



Highlights

Science Agenda for Agriculture in Africa



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Science Agenda for Agriculture in Africa



Forum for Agricultural Research in Africa

12 Anmeda Street, Roman Ridge

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2014

Key messages

- Science can and should drive transformation of agriculture and society in Africa.
- Science for agriculture in Africa is too important to be outsourced. African leaders must take responsibility for the role of science in society.
- Science is essential to preserve and use Africa's rich biological heritage, as well as indigenous and local knowledge.
- Agricultural transformation in Africa will not happen without realizing the potential of women and young people.
- Now is the time to increase investments in science for agriculture in Africa, when countries have the means and opportunities to invest, and gain returns.
- African Solidarity in Science is an important dimension of the strategy for harnessing the power of science.

Preamble



Africa's impressive economic performance, sustained for more than a decade, has inspired optimism about the realisation of Africa's vision of a continent free from hunger and extreme forms of poverty. The distribution of the benefits flowing from Africa's resurgence has however not been equitable. The poor who happen to be concentrated in rural areas and depend on agriculture have been left behind. A further concern is therefore about whether Africa will be able to sustain this level of growth over the long term.

These concerns are legitimate and merit careful attention. An essential response to addressing them lies in the transformation of the agriculture sector by substantially increasing its productivity, reforming the related institutions towards increasing competitiveness, especially of the private sector, and by rebranding agriculture as a business rather than a way of life.

There are encouraging signs that African nations are once more recognising the importance of agriculture as a key driver of growth, and not just growth but inclusive and more sustainable growth. The African Union's declaration of 2014 as the year of agriculture and food security in Africa is a testament to renewed commitment to this sector.

The development of the Science Agenda for Agriculture in Africa (*Science Agenda*) under the auspices of FARA is an important step on the road to the transformation of Africa's agriculture. This Science Agenda is all the more important because it is Africa-owned and Africa-led. For a very long time Africa has outsourced much of the Science for its agriculture thereby undermining its own capacity to fully mobilise this science for improving the livelihoods of its people, particularly towards deriving the solutions that address needs peculiar to Africa.

It has been a privilege to Chair the Expert Panel that put together the discussion documents and subsequently this *Science Agenda* document. What I found most gratifying in

performing this role is the exceptionally high interest and ownership by African stakeholders in this Science Agenda. This assures me that this *Science Agenda* will serve its intended purpose. This is significant because past attempts at this kind of exercise have not realised this expectation.

That said, I wish to point out that this continental *Science Agenda* will only translate into stronger nations and better lives for the people of Africa if it is supported by coherent investment in science for agriculture-for-development and will inspire reform of the related institutions. Most of these investments are expected to come from national public and private sources. Their mobilisation will require domestication of this framework agenda into national strategies action plans. This next stage of actions will require as much political, financial and stakeholder support as that extended towards the development of the continental agenda document itself.

I congratulate FARA for successfully coordinating the development of this *Science Agenda*. I also applaud the African Union Commission and the NEPAD Planning and Coordination Agency for recognising the game-changing potential of science and ensuring that it is strategically integrated into the continent's agricultural transformation agenda encapsulated in the Comprehensive Africa Agricultural Development Programme (CAADP).

Kanayo F. Nwanze, D Sc
President, International Fund
for Agricultural Development

Chairman and Patron of the Expert Panel Commissioned to
develop the Science Agenda

Foreword



This Science Agenda for Agriculture in Africa has been crafted at the most opportune moment in Africa's history. The economies across Africa are growing, agriculture is rebounding, but there are still high expectations for agriculture because Africa is still the most food insecure continent, and environmental sustainability is becoming increasingly challenging. The world's population is growing, and by 2040 when it is estimated to hit 9 billion, Africa is expected to emerge as the world's breadbasket on account of vast but untapped land and water resources. This unfolding destiny poses significant expectations on Africa's science and technology capabilities. The challenge for Africa to feed itself and become a major food supplier for the world is compounded by the need

to produce healthier, safer and more nutritious food on less land, using less water and chemicals, and producing less waste and less greenhouse gases. These demands explain why Africa resolved to develop a Science Agenda with a vision aptly defined as: *"By 2030 Africa is food secure, a global scientific player, and the world's breadbasket"*.

The Science Agenda represents a delayed yet urgent and realisable opportunity for Africa to fulfil this destiny. **It articulates the science, technology, extension, innovations, policy and social learning that Africa needs to apply in order to meet its agricultural and overall development goals.** The Science Agenda is therefore conceived as a vehicle to support the implementation of the Comprehensive Africa Agriculture Development

Programme (CAADP), which is the broader framework for transforming agriculture in Africa. Science and technology is an essential part of the CAADP strategy to instigate an agricultural-led social and economic transformation. In that regard, the Science Agenda identifies a suite of issues and options for increasing and deepening the contributions of science to agriculture in Africa, at the local, national, regional and continental levels. The Science Agenda's vision aligns with, and contributes to the African Union's Science, Technology and Innovation Strategy for Africa (STISA) and Agenda 2063. In developing the Science Agenda, the FARA Secretariat worked with stakeholders to generate the "Accra Consensus" which ensured that the process of crafting the Science Agenda was in line with AU principles of African ownership and leadership, and wide consultations.

The AUC and NEPAD Planning and Coordinating Agency implore all stakeholders to give priority to the operationalisation of this Science Agenda. Science for agriculture in Africa is too important to be outsourced to international investors. African countries are called upon to increase domestic investments in science for agriculture. Moreover, every country requires a basic science capacity—at least a capacity to "borrow intelligently". African solidarity for Science is the most significant strategy in achieving this vision—by joint efforts to overcome challenges and to take advantage of opportunities; and by sharing technologies, information, skills and facilities.

In conclusion, all levels of stakeholder groups are encouraged to embrace this vision and to champion its realisation. Most importantly, member states are to adopt and adapt the agenda at national level and implement it without delay or hesitation.

H.E. Rhoda Peace Tumusiime
Commissioner, Rural Economy
and Agriculture, African
Union Commission

Dr Ibrahim Assane Mayaki
Chief Executive Officer,
NEPAD Planning and
Coordinating Agency

Dr Charity Kruger
Chair, Executive Board
FARA

Rationale for the Science Agenda



The rationale for this Science Agenda for Agriculture in Africa (also referred to as the *Science Agenda* or S3A) is the imperative of having an overarching strategic framework to guide the broad areas of science that have to be developed by the African countries, their stakeholders and partnerships. The Science Agenda is about the necessary transformation of national science and technology institutions in order to achieve the desired social and economic transformation of Africa. Of priority is bringing about a more productive and efficient food and agricultural sector that as minimum guarantees food and nutrition security. The Science Agenda is an organizing framework of issues, science options, and partnerships to bring about that desired future. The Comprehensive African Agriculture Programme (CAADP), established in 2003, provides the larger frame in which the Science Agenda is operationalized. The S3A therefore is the broader framework for the implementation of the Framework for African Agricultural Productivity (FAAP), which is a reference document for implementing the CAADP tenet on agricultural science and technology (otherwise known as CAADP Pillar IV). S3A also provides African decision-makers with the rationale for increased investments in science and technology.

Overall, the Science Agenda provides the framework and guidelines for:

- Identifying the broad areas of science to be developed in partnership with the main stakeholders
- Facilitating the necessary transformation of national science and technology institutions
- Help focus on the need for human capacity building at all levels
- Facilitate increased funding from diversified sources to support science
- Facilitate alignment of actions and resources to ensure value-for-money and desirable impact
- Facilitate effective partnerships among mandated African institutions at sub-regional/regional levels and between these actors and their external partners.
- Committing to solidarity in science by sharing information, technologies, information, facilities and staff in pursuit of common challenges and opportunities.

One of the defining features of the Science Agenda is the premium it places on African ownership and leadership. The Forum for Agricultural Research in Africa (FARA) led the development of the S3A through a consultative process involving the broader agricultural science community and the CAADP constituency, both within Africa and globally, as well as high-

level decision-makers. The Science Agenda refers to the science, technology, extension, innovations; policy and social learning that Africa needs to apply in order to meet its evolving agricultural development goals. The Agenda identifies the key strategic issues that will impact on science and agriculture and presents a suite of high-level actions/options for increasing and deepening the contributions of science to the development of agriculture in Africa at the local, national, regional and Pan-African levels.

The Science Agenda acknowledges that several studies exist that have attempted to describe an agenda, and indeed to outline priorities for science and research in Africa. Furthermore, the S3A has drawn out lessons from pertinent past continental visions, such as the *Special Programme for African Agricultural Research (SPAAR)*, the NEPAD's *Science and Technology Consolidated Plan of Action (CPA)*, as well as the AU STISA and AU Agenda 2063.

The Agenda does not purport to be a continental blue print on how Science could be nurtured and applied in support of agricultural transformation in a linear and undifferentiated manner. But rather, the Agenda should be looked at as an evolving and living framework that provides the inspiration and choices available for countries, regional, continental and global institutions and other key stakeholders in the private and not-for-profit sectors.

The Science Agenda is about connecting, with a renewed vigour, science with the various dimensions and players that are critical for bringing about rapid agricultural transformation on the continent. These include connecting farmers operating at different scales with agricultural research, the new extension, and value chains. There is need for better connection between universities and agricultural research as well as communicating science more effectively with decision-makers as well as among professionals. Moreover science has to be better connected at the national, regional and continental levels with open portals to global science.

The challenge and the opportunity



The overarching agricultural challenge for science in Africa is that of low productivity across all farming systems. Among the main challenges are: a lack of coherent and conducive policies; poor incentives; poor access to input and output markets; predominant rain fed agriculture; inadequate agricultural R&D spending; heavily degraded and depleted soils; problematic land tenure systems; inadequate levels of mechanisation; many pests, diseases and weeds; and climate change. African agriculture, however, has a number of major strengths: the diversity of agro ecosystems and their natural resources providing for mixed and resilient livelihoods; active rural-urban linkages and expanding domestic urban demand for agricultural products; high efficiency of smallholder agriculture given appropriate inputs and management; large and youthful population; increased investment in education; acceleration in GDP growth; effectively coordinated agricultural development policy frameworks; rapidly growing mobile and internet connectivity; and expanding provision of infrastructure.

The strength of agriculture in Africa also lies in the multitude of successful agricultural initiatives that the continent has experienced in the immediate past and these include:

- Intensifying staple food production: e.g. banana, maize, rice, cassava
- Diversifying the value-chains: e.g. dairy, horticulture, livestock
- Developing growing export sectors: e.g. beef, coffee, cotton, tea
- Community-led soil fertility management: e.g. 're-greening of Sahel' in Burkina Faso, Niger
- Africa-global partnership to unlock production constraints: e.g. eradication of Rinderpest
- Building regional centres for excellence: e.g. CORAF's, ASARECA's commodity centres
- ICT-based marketing systems: e.g. Commodity Exchange initiatives in Kenya and Ethiopia

Africa also has large agro-ecological diversity and farming systems. Of the 14 major farming systems, five host over 70% of Africa's rural poor, and the majority of cultivated area and livestock. These are a) Maize-Mixed; b) Agro-pastoral; c) Highland Perennial; d) Root and Tuber Crop and e) Cereal-Root Crop. The Science Agenda offers options across all the major farming systems.

The global context for African agriculture is changing rapidly and will continue to present both challenges and opportunities. The increasingly unpredictable weather events, changing pattern of disease in crops and livestock, depletion of fossil hydrocarbons and consequent increase in demand for biofuels will further heighten the challenge. Land, water and energy sources are being rapidly depleted. These developments globally have resulted in an acute demand for land, resulting in on-going controversial large-scale land acquisitions on the African continent by foreign investors seeking alternative investment options, as well as biofuel and food production. These new challenges and opportunities require Africa to have greater foresight and a science strategy for managing these anticipated global changes in agriculture and food systems. Urbanization comes with changing consumption patterns: 1) more rice and wheat (bread) at the expense of roots and tubers, 2) more high value fruits and vegetables, and 3) increasing meat, dairy and poultry consumption. The propagation of fast-food chains throughout Africa is a trend towards more processed (and in some cases less healthy) foods, thereby requiring more rigorous food safety measures.

By 2030, Africa will have to be a significant producer of food for the growing global population. This challenge is compounded by the fact that people worldwide are looking for healthier, safer and more nutritious foods and these are generally more costly to produce. In addition, the need to protect the environment also means that increasing production has to be achieved on less land, water, chemicals, waste, and GHGs. Public policies, however, have been slow in responding to these trends.

Fortunately, Africa is endowed with abundant natural resources, including about 60% of the world's arable land, some of it still virgin land. These resources, if effectively and efficiently harnessed, could reduce the threat of food insecurity. Increased agricultural productivity, combined with viable agribusiness that adds value to farmers' production and improved access to markets, can drive broader economic growth across the continent and vastly improve food security.

The S3A recognises the importance of the five 'i's: strengthening of institutions, availability and affordability of improved inputs; expansion of rural infrastructure; incentives for producers; and adequate and timely supply of information to support production and marketing decisions.

The Science Agenda



The Science Agenda has six strategic thrusts: a) an enduring vision; b) CAADP as a short term priority; c) research themes that connect institutions and policies with producers, consumers and entrepreneurs; d) strengthening solidarity and partnerships at national, regional and international levels; e) sustainable financing of science and technology; f) creating a favourable policy environment for science; and g) establishing a special fund for the Science Agenda. These are discussed as follows:

1. Need for an enduring collective vision for science in Agriculture by Africa

The vision for the Science Agenda is therefore that: ***“By 2030 Africa ensures its food and nutrition security; becomes a recognised global scientific player in agriculture and food systems and the world’s bread-basket”***

- a. This calls for science to be valued better by Africa’s ordinary citizens. Science can no longer be a mysterious activity, understood and appreciated by a few.
- b. Scientists, policy makers and politicians alike need to deploy a vision of science-driven agricultural transformation to African society at large.

2. **The immediate priority is implementing CAADP**

In the short- to the medium-term the Science Agenda is aligned with and implemented to advance CAADP’s targets under the Sustaining the CAADP Momentum strategy.

3. **Research themes should connect science with needs and opportunities in African agriculture**

- a. In many countries, agricultural production is moving from subsistence systems to more market-led systems. Productivity is the result of several factors, including higher yielding crop varieties; better breeds, feed and health of livestock; the interactions of genetics with the environment; better management of natural resources, including water for rain-fed and irrigated agriculture; crop and animal husbandry; external agricultural inputs such as seeds, fertilizer, agricultural machinery and implements; access to credit to purchase inputs; availability of labour; and market access, through value chains, linking farmers to markets. The relative importance of these factors varies by country and community and by farming system. The priority themes are:

- b. ***Sustainable productivity in major farming systems***
 - i. Transforming production systems
 - ii. Crop improvement and crop protection
 - iii. Livestock breeds, health and feed
 - iv. Aquatic and inland fisheries
 - v. Agro-forestry and forestry
 - vi. Agricultural mechanization
- c. ***Food systems and value chains***
 - i. Food and nutritional security, food processing, safety and storage
 - ii. Post-harvest handling, processing and storage
- d. ***Agricultural biodiversity and natural resource management***
 - i. Conserving and enhancement of biodiversity
 - ii. Land and water resources and irrigation management
- e. ***Mega trends and challenges for agriculture in Africa***
 - i. Climate change, variability adaptation and mitigation
 - ii. Policy and institutional research, including market access and trade
 - iii. Improving livelihoods of rural communities
- f. ***Cross-cutting themes:*** The S3A is also underpinned by three cross cutting themes:
 - i. ***Sustainable intensification:*** as an organising framework for enhancing productivity, at all scales of production.
 - ii. ***Modern genetics and genomics:*** to give better understanding of gene function, leading to more specific targeting of genetic improvement in agriculturally important species of crops, livestock, fish and trees;
 - iii. ***Foresight capabilities,*** including strategic planning, modelling, and analysis of ‘critical technologies’, as a means of systematic analysis and interpretation of data and perspectives to better understand trends and future challenges.
- g. Transforming production systems in general is key across all farming systems in the African context. This includes: crop improvement and crop protection, constraints to crop production; customer-focussed plant breeding; horticultural and tree crops; and crop protection. Improving livestock production and productivity is increasingly a priority and the agenda includes: livestock production, better feeds, better breeds, better health; aquatic systems and inland fisheries.
- h. Other priorities in the agenda include: agro forestry and forestry systems; agricultural mechanization; food systems and value chains (including food and nutritional security); post-harvest handling, food processing, safety and storage; increased processing; improving food storage; and food safety; agricultural biodiversity and natural resource management; conservation and enhancement of agricultural biodiversity; land and water resources; irrigation and integrated natural resource management.
- i. Mega trends and challenges for agriculture in Africa include climate change, variability, adaptation and mitigation, and urbanisation.
- j. Sustainable intensification is presented as a “new paradigm” for global agriculture that Africa will pursue as a pathway to producing greater yields, better nutrition and higher net incomes while reducing over-reliance on pesticides and fertilizers and lowering emissions of harmful greenhouse gases.
- k. Biosciences, information and communications technologies
 - l. Information and communications technologies
- m. Foresight capabilities must be strategic in orientation and must involve activities such as horizon scanning with the aim of identifying and analyzing trends, weak signals and ensuring early warning as well as developing effective strategic responses.

4. Strengthening institutional systems of science for agriculture in Africa

- a. **Sustaining basic science capacity at the national level.** Each country needs its own strategy that defines its needs for science and agricultural research and a capacity to be a knowledgeable borrower of new technologies from the regional and global stock of knowledge. Weaknesses to be addressed in strengthening the national systems include poor linkages between research, education, and advisory services.
- b. **Regional level:** Effective national systems are the building blocks for regional, continental and global partnerships:
 - i. An example of enhancing Sub-Regional Cooperation is with ASARECA, CORAF and CCARDESA, support regional commodity centres that share results with neighbouring countries (e.g. Kenya on smallholder dairying; Tanzania on rice; Ghana on roots and tubers; Burkina Faso on cotton).
 - ii. The SROs have represented NARS in the CGIAR and the Global Forum.
 - iii. RECs are supporting country implementation of CAADP.
- c. **Global partnerships in science:** The CGIAR is key partner of the NARS and SROs. Recent reform of the CGIAR including CGIAR Research Programs (CRPs) targeting collaboration on specific themes is expected to improve alignment with CAADP.

5. Sustainable financing of the Science Agenda for Africa:

- a. The S3A will encourage financial and technical partners, bilateral and multilateral agencies, and African partners to maintain and expand support. CAADP investment plans are a basis for commitment to financing science and technology.
- b. Mobilizing revenues from Africa's growing economies is a priority of S3A. Specific activities include:
 - i. Building capacity of farmers' associations, finance institutions, and agribusiness agencies to work together
 - ii. Encouraging governments to offer tax incentives and make preferential procurement choices for companies that source from small farmers
 - iii. Developing inclusive financial models that combine incentives, reduce debt risk and promote longer term agribusiness models
 - iv. Corporate social responsibility and other philanthropic activities that could potentially endow a science foundation or similar body.

6. Creating a favourable policy environment for the performance of science

- a. This will require enabling legislation and regulations. This includes biosafety, seed regulation and control, enforcement of plant breeders' rights and country-specific approach to intellectual property rights.
- b. Policy messages must be "credible, salient and legitimate".
- c. The Agriculture Committees of parliaments should be mobilised as allies for agricultural interests and investment in science and technology.
- d. "Boundary spanning partners" or "intermediaries" may be used to interpret the scientific cause in the language of policy makers.
- e. Governments may create an autonomous higher scientific body that establishes consensus on scientific issues to feed into the policy process.
- f. Communication is a continuous process so that scientists keep up with a changing political landscape.
- g. Strong commitment to youth and women and gender equity.

7. A fund to promote African solidarity in science:

- a. A special fund, the "African Science for Agricultural Transformation Initiative" (ASATI), is needed as major vehicle to ensuring that no country is left behind, and that each country has a minimum capacity to address its needs. Potential ASATI activities include: science honours; increasing scientist mobility; and engaging the African Diaspora.

Epilogue



The development of the 'Science Agenda' has been historic and an exciting opportunity for FARA and the African science and technology community to initiate the writing of the 'African narrative'. The Declaration by African Union Heads of State and Government at their Summit in Malabo ratifies the Science Agenda in the context of the Africa Union Commission's Accelerated African Agriculture Growth and Transformation Goals 2025 (3AGTGs 2025). This presents implications for FARA and partners in the operationalisation of S3A on two fronts: first, a commitment to the CAADP Results Framework as an instrument to measure, track and report progress on the S3A commitments, and second, the need to participate effectively in the design of an implementation strategy and roadmap for the 3AGTGs 2025.

The Science Agenda consolidates the gains achieved under the first decade of CAADP. Under Pillar 4 for instance, CAADP provided the vehicle for mobilising and strengthening agricultural research for development actors around a common agenda. This coalition of actors, who also provided the oversight for the development of the science agenda, constitutes a formidable force that is well poised to drive its implementation.

In building the momentum towards operationalising the Science Agenda, a number of strategic plans have to be completed and executed. These include: the definition of a blue-print for developing long-term science capacities for Africa, the articulation of country guidelines for mainstreaming S3A as part of the implementation of the CAADP Results Framework, and planning and supporting the direct participation of SROs with RECs in building knowledge and innovation platforms for CAADP implementation. The readiness with which key institutions notably the AUC, NPCA, RECs and the CGIAR are prepared to join hands with FARA and its constituents (SROs, RUFORUM, ANAFE, AFAAS, private sector and Farmers' organisations) in fleshing out the operationalization strategy in line with the Malabo Declaration is very refreshing and inspiring. It demonstrates that Africans have rediscovered the power of pulling together, especially concerning issues that have a big bearing on their welfare.

The hallmark of the Science Agenda process has been one of African leadership and ownership. This is expected to permeate throughout the implementation of the Agenda. Africa is on the right track to chart the future it wants and to take responsibility for making it happen. With the ratification of the Science Agenda, I am confident that this commitment along with the ownership and leadership will be backed by the domestic investments necessary ensure the realisation of the Science Agenda's vision.

I take this opportunity to extend sincere appreciation to the cohort of donors (current and prospective) of FARA and I extend special thanks to the International Fund for Agricultural Development (IFAD), and the Australian Centre for International Agricultural Research (ACIAR) for their special support and interest in advancing the development of this Science Agenda.

The road towards securing the '*future that Africa wants*' presents challenging yet exciting times ahead. I call on all partners in the continent's agriculture research and development and the science and technology fraternity, private business entities, policy makers to join hands in ensuring that this Science Agenda translates to improved African livelihoods and positions Africa as a serious global player in science.

A handwritten signature in black ink, appearing to read 'Yemi Akinbamijo', written over a light blue horizontal line.

Yemi Akinbamijo
Executive Director of FARA

Acronyms and abbreviations

AASW	African Agricultural Science Week
ABI	Africa Biosciences Initiative
ASALs	Arid and Semi-Arid Lands
AFAAS	African Forum for Agricultural Advisory Services
AfDB	African Development Bank
AGDP	Agricultural Gross Domestic Product
AGRA	Alliance for a Green Revolution in Africa
ASARECA	Association for Strengthening Agriculture in eastern and central Africa
ANAFE	African Network for Agriculture, Agro forestry & Natural Resources Education
APRM	African Peer Review Mechanism
ARE	Agricultural Research Expenditure
AR4D	Agricultural research-for-development
ARI	Agricultural Research Intensity Ratio
ASATF	African Science for Agriculture Transformation Fund
ASATI	African Science for Agricultural Transformation Initiative
ATFP	Agricultural Total Factor Productivity
AU	African Union
AUC	African Union Commission
AU-IBAR	African Union InterAfrican Bureau for Animal Resources
AU-PANVAC	African Union Pan African Veterinary Vaccine Centre
AWARD	African Women in Agricultural Research and Development
BeCA	Biosciences eastern and central Africa
BMGF	Bill and Melinda Gates Foundation
CAADP	Comprehensive Africa Agriculture Development Programme
CCARDESA	Centre for Coordination of Agricultural Research and Development for Southern Africa
CGIAR	Consultative Group on International Agricultural Research
CIMMYT	International Maize and Wheat Improvement Centre
COMESA	Common Market for Eastern and Southern Africa
CPA	Consolidated Plan of Action
CRPs	CGIAR Research Programmes
CSO	Civil Society Organisations
CTA	Technical Centre for Agricultural and Rural Cooperation
DNA	Deoxyribonucleic acid

DP	Discussion Paper on S3A presented to African Agricultural Science Week
DRC	Democratic Republic of the Congo
ECCAS	Economic Community of Central African States
ECOWAS	Economic Community of West African States
EMBRAPA	Brazilian Agricultural Research Corporation
EP	Expert Panel
FAAP	Framework for African Agricultural Productivity
FAO	Food and Agriculture Organization
FARA	Forum for Agricultural Research in Africa
FFA	Frame Work for Action
GCARD	Global Conference on Agricultural Research for Development
GDP	Gross Domestic Product
GHGs	Green House Gases
GIS	Geographic Information System
GM	Genetically Modified
HACCP	Hazard analysis and critical control point
IAASTD	International Assessment of Agricultural Knowledge, Science and Technology for Development
IAC	InterAcademy Council
IBLI	Index-Based Livestock Insurance
ICT	Information and Communication Technology
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
IITA	International Institute of Tropical Agriculture
ILRI	International Livestock Research Institute (ILRI)
IPM	Integrated Pest Management
ISSM	Institute for the Study of Security Markets
KARI	Kenyan Agricultural Research Institute
LGP	Length of Growing Period
MAS	Marker Assisted Selection
MGI	McKinsey Global Institute
NAFSIP	National Agriculture Food Security Investment Plans
NAIP	National Agriculture Investment Plan
NARO	National Agricultural Research Organizations
NARS	National Agricultural Research Systems
NEPAD	New Partnership for Africa's Development
NERICA	New Rice for Africa
NGO	Non-Governmental Organization
NPCA	NEPAD Planning and Coordinating Agency

OG	Oversight Group
OIE	Office International des Epizooties,
PAFO	Pan African Farmers Organisation
PANAAC	Pan African Agribusiness and Agro Industry Consortium
PANGOC	Pan African Non-Governmental Organizations Consortium on Agricultural Research
PCR	Polymerase Chain Reaction
PPR	Peste des Petites Ruminants
R&D	Research and Development
REC	Regional Economic Community
RUFORUM	Regional Universities Forum for Capacity Building in Agriculture
SADC	Southern Africa Development Community
S3A	Science Agenda for Agriculture in Africa
SPAAR	Special Programme for African Agricultural Research
SROs	Sub-Regional Organizations
SSA	Sub-Saharan Africa
STI	Science Technology and Innovation
STISA	Science, Technology and Innovation Strategy for Africa
S&T	Science and Technology
TAEIs	Tertiary Agricultural Educational Institutions
TEAM Africa	Tertiary Education for Agriculture Mechanism for Africa
TFP	Total Factor Productivity
3ADI	African Agribusiness and Agro-Industries Development Initiative
UN	United Nations
UPOV	International Union for the Protection of New Varieties of Plant
WARDA	West Africa Rice Development Association
WECARD	West and Central African Council for Agricultural Research and Development
WHO	World Health Organisation of the United Nations

About FARA

The Forum for Agricultural Research in Africa (FARA) is the apex continental organization responsible for coordinating and advocating for agricultural research-for-development. (AR4D). It serves as the entry point for agricultural research initiatives designed to have a continental reach or a sub-continental reach spanning more than one sub-region.

FARA serves as the technical arm of the African Union Commission (AUC) on matters concerning agricultural science, technology and innovation. FARA has provided a continental forum for stakeholders in AR4D to shape the vision and agenda for the sub-sector and to mobilise themselves to respond to key continent-wide development frameworks, notably the Comprehensive Africa Agriculture Development Programme (CAADP).

FARA's vision: Reduced poverty in Africa as a result of sustainable broad-based agricultural growth and improved livelihoods, particularly of smallholder and pastoral enterprises.

FARA's mission: Creation of broad-based improvements in agricultural productivity, competitiveness and markets by continental-level strengthening of capacity for agricultural innovation.

FARA's value proposition: Strengthening Africa's capacity for innovation and transformation by visioning its strategic direction, integrating its capacities for change and creating an enabling policy environment for implementation.

FARA's strategic direction is derived from and aligned to the Science Agenda for Agriculture in Africa (S3A), which is, in turn, designed to support the realisation of the CAADP vision. FARA's programme is organised around three **strategic priorities**, namely:

- **Visioning Africa's agricultural transformation** with foresight, strategic analysis and partnerships to enable Africa to determine the future of its agriculture, with proactive approaches to exploit opportunities in agribusiness, trade and markets, taking the best advantage of emerging sciences, technologies and risk mitigation and using the combined strengths of public and private stakeholders.
- **Integrating capacities for change** by making the different actors aware of each other's capacities and contributions, connecting institutions and matching capacity supply to demand to create consolidated, high-capacity and effective African agricultural innovation systems that can use relative institutional collaborative advantages to mutual benefit while also strengthening their own human and institutional capacities.
- **Enabling environment for implementation**, initially through evidence-based advocacy, communication and widespread stakeholder awareness and engagement and to generate enabling policies, and then ensure that they get the stakeholder support required for the sustainable implementation of programmes for African agricultural innovation

Key to this is the delivery of three important results, which respond to the strategic priorities expressed by FARA's clients. These are:

Key Result 1: Stakeholders empowered to determine how the sector should be transformed and undertake collective actions in a gender-sensitive manner

Key Result 2: Strengthened and integrated continental capacity that responds to stakeholder demands within the agricultural innovation system in a gender-sensitive manner

Key Result 3: Enabling environment for increased AR4D investment and implementation of agricultural innovation systems in a gender-sensitive manner

FARA's development partners are the African Development Bank (AfDB), Bill and Melinda Gates Foundation, BMZ (The Federal Ministry for Economic Cooperation and Development), the Canadian International Development Agency (CIDA)/ Department of Foreign Affairs, Trade and Development (DFATD), the Danish International Development Agency (DANIDA), the Department for International Development (DFID), the European Commission (EC), The Consultative Group in International Agricultural Research (CGIAR), the Governments of the Netherlands, Nigeria and Italy, the Norwegian Agency for Development Cooperation (NORAD), Australian Centre for International Agricultural Research (ACIAR) and UT Bank (Ghana). The World Bank.



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