.
- Extension service providers are key contributors to knowledge transfer and adoption of technologies and thus require continuous capacity strengthening and training.

"Pricing of technology must make economic sense to farmers for it to be successful.

Ms. Margaret Munene, CEO, Palm house Dairies

The farmers asked researchers to put farmers at the centre of designing agricultural interventions to develop tailor-made solutions addressing their specific challenges. They advised that key to technology adoption should be consideration for return-on-investment for the technologies to make sense to farmers. Accessibility to markets was noted as critical to ensure that farmers produce for the market and not produce to market.

"Farmers should produce for the market not produce to market.

Mr. Anthony Kioko, CEO, CGA

Recommendations

- Countries to enhance knowledge transfer for technology adoption by investing in capacity building and training of extension service providers and creation of call centers.
- Technologies should focus on value addition to ensure return on investment in farming.
- Countries to create enabling policies and systems for farmers to access technologies for management of productivity limiting challenges including pests and diseases.

Researchers' Dialogue: Accelerating Science, Technology and Innovation

Speakers

- **Dr. Martin Ongol**, Acting Executive Secretary, UNCST
- **Prof. Richard Oduor**, Registrar, Research, Kenyatta University/ Chair, KUBICO
- **Dr. Tshilidzi Madzivhandila**, Head of Missions & Chief Executive Officer, FANPRAN
- **Dr. Cliff Sibusiso Dlamini**, Executive Director, CCARDESA
- **Dr. Kamil Witek**, Group Leader, 2Blades
- **Ms. Juneweenex Mbuthia**, Economic Researcher, IFPRI

"Researchers face a daunting restoration task because ecosystems that support agriculture have collapsed.
Dr. Cliff Sibusiso Dlamini, Executive Director, CCARDESA

Key Messages

- Indigenous knowledge and the unique nature of the African situation should be acknowledged and embraced to enable development of technologies that suit the context.
- Multi-disciplinary approaches to research and co-creation with stakeholders including investors will help generate wholesome and sustainable solutions.
- Incoherent policy frameworks lead to a disconnect in science-based evidence and policy formulation and application in agricultural research and development.
- Partnerships built on trust and mutual interest between researchers, policymakers, and other key stakeholders will accelerate agricultural innovation.

Session

The session focused on accelerating STI in the agricultural sector through knowledge exchange and collaboration, sharing cutting-edge research methodologies, technological advancements, and emerging trends while exploring interdisciplinary approaches. Speakers noted that continuous advancement and utilization of current and emerging technologies enhances agricultural productivity, sustainability, and resilience. Key concerns by the researchers included the low involvement of industry in financing research which affects the rate of generation and dissemination of new technologies. The researchers indicated readiness to explore opportunities including signing non-disclosure agreements to build confidence with industry and accelerate technology development and dissemination.

The researchers noted the need for multi-disciplinary approaches to research including co-creation with other stakeholders to generate wholesome sustainable solutions. They invited policy makers to engage in meaningful discussions with stakeholders to eliminate the disconnect between science-based evidence, policy formulation and application of the results. The researchers called for Africa-focused funding models to support development of situation specific technologies that acknowledge indigenous knowledge and the unique nature of Africa.

Recommendations

- Researchers and industry to work out a system including signing non-disclosure agreements to encourage investment in research and promote development of problem based agricultural solutions.
- Country governments and policy makers to address the incoherent policy frameworks and engage stakeholders including researchers in formulation processes.
- Research institutions to encourage publication of negative results as part of knowledge sharing and to trigger further study.

Private Sector Dialogue: Positioning the Private Sector for Sustainable Agricultural Innovation

Speakers

- **Mr. Mark Edge**, Director, Seeds & Traits Business Development for LMICs, Bayer
- **Ms. Nkiru Okpareke**, Board Chair, Agridrive Ltd
- **Mr. Tony Gathungu**, Syngenta Foundation
- **Mr. Duncan Ochieng**, Executive Officer, Seed Trade Association of Kenya (STAK)
- **Mr. Andy Watt**, Managing Director, Quality Basic Seed
- **Mr. Joseph Mwangangi**, Deputy CEO, AFAP
- **Ms. Emmastella Gakuo**, Co-Founder & COO, Savanna Circuit

Session

The session focused on the role of the private sector in driving agricultural innovation, investment, and market-driven solutions. Panelists identified dysfunctional partnerships, limited access to finance and policy related bottlenecks as the key hinderances to effective private sector engagement in development and commercialization of agricultural technologies. The panelists referenced inadequate collaboration between businesses in the agricultural sector as a challenge to their success. They noted that a number of public-private partnerships did not deliver value to all parties such as improved sales for the private sector. The Dialogue indicated the need for collaboration between seed companies and researchers for best solutions to farmers. They also noted lack of trust among private sector players exacerbated by the lack of a common platform for solution creation.

The session advocated for implementation of bundled financial solutions at the smallholder farmer level noting that risk aversion among banks and stringent financial requirements hamper financing for farmers. Participants called for progressive policies that support agribusinesses and facilitate evidence-based decision-making especially regulatory frameworks and taxation regimes.

Key Messages

- Market-led research and technology development is critical to driving sustainable development.
- Incentivising the private sector through public investment is critical to driving Africa's economic development.
- Business models that prioritize sustainability, inclusivity, and resilience can contribute to the long-term success of the agriculture sector.
- Data-driven policies will facilitate evidence-based decision-making and incentivize agribusinesses.

Recommendations

- Create a private sector dialogue platform or forum to enhance collaborations and partnerships and build trust.
- Scale up bundled financial solutions for smallholders including giving buyers access to insurance and financing for seed and security for further borrowing.
- Investor and funding organizations to build their understanding of agribusiness and develop proper frameworks and mechanisms to provide better support beyond financial support to agricultural businesses.
- Enhance knowledge and information sharing including feedback and data with government, financial institutions, farmers and other actors to support relevant actions and policies.

"The private sector can contribute to farmer development through better and compelling innovation, market-driven solutions, economically viable products and localized solutions.
Mr. Mark Edge, Director, Seeds & Traits Business Development for LMICs, Bayer

Gender Dialogue: Cultivating Inclusivity

Speakers

- **Ms. Eunice Mwongera**, CEO & Co-Founder, Hillside Green Growers
- **Mr. Emmanuel Babatunde**, Lead Strategist, FutuX Agri-consult
- **Dr. Mary Thamari**, Gender Expert, Tanager
- **Ms. Molly Abende**, Production Manager, Burton and Bamber Co Ltd (SweetTunda)
- **Mr. Lucas Ogutu**, Founder, LUKF Eco-Farm Enterprise

Session

The session focused on sharing best practices, success stories, and lessons learned in promoting gender-responsive approaches in agriculture, while identifying strategies for closing gender gaps and promoting women's leadership in agriculture. The session noted there is unconscious bias against women in many sectors, with deep roots in society, often ingrained in cultural norms, policies, and institutions.

Key Messages

- Gender equality and women's empowerment are essential for inclusive and sustainable agricultural development..
- Structural and institutional barriers affect effective promotion of gender-responsive policies, programs, and practices to unlock the potential of women in agriculture and contribute to improved food security and rural livelihoods.
- Collaboration among stakeholders is crucial for addressing gender gaps, promoting women's leadership, and achieving equality in the agricultural sector.

> *Gender is not about women. Women are only mentioned more because of the historical exclusion and injustices that we have faced. We should be aware of the framing of the gender question.*
> **Dr. Mary Thamari, Gender Expert, Tanager**

The dialogue noted that gender is not about women, but they are mentioned more because of the historical exclusion and injustices they face.

It emerged that there is intimidation and stereotypes against women, especially from the social construct and family levels. Men were encouraged to be conscious of their biases towards women at the workplace including in hiring and promotion. Women were asked to educate men on the empowerment programs noting some do not understand the objectives and focus.

> *Gender inclusivity is about creating a society where everyone has an opportunity to reach their full potential regardless of their genders yet it is rarely reflected in our day-to-day activities.*
> **Mr. Emmanuel Babatunde, Lead Strategist, FutuX Agri-consult**

Recommendations

- Gender inclusion conversations should be held across the value chain to create solutions that are inclusive.
- Case studies that showcase success and the value of gender equality in enhancing agricultural productivity should be promoted to advocate for inclusion.
- Mechanisms need to be structured to address barriers to women's access to resources such as finances, land, and education.
- Organisations must commit to enshrine gender equality in their policies.

Joint Dialogues Closing Session: Advancing Sustainable Agriculture Roundtable

Speakers

- **Mr. Vitumbiko Chinoko**, Project Manager – OFAB, AATF
- **Mr. John Agboola**, Ambassador, Platform for Big Data in Agriculture
- **Mr. Mark Edge**, Director, Seeds & Traits Business Development for LMICs, Bayer
- **Ms. Eunice Mwongera**, Business Executive, Hillside Green Growers & Exporters
- **Mr. Emmanuel Minari**, Policy and Programme Advisor, Ministry of Agriculture and Food Security, South Sudan
- **Prof. Jane Ambuko-Lukhachi**, Associate Professor, UON
- **Dr. Joseph Macharia**, Founder, Mkulima Young
- **Margaret Awinja**, Farmer, Kenya

The ACAT closing dialogue constituting farmers, youth, women, researchers, and the private sector consolidated key emerging issues and made propositions towards transforming the agricultural sector through technological advancement.

A strong value proposition to increase youth participation through diversification in various value chains was proposed to optimize their full potential in agriculture. The government and the private sector were called upon to intentionally target and mentor youth, including providing tax breaks and exemptions in agriculture and deliberate inclusion in strategic dialogues and policymaking processes.

Governments were encouraged to provide a robust enabling and regulatory environment to promote access to productive resources, markets, information, and efficient extension services to accelerate the adoption of new agricultural technologies among farmers including restructuring extension services by digitizing operations and establishing call centers.

Researchers should also provide credible and verifiable data supporting the impact of the technologies proposed to the farmers. Technology developers should involve all stakeholders from problem conceptualization to tailor fit-for-purpose technologies. Multidisciplinary partnerships built on trust and mutual interest between researchers, policymakers and other key stakeholders would accelerate agricultural innovation.

The private sector was urged to establish business-to-business forums for collaboration and sharing ideas for mutual benefit. Financial institutions, such as the AfDB, were encouraged to provide guarantee mechanisms that mitigate risks for local financial institutions.

Leveraging on the foundations established by ACAT, it is proposed that deliberations and outcomes be pursued further in other forums including the upcoming Malabo Declaration.

Innovations Showcase

As part of the ACAT program, AATF showcased some of the high impact technologies it has developed for smallholder farmers in Africa over the years as highlighted.

Managing Drought and Pests through Breeding and Biotechnology: TELA Maize Story

The TELA Maize project is a public-private partnership coordinated by AATF and brings together the national agricultural research organisations of Ethiopia, Kenya, Mozambique, Nigeria, and South Africa; Bayer, International Maize and Wheat Improvement Center (CIMMYT), seed dealers, and farmers.

Started in 2018, the project builds on the WEMA project that sought to address the issue of drought and insect pest management through the strategic combination of conventional breeding and transgenic technologies. To date, 124 conventional drought-tolerant hybrid varieties of maize, trademarked DroughtTEGO® (TEGO®) and five transgenic TELA® insect-resistant hybrid varieties have been released to farmers through the two projects. The TEGOs, referred to as the 'Magic Seed' by farmers, are being planted in 15 African countries, while TELA® varieties have so far been commercialized in South Africa and Nigeria.

In efforts towards sustainable agriculture, food, and nutrition security for the continent, the TELA Maize project is progressing the transgenic technology

with a concentration on developing and releasing products to farmers that combine drought tolerance and resistance to stem borer and fall armyworm insect pests. The damage of insect pests is costing the continent over 20 million metric tons of maize annually enough to feed 100 million people, not to mention reducing the quality of the grain. The TELA products are delivering benefits in form of increased yield and income to farmers and have been proven to be safe to human, livestock, and the environment.

However, in many countries of Africa, policy framework hinderances are delaying approval, release, and scaling out the 38 available TELA hybrids, thus denying farmers the benefits. This bottleneck does not mirror the stated commitment by African governments to prioritize science, technology and innovation in empowering the agricultural community with the tools they need to thrive in farming and transform Africa's food systems.

From Research to Development: The Pod Borer Resistant Cowpea Experience

Pod Borer Resistant (PBR) cowpea variety has been developed through biotechnology to address low productivity challenges due to infestation by pod borer insects, especially *Maruca Vitrata (M. vitrata)*, that contributes to about 80 per cent yield loss in cowpea. For control of pod borers in cowpea, farmers in West Africa depend on heavy insecticide use to manage *Maruca* posing health risks and leading to high production costs.

The development process of high-yielding and disease-resistant varieties such as the PBR cowpea requires diverse actions by multiple partners to facilitate the operations. Communication is key to build understanding and establish positive attitudes and perceptions of the technology and to create awareness to enhance uptake of the variety. Additionally, a well-structured stewardship program ensures quality management throughout the development and release processes also contributing to accelerated and sustainable variety adoption.

The next phase is to expand the benefits of the PBR cowpea from the pilot countries to other beneficiaries in the region. This would involve catalysing the scaling of PBR cowpea in Burkina Faso, Ghana, Nigeria and to promote and deliver next-generation products dubbed the PBR Cowpea-Xtra. The PBR cowpea project demonstrates the power of the research-to- development concept as a deliberate and intentional process towards impact. The success of Bt Cowpea in Nigeria has shown how science and technology can really make the difference.

Contributing to Public Awareness, Education and Acceptance of Agricultural Biotechnology

Agricultural biotechnology has huge benefits to smallholder farmers across the globe since the first genetically modified (GM) crop was commercialised in 1996. The number of countries adopting the technology and the acreage under GM crops has continued to rise over the last almost 30 years. Despite the demonstrated benefits, agricultural biotechnology is still a contentious public issue, particularly in Africa due to several reason. Most countries do not have an enabling and facilitative environment for research and commercialisation of
GM crops. The anti-biotechnology activism has poisoned the environment with propaganda and incorrect information about genetically modified organisms. As a result, governments and private sector players have minimally invested in biotechnology because of the uncertainty of the enabling environment.

Consequently, in 2006, AATF in collaboration with like-minded stakeholders established the Open Forum on Agricultural Biotechnology (OFAB) as a platform for stakeholders in the biotechnology sector to contribute to building a facilitative enabling environment for research, development and commercialisation. OFAB brings together all actors in the science, technology, and innovation sector to contribute to creating enabling environment for biotechnology through the availing of science, and evidence-based information, policy advocacy and influencing.

OFAB operates in 10 countries including Kenya, Uganda, Tanzania, Ethiopia, Ghana, Burkina Faso, Nigeria, Malawi, Mozambique, and Rwanda. OFAB engages relevant stakeholders such as the scientists, policy makers, legislators, journalists, farmers and the public by providing credible and factual information on agricultural biotechnology to enable progressive decision making. OFAB has successfully accompanied research and commercialisation of GM crops in Kenya, Ethiopia, Nigeria, and Ghana.

Creating Impact through Seed Systems

The AATF Seed Systems Development and Commercialization Model encompasses technology development, seed production, and product commercialization processes. To effectively catalyze these processes, it is essential to have a robust enabling policy and regulatory environment, strategic partnerships, and strong stewardship These elements are fundamental in building resilient seed systems for sustainable seed supply in Africa.

The key partners include national seed authorities (NSAs), national seed trade associations (NSTAs), early generation seed suppliers, seed producers, and input distributors. Key support mechanisms include good agronomic practices and stewardship. Product licensing plays a crucial role to facilitate commercialisation.

AATF and partners have facilitated the licensing of newly developed varieties such as DroughtTEGO, StrigAway, TELA maize hybrids; Pod Borer Resistant Cowpea; and Hybrid Rice to 60, capacity enhancement through farmer trainings, setting up trials and demonstration plots, technical backstopping, product promotion, market systems support, and account management are pivotal in catalysing seed systems of newly developed varieties aimed at advancing agricultural production.

Mechanization as a Good Agronomic Practice: Impacts

Cassava is a staple for over 500 million people in Sub-Saharan Africa (SSA). Cassava varieties with high genetic yield potential have been developed and are available to farmers, but the yields are still very low. Its production is labor-intensive and predominantly manual, time-consuming, and inefficient making it unattractive to youth and women farmers. Mechanization has great potential to reduce high labor demands and costs as well as transition smallholder farmers from subsistence to commercial production. However, the adoption of mechanization is low among smallholder cassava farmers.

Public-private partnerships can play a key role in accelerating mechanization in the cassava value chain. To achieve this, governments can support the private sector by providing local project coordination, extension support, and market linkages. Equipment manufacturers can facilitate smallholder farmers access to mechanization equipment for planting, cultivation, harvesting, and loading, whereas AATF can play a role in project coordination.

A systems approach is proposed to link farmers to improved seed, agronomic support services, aggregation, and access to mechanization as a group through a shared economy. It is anticipated that linkages to agro-processing will stimulate mechanization which will eventually attract youth.

Multi-stakeholder support is crucial to build the capacity of players in the value chain to maximize the benefits of mechanization to improve market and trade opportunities. Hence commitment to make financial investments, and

the value propositions for mutual benefit to private entrepreneurs as well as farmers are paramount. Reliable product demand, access to equipment, business support, aftermarket support, experienced operators, and commercial business acumen will accelerate mechanization.

Technology Demonstrations

An array of live technology demonstrations (demos) provided an opportunity for attendees to interact directly with and test cutting-edge innovations that are shaping the future of agriculture in Africa and learn how they may be applied to their own work. The demos showcased innovations in a wide range of agricultural applications including mechanization, data, energy, agro-processing, and aquaponics among others.

Hello Tractor APP by Hello Tractor

Brief description/profile

Hello Tractor is an online-based agricultural technology company that offers convenient and affordable tractor services to farmers while providing additional income by turning them into Smart Tractors. The technology works by connecting farmers to tractor services within their locality at an affordable cost. This service is accessed through an online application https://hellotractor.com/tag/hello-tractor-app/

The challenge this technology has addressed

- Access to tractors by smallholder farmers who do not own tractors.
- High cost of acquiring mechanization services.
- Untimely preparation of land and other farm activities.
- Underutilized tractors within farmer communities.

Impact

- Smallholder farmers can access efficient tractor mechanization services at an affordable cost without owning a tractor through digital mechanization platforms.
- Smallholder farmers can own farm machinery through flexible financing models that allow them to pay weekly based on their farm operations.
- A physical hub consisting of farmers, technology providers, tractor operators, booking agents, mechanization support, each getting economic value in service provision, contributes to the success of the agri-technology.

Solar Powered Automatic Poultry Brooder by USAID-Feed the Future Programme

Brief description/profile

The automated brooder that is powered by solar, automatically controls temperature, humidity, and light to provide a warm, dry environment for chicks to grow. The unit is fitted with solar panels that tap energy from the sun, and a battery, and a charge control to automatically control the power that goes into the unit. It is also fitted with self-regulated heaters and a fan to control temperatures depending on the set parameters. The interior of the brooding unit is laced with plywood and wood shavings that absorb moisture and keeps the surface dry.

The challenge this technology has addressed

- The high cost of electricity for brooding.
- Time required for monitoring the chicks and regulating the temperatures from time to time.
- High mortality rate resulting from diseases contracted in an uncontrolled environment.
- Invasion by predators.
- Human interference that increases mortality rates.

Impact

- Smallholder farmers can collectively acquire the brooding unit and optimize its use while reducing the chicks mortality rate.
- The solar-powered system uses natural light with automatic temperature control which improves efficiency and is environmentally friendly.

Agricultural Drones Technology by CABI

Brief description/profile

The drone technology was initially developed to help in managing locust infestations. Following its success, SOPs were developed, and the technology has been scaled out into other areas including collection of data and in pest control for example the fall army worm. The drones can travel up to 100 kilometers, capturing precise data in real time and in a higher resolution compared to satellites that were used before.

The challenge this technology has addressed

- The technology is helpful in fighting mass infestations of pests and parasites over large areas up to 100-acre farms.
- The technology can be used as a pest and parasite preventive measure enabling farmers to observe large areas and look out for emerging pests.
- Solving data clarity issues as they can take high resolution data in real time to facilitate real time solutions to for fast-spreading pests and diseases.

Impact

- Long distance flights mean instant data collection is possible.
- Drones can access challenging and rough terrains.
- The drones are intelligent in a way that they can access vast spaces, have collision control, and "return home" functionality.

Vegetable Cold Storage by AkoFresh

Brief description/profile

AkoFresh cold storage technology helps farmers store their fresh food from the farm for up to 21 days. The technology is reliable as it runs on solar, and farmers can store their produce in this cold storage room for 21 days at the cost of GH 50 cents/ USD 0.032 per day.

The challenge this technology has addressed

- Food loss management by keeping harvested food fresh for up to 21 days.
- Food security - with longer storage of farm produce farmers can supply it to market at the right time.

Impact

- Common cold storage rooms powered by solar and available in remote agricultural communities in Ghana offer a service that has not been available to Ghanaian farmers before.
- The technology also offers storage for other products, including fish and vaccines.
- Its temperature-responsive system automatically controls the power needed.

From Relief to Resilience by Alliance for Science

Brief description/profile

Relief to Resilience focuses on restoration and rehabilitation of grasslands in pastoral communities and promoting storage of pastures in the form of hay to sustain animals during drought.

The technology involves provision of new grass species that are more resilient and which grow and regenerate quickly and empowers the farmers to construct barns that can be used to store the feed in the form of hay which can be used throughout the year.

The challenge this technology has addressed

- Scarcity of livestock feed especially during drought periods in pastoral communities.
- Livestock diseases minimized by reduced movement in search of pasture.

Impact

- Grassland regeneration where grass cannot grow naturally and enhancing the storage capacity of the farmers to ensure availability of feed throughout the year.
- Better disease management is enhanced through restricted animal movement as feeds can be easily accessed within a centralized location.
- Healthier animals and reduced anxiety among pastoralists.

G-SOKO - Warehouse Receipt System by Eastern Africa Grain Council

Brief description/ profile

It is an online platform that supports grain trade from farm to market. Through G-Soko, farmers are able to aggregate their produce through a certified warehouse and also access financial services using their grains as collateral. It is regulated and administered by EAGC, under the law of contract and operating under defined set of protocols, procedures, rules and regulations.

The challenge this technology has addressed

- **Market expansion:** The platform gives farmers access to a larger market across Eastern Africa.
- **Financing to farmers:** Once they are issued with a warehouse receipt, farmers can use the receipts as collateral to access financial services from partner banks.
- **Automation of supply chain:** The platform automates certified warehouses and links them to a transactional ecosystem (e-trade platform) involving all agents within the supply chain.

Impact

- The G-SOKO platform provides remote sensing for warehouse data; warehouse data visibility, transparency and collaboration; and farm to market value chain monitoring.

Mobile Solar Drier by Ministry of Agriculture Kenya-National Mechanization Center

Brief description/profile

The mobile solar dryer is made from locally available materials which make it affordable to smallholder farmers.

The dryer uses solar power to dry products such as fruits, vegetables, tubers, roots, herbs, and cereals.

The challenge this technology has addressed

High post-harvest losses associated with perishability of agricultural products.

Impact

- Shorter periods for drying products.
- Better prices and farm incomes because of efficiency in drying.
- Reduced post-harvest losses.

Soil Caravan by OCP

Brief description/profile

OCP School Lab (OSL) is a mobile soil testing laboratory that conducts analysis at no cost to the farmer. OSL uses cutting-edge technology to provide fertilizer recommendations based on the soil analysis, yield target and crop nutrition, one-on-one advice on interventions and crop nutrition recommendations to improve farming practices and enhance yields. The lab also educates the farmers on the process of soil testing, it's benefits, recommendations and how to attain healthy soils.

The challenge this technology has addressed

Low awareness on the importance of soil testing to inform on-farm decisions on best practices for better production.

Impact

- Awareness and better understanding of soil health and action to take.
- Improving fertility and productivity of soils through utilisation of the right fertilizers.
- Guaranteed affordable fertilizers for smallholder farmers.
- Promoting value chain growth and diversification leading to development of sustainable agricultural ecosystems.

ACAT 2023 Exhibitors

Exhibitions






Exhibitors


2BLADES
20 YEARS OF CROP INNOVATION


AATF
PROSPERITY THROUGH TECHNOLOGY


ACWICT
technology transforming lives


AFAAS


Alliance
Bioversity & CIAT


PABRA
Beans for impact and nutrition in Africa
1996-2022


CABI


CCARDESA


CGIAR


Crowe


CSIR Crops Research Institute
Ghana


ECOBasicSeed


IITA
Transforming African Agriculture


KALRO
Kenya Agricultural & Livestock Research Organization


KENYA PLANT HEALTH INSPECTORATE SERVICE
KEPHIS


KENYA SEED COMPANY LTD


KickStart


MEDA


REPUBLIC OF KENYA
Ministry of Agriculture &
Livestock Development


NAIROBI CITY
COUNTY


NATIONAL BIOSAFETY AUTHORITY
NBA
KENYA


QBS
QualiBasic Seed Company


TEMEC
Built on Excellence


TAAT
Technologies for African
Agricultural Transformation


USAID
FROM THE AMERICAN PEOPLE


FEED THE FUTURE
The U.S. Government's Global Hunger & Food Security Initiative


RTI
INTERNATIONAL

Ministry of Agriculture & Livestock Development

REPUBLIC OF KENYA

ACAT African Conference on Agricultural Technologies

AATF PROSPERITY THROUGH TECHNOLOGY

ACAT 2023 Joint Communique

The African Conference on Agricultural Technology (ACAT)

30th October to 3rd November 2023

In line with objective five of ACAT, a communique was developed reflecting the key observations, resolutions and call to action emanating from the conference deliberations. The Communique will serve as a basis for developing action plans for implementation to address the gaps identified during the conference.

Convened by the Government of Kenya and the African Agricultural Technology Foundation (AATF) with support from partners, the first African Conference on Agricultural Technologies (ACAT) was held at the Safari Park Hotel in Nairobi, Kenya from **October 30th to 3rd November 2023**.

1

Appendix 1: ACAT 2023 Joint Communique

HE Dr. Goodluck Jonathan,
Former President Federal Republic of Nigeria and AATF Goodwill Ambassador.

Dr. Canisius Kanangire,
Executive Director, AATF

https://www.aatf-africa.org/wp-content/uploads/2024/09/ACAT-2023-Joint-Communique-Final.pdf

Ministry of Agriculture & Livestock Development
REPUBLIC OF KENYA

ACAT
African Conference on Agricultural Technologies

AATF
PROSPERITY THROUGH TECHNOLOGY

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Convened by the Government of Kenya and the African Agricultural Technology Foundation (AATF) with support from partners, the first African Conference on Agricultural Technologies (ACAT) was held at the Safari Park Hotel in Nairobi, Kenya from **October 30th to 3rd November 2023**.

Themed "Agricultural Resilience through Innovation" the ACAT provided a platform for high-level conversations on how to reposition the development and scaling of agricultural technologies and innovations to drive economic growth and development in Africa;

Recognizing the aspirations for Africa's agricultural transformation as elaborated in the Comprehensive Africa Agriculture Development Programme (CAADP); as re-affirmed in the commitments of Malabo Declaration in 2014 and further mainstreamed in Agenda 2063, the Africa We Want, and aligned with the Science Technology and Innovation Strategy for Africa (STISA) 2024;

Acknowledging with deep concern, the low level of Africa's investment in research and development as a proportion of GDP which stands at 0.5%, way below the world average of 1.8 % and which consequently translates into a slow pace of research in critical sectors such as agriculture;

Appreciating the critical role that the agricultural sector, including livestock production plays in supporting livelihoods, industrial and economic growth across the continent;

Recalling the centrality of science and technology in driving agricultural productivity hence pivoting socio-economic development and rural transformation translating to national prosperity and Africa's collective food and nutrition security;

Further recalling the commitment made during the second Africa-wide conference on Science Technology and Innovation (STI) convened in partnership with the Government of Rwanda and AUDA-NEPAD in Kigali, Rwanda in April 2022 towards intensifying efforts on commercialization and deployment of technologies for the benefit of local communities;

Recognizing the many challenges that the youth, women, and people living with disabilities engaged in agriculture on the continent face, including limited access to opportunities, technologies and productivity enhancing resources;

Noting that Africa spends substantial amounts of financial resources importing food, yet through adoption of technologies, there is great potential for increasing productivity to reduce the import burden while also facilitating intra-Africa trade;

Equally noting the urgent need to build farmer resilience in Africa, considering that agricultural production and food systems in the continent are highly vulnerable to climate change, armed conflict, social and political instability as well as commodity-supply related shocks such as fertilizer, foreign exchange and fuel crises;

Regretting that the face of African agriculture outlook is still characterized by rudimentary traditional tools as such as the handheld hoe and the abysmally low penetration of agricultural mechanization that has stagnated at below 10% of its full potential, one of the factors discouraging the youth from engaging in agriculture;

Mindful of the lessons gained from past and present efforts and the compelling need to forge an African-centered approach to transformation through development and deployment of technological solutions adapted to local conditions;

Appreciating the good progress made on the continent in establishing policies, strategies, plans, laws, regulations and institutional arrangements to facilitate technological advancement in the agricultural sector, including slow but on-going efforts at domestication and implementation of policy instruments;

Appreciating also that substantial resources have been invested in research and development of agricultural innovations, through which multiple products and crop varieties are aligned for release in readiness for deployment and commercialization;

Concerned that in addition to the less friendly regulatory environment for technology release, the commercialization, deployment, and adoption of crop varieties is extremely slow due to limited funding for scaling of technologies;

Appreciating the important role that the private sector can play in driving agricultural research and development, which has not been fully exploited given the challenging operational environment and insufficient incentives;

Noting that the world is entering the fifth industrial revolution that will be driven by great technological innovations where quantum computing, artificial intelligence, machine learning, the Internet of Things and systems, advanced biotechnology, big data analytics, precision farming, robotics, nanotechnology, 3D printing and 5G network connectivity;

Noting also the huge potential of biotechnology innovations such as genetic modification (GM) and genome editing in enhancing agricultural production and productivity and improving the health and wealth of our people; yet the development and commercialization of related applications continues to be derailed by prohibitive regulatory environments and resistance fueled by disinformation;

We, participants of the Inaugural African Conference on Agricultural Technologies:

1. **Encourage** African governments, regional economic communities, continental bodies and organs to sustain the dialogues and actions to fast-track agricultural technology deployment while integrating STI in their respective development frameworks.
2. **Appeal** for funding commitment to support STI as affirmed in 2016 by African Heads of State in the Lagos Plan of Action to increase science and technology budgets to at least 1% of Gross Domestic Product(GDP) by 2025 and the commitment to increase the budget allocation to the agricultural sector to at least 10% of the budget in line with the *Malabo Declaration*.
3. **Call** for concerted efforts to urgently address the negative impact of those opposing novel technological innovations including genetically modified organisms (GMOs) in Africa through constructive dialogues and objective engagements, supported by scientific evidence. There is need to navigate away from defending science and instead embrace strategic and transparent communication to effectively counter dis-information.
4. **Commit** to collaborate towards identifying and engaging a critical mass of high-level agricultural technology ambassadors to serve as the voice of the continent on matters related to the development and deployment of agricultural technologies.
5. **Call** for consistent and strategic engagement of all critical stakeholders especially the private sector, farmers and gender groups towards co-creation of innovations and participatory policy making processes, technology development, commercialization and deployment of agricultural technologies.
6. **Stress** the importance of creating a functional enabling environment and sufficient incentives to facilitate research, development and commercialization of agricultural innovations and establishment of a functional private sector.
7. **Reiterate** the need for investment in functions that are critical for supporting commercialization and adoption of agricultural technologies including reinvigorating extension services, creating efficient markets and elimination of tariffs and non-tariff barriers.
8. **Urge** Africa Union member states, regional economic communities, and other key stakeholders to nurture political will to drive technological advancement in the agricultural sector towards food self-sufficiency and intensified intra-Africa trade in the context of the African Continental Free Trade Area - AfCFTA.
9. **Call upon** the AU to formally recognize and engage institutions that have excelled in the field of development and deployment of agricultural technologies as their technical arms on agricultural technology matters.
10. **Endorse** the recognition and adoption of ACAT as the continent-wide biennial forum that will showcase emerging technologies and innovations, promote networking and knowledge, to unlock access to technology and its delivery.
11. **Commit** to sustain engagement on agricultural technology in between ACAT editions through organizing and engaging in Strategic Dialogues in Agricultural Technology in Africa (SDATA) to foster discussions and appropriate actions within and across the following strategic groups: youth, ministers, researchers, private sector farmers and policy makers including ministers.
12. **Resolve** to meet again in Kigali, Rwanda from 9 - 13 June 2025 to take stock of the progress made against the commitments herein agreed to.

Finally we, ACAT participants recognize and appreciate the commitment of the former President of the Federal Republic of Nigeria, and AATF Goodwill Ambassador for Agricultural Technologies, H.E Dr. Goodluck Jonathan; and also fully appreciate President William Ruto and the people of Kenya for their hospitality and hosting the ACAT 2023 edition.

Annex 1: Conference Programme

Time	Day 1: Food Security			Day 2: Enabling Environment			Day 3: Climate-Smart Agriculture			Day 4: Nutrition-Sensitive Agriculture			Day 5: Food Systems Development
09:00 – 10:00	**DEMOS** *Zebra Lawns* **Soil Caravan** *by OCP*			08:00 – 12:00 **High-Level Opening Session:** **Morning Plenary:** Transforming Agriculture through Technology *Jambo Plenary Hall*			**DEMOS** *Zebra Lawns* **Relief to Resilience** *by Alliance for Science*			**TIP:** Urban and Peri-Urban Agriculture *Bougainvillea*	**Gender Dialogue:** Cultivating Inclusivity *Ivory*		**TIP:** Food to Market *Bougainvillea*
10:00 -10:30 TEA BREAK	**Morning Plenary:** Enabling Farm Scale Resilience through STI *Jambo Plenary Hall*						**Morning Plenary:** Mainstreaming biotechnology in African Agriculture *Jambo Plenary Hall*						
10:30 – 12:00										**Morning Plenary:** Scaling up Nutrition-sensitive Agriculture *Jambo Plenary Hall*			**Closing Plenary:** Investment in Innovation *Jambo Plenary Hall*
12:00 – 13:30 LUNCH									ACAT Partners Luncheon *Bougainvillea*				
13:30 – 14:00	**DEMOS** *Zebra Lawns*		MEDIA BRIEFING Booth	MEDIA BRIEFING *Booth*			**DEMOS** *Zebra Lawns*	MEDIA BRIEFING *Booth*		**DEMOS** *Zebra Lawns*		MEDIA BRIEFING *Booth*	
14:00 – 15:30	**Technical Interactive Panel:** Ag-tech & Digitalization *Jambo Plenary Hall*	**Technical Interactive Panel:** Mechanization *Bougainvillea*	**Youth Dialogue:** Fostering the Next Generation *Ivory*	**High-Level Plenary - Afternoon Plenary:** High-Level session – Trade, Policy & Regulatory Frameworks *Jambo Plenary Hall*			**Technical Interactive Panel:** Climate-smart Farming Solutions *Jambo Plenary Hall (Side 1)*	**Technical Interactive Panel:** Agricultural Early Warning Systems *Jambo Plenary Hall (Side 2)*	**Researchers Dialogue:** Accelerating Science, Technology, and Innovation *Ivory*	**Technical Interactive Panel:** Agro-Processing *Bougainvillea*	**Technical Interactive Panel:** Innovation for Nutrition Sensitive Agriculture *Ivory*	**Closing Dialogue:** Advancing Sustainable Agriculture Roundtable *Plenary Hall*	
15:30 – 16:00 TEA BREAK													
16:00 – 17:00			**Farmers Dialogue:** Repositioning Producers *Ivory*	**Technical Interactive Panel:** One Health *Ivory*	**Technical Interactive Panel:** Biotechnology Advances and Emerging Opportunities *Jambo Plenary Hall*	**Ministerial Dialogue:** Cultivating Sustainable Growth *Bougainvillea*			**Private Sector Dialogue:** Positioning the Private Sector for Sustainable Agricultural Innovation *Ivory*				
17:00 – 17:30													
17:30 – 18:00	**DEMOS** *Zebra Lawns*			**DEMOS** *Zebra Lawns*			**DEMOS** *Zebra Lawns*			**DEMOS** *Zebra Lawns*			
18:30				**AATF 20th Anniversary Gala Reception** *Nyama Choma Restaurant*									

SAVE THE DATE!

African Conference on Agricultural Technologies

2025 RWANDA

THEME: Nextgen Ag-tech Solutions for Africa's Farmers

June 9-13, 2025

Kigali Convention Center, Kigali, Rwanda

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