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**Forum for Agricultural Research in Africa (FARA)**

**Agricultural Research, Science, Technology and Innovation**

**Science Agenda for Agriculture in Africa (S3A) – Framework for STISA Priority I**

**Report of activities – 2016**

**Introduction**

The Forum for Agricultural Research in Africa (FARA) is a continent-wide forum of stakeholders engaged in African agricultural research and development (ARD). The Forum encompasses all stakeholders, African and non-African, who are committed to advancing African agricultural development and the achievement of the Millennium Development Goals (MDG), especially MDG1 (eradicate extreme poverty and hunger) and MDG7 (ensure environmental stability). FARA has a mandate from the African Union Commission (AUC) to serve as its technical arm on issues related to agricultural research for development. FARA’s mission is to create broad-based improvements in agricultural productivity, competitiveness and markets by providing a strategic platform for catalysing and facilitating continental networking to reinforce the capacities of Africa’s national and sub-regional agricultural research systems (NARS/SROs).

FARA and its Science for Agriculture Consortium (S4AC) partners have developed the Science Agenda for Agriculture in Africa (S3A) – *Science Agenda* – as a strategic framework for transforming African agriculture through science, technology and innovation. The *Science Agenda* was endorsed by African Heads of State and Government in Malabo, Equatorial Guinea in July 2014 as Africa’s framework for bringing science, technology and innovation (STI) to bear on Africa’s agricultural transformation. Through an MoU between FARA and the AUC, the Science Agenda provides the overarching context within which FARA supports the work of HRST.

**Science Agenda’s contribution to STISA-2024 and AU Agenda 2063**

FARA contributes to the mandate of the Department of HRST through the *Science Agenda*; a strategic framework document recognized by African Heads of State and Government. The *Science Agenda* provides the framework through which agricultural research and innovation contributes to the work of HRST. It aligns with and contributes to STISA-2024 and AU Agenda 2063. The Science Agenda refers to the science, technology, extension, innovations, policy and social learning Africa needs to apply in order to meet its (agricultural) development goals. The Science Agenda encompasses the breadth of science, the meaningful engagements between disciplines, the evidence-based policies, and the innovation processes that strengthen the contribution of science to Africa’s agricultural development.

From the perspective of HRST’s STISA-2024 and AU Agenda-2063, the *Science Agenda* as a strategic framework, helps to build commitment to investment in STI for African agriculture, aligns priorities with African needs, and strengthens African leadership of STI. The *Science Agenda* encourages countries to place science firmly in their long-term agricultural development agenda; provides guidance for international development partners in the formulation of their assistance strategies and/or programmatic interventions in Africa; informs strategic planning development and/or review of key continental and regional stakeholders; supports the operationalization of CAADP-aligned plans and formulation of future iterations of such plans and programmes; ensures that CAADP takes full advantage of the power of science and technology in agricultural transformation; and increases attention to the role of tertiary agricultural educational institutions (TAEIs) with CAADP.

In 2016 FARA registered a number of achievements in its implementation of the *Science Agenda*. Among these were:

**Aligning the Science Agenda’s Operational Strategy with Post-Malabo CAADP Implementation Strategy: *Walking- the-Talk of a Science-led Agricultural Transformation in Africa***

FARA organized a workshop on implementation of the Science Agenda under the theme: *‘Walking-the-talk of a Science-led Agricultural Transformation.* The Science Agenda supports the *Sustaining the CAADP Momentum* Results Framework and the roadmap strategy for implementing the 2014 AU Malabo Declaration on Accelerated Africa Agricultural Growth and Transformation (A3GT). Africa’s AR4D institutions came together in this meeting to explore the modalities for re-invigorating cooperation and the institutionalisation processes to enable a functional platform for critical joint actions at continental, regional and national levels. The workshop was attended by representatives of the FARA Secretariat (Management and Board); sub-regional research organizations (ASARECA, CCARDESA, CORAF and NASRO); AFAAS, ANAFE, NEPAD Agency, CGIAR centres, GFAR, NARIs, universities, and farmers’ organizations (PAFO).

The workshop agreed that implementation of the science agenda was critical in influencing the agricultural transformation agenda, especially at country level. Based on this, it agreed further that there was a *prima facie* case for (i) repositioning FARA and the other African AR4D agencies into a renewed Forum with FARA providing secretariat and convening functions; (ii) repositioning the sub-regional research organizations (SROs – ASARECA, CARDESA, CORAF/WECARD and NASRO) to more appropriately respond to the post-Malabo CAADP implementation roadmap; (iii) reporting lines for the repositioned ‘Science for Agriculture Institutions’ to ensure greater visibility and accountability, as well as enable greater SRO alignment, linkage and reporting to FARA and FARA reporting to NPCA and AUC; and (iv) developing short-term priorities, strategies and action plans for implementation of the S3A with emphasis on mainstreaming the S3A into the CAADP NAFSIPs, advocacy, communication, social marketing and resource mobilization and management.

**Institutional arrangement for facilitating the implementation of the Science Agenda**

The implementation of the S3A, primarily at national level but also at higher levels, calls for concerted coordination of efforts by all STI organizations working on the continent. Following several consultations held in 2015 to explore the most effective approach to addressing the shortcomings of the organizational architecture of the continent’s agricultural research and development organizations, FARA, the SROs (ASARECA, CCARDESA, CORAF/WECARD, NASRO) and AFAAS resolved to associate into a consortium—i.e. the Science for Agriculture Consortium (S4AC). Through this arrangement they will exploit economies of scale thereby enhancing resource use, enhance coherence and ultimately increase their individual and collective impact. FARA serve’s as this Consortium’s Secretariat. The S4AC was launched during the third Global Conference on Agricultural Research for Development (GCARD3) in April 2016. In September 2016 the consortium partners met at writeshop convened by the World Bank to develop a proposal for the consortium’s institutional strengthening and programmes to address priority issues notably climate change and post-harvest management.

**Continental Dialogues for Action: Making the Science Agenda an integral part of Africa’s agriculture and food industry**

During the 7th Africa Agriculture Science Week (AASW) and FARA General Assembly held in Kigali, Rwanda in June 2016, the S4AC initiated a series of high-level dialogues on the country level operationalisation of the S3A. The first was a plenary dialogue on the Science Agenda, focusing on implementation at country level while the second was a side-event in which FARA and its S4AC partners engaged countries in focus group discussions on implementation issues and follow-up action after Kigali. These dialogues in themselves aimed at triggering down-stream dialogues, implementation and action-learning at country level. The question was how to introduce ‘science’ into the regular ‘self-directed’ conversations of farmers, producers, entrepreneurs and policy makers. The ultimate goal then, was that these beneficiary groups’ take some active role, or be the main drivers and supporters of country level processes of innovation and agricultural transformation.

Issues discussed at the plenary dialogue bordered on how science and AIS leaders at country level promote ‘science and innovation’ so that these make sense to smallholder African farmers, entrepreneurs and their political leaders; how the S3A process at country level should harness the energies currently unfolding in the agricultural and food systems; current technology gaps for farmers and agri-processors; requirements for countries to establish innovation/technology platforms and agribusiness incubators; current successes in integrating national systems of innovation; unfolding approaches to operationalising the S3A at country level; and the most important strategic partnerships in strengthening capacity to drive innovation and support to farmers and entrepreneurs.

The focused group discussions between FARA and the S4AC on the one hand and countries representatives on the other centered on implementation issues and follow-up action after Kigali. Topics discussed included reassessing NAFSIPs for focused Science Agenda interventions; developing Innovation Platforms and incubation units to complement country implementation channels and arrangements; mapping out implementation agenda in the (i) short-term and immediate actions to get implementation going within existing plans and resources and targeting short-term gains and (ii) medium-to long-term agenda of action including strengthening and integrating the national agricultural innovation system.

**Guidelines for mainstreaming climate smart agriculture in national agriculture investment plans and programs**

The impacts of climate change present a new set of challenges in efforts to reduce poverty and promote social justice. The need to understand how climate change has affected the African continent and what needs to be done to minimize the impacts in increasingly becoming obvious. Country policies, strategies and investment plans are expected to respond to this need. However, the modus operandi of how to do this is not clear. In 2016 FARA led a series of studies that generated knowledge support for enhanced delivery and adoption of CSA technologies that enhance resilience and increase productivity. These include Guidelines for mainstreaming CSA in national agricultural investment plans, a practical tool that outlines a range of practices and approaches required to achieve CSA resilience and productivity of agricultural systems while at the same time also removing or reducing carbon emissions.

**Addressing the Malabo Declaration Targets: Analysis of Agricultural Total Factor Productivity (ATFP) in the context of the Science Agenda for Agriculture in Africa**

CAADP encourages African governments to increase resources going to, and benefitting, the agricultural sector. Countries accepting the CAADP pledge agree to allocate 10 percent of government spending to the agricultural sector, and commit to improving rural infrastructure. One desired outcome of this investment is for agricultural productivity to double by 2025 and to improve farmer access to markets.

Within the framework of the Science Agenda, FARA completed a series of agricultural total factor productivity (ATFP) studies in 2016 in eight African countries: Burkina Faso, Cameroon, Malawi, Morocco, Nigeria, Tunisia, Uganda and Zambia. This was in response to a request from the AUC and AU-NPCA to FARA to lead a series of actions that will contribute to the CAADP Results Framework sub-result (i) on doubling ATFP by 2030. The studies generated a time series of agricultural and aggregate TFP for each of the eight countries and appropriately disaggregated the measures into sectors including farm level, upstream and downstream components. Each country study took a close look at sector contributions to country level economic growth and used country specific history to contextualize the evolution of productivity and growth over time.

Individual country reports are available as well as a synthesis report summarizing results from all eight countries. As measured in the studies, if beginning the growth measurement in 2010, only Nigeria would reach the goal of doubling agricultural productivity growth by 2030. Cameroon’s agricultural productivity would have doubled by 2035, while Morocco’s would have doubled by 2039. Average agricultural TFP growth in Malawi was negative, and hence is difficult to predict how long it would take to double productivity by increases in capital and labor inputs alone. Finally, Tunisia and Uganda would take upwards of 50 years to double productivity. The synthesis report extends the country studies by linking TFP results to poverty rates. Results suggest agricultural TFP is strongly correlated with poverty levels. The initial results also suggest TFP growth levels in agriculture, manufacturing and services are all correlated with the decrease in the share of rural residents living in poverty. The results suggest that agricultural TFP growth is highly correlated with poverty reduction, but agricultural TFG growth is influenced by growth in manufacturing and service sector TFP.