

## Capacity strengthening for a transformed agricultural sector in Africa: The role of the Science Agenda for agriculture in Africa

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### Abstract

Science is vital in the development of African agriculture. The role of science in enhancing agricultural productivity, competitiveness and market access in Africa is too important for it to be outsourced, and African leaders have to invest more of their own resources into research and development as well as human capacity building and Strengthening initiatives. The Science Agenda for Agriculture in Africa (S3A) envisions that “*By 2030 Africa is food and nutrition secure, a global scientific player, and the world’s food-basket*”. This vision resonates with and contributes to the AU Agenda 2024 – Science, Technology and Innovation Strategy for Africa (STISA) and AU Agenda 2063. The key medium term goal for the Science Agenda is to build basic science capacity at national and regional levels with special attention to the youth and women. The key actions should include the mobilization of collective action to take advantage of science and technology in resolving common problems across member states and building the basic science capacities; the development and mainstreaming of a framework for human capital formation in science, technology and agri-prenuership in schools, colleges, vocational institutions and universities and key support regional mobility programmes such as the ‘Regional Mobility for Capacity Strengthening’ (ReMoCaST) programme being championed by FARA. Operationalization of the Science Agenda requires commitment from African governments and supporting institutions/ organizations (e.g. AUC, NPCA, FARA, SROs, AFAAS, RUFORUM, ANAFE, NAIS institutions, PAFO, PanACC, PANGOG, etc.) to build and strengthen capacities for Agricultural transformation in Africa.

Key words: CAADP, Capacity development, Dublin process, Science Agenda

### Résumé

La science est essentielle dans le développement de l’agriculture en africaine. Le rôle de la science dans l’amélioration de la productivité agricole, la compétitivité et l’accès aux marchés en Afrique est trop importante pour être ne pas être financé, et les dirigeants africains doivent investir davantage de leurs propres ressources dans la recherche et le développement ainsi que dans le renforcement des capacités humaines et dans des initiatives de renforcement. Le programme Le’ «Science Agenda for Agriculture in Africa » (S3A) prévoit que «*d’ici 2030, l’Afrique soit sécurisé en nourriture et en nutrition, soit un acteur scientifique mondiale, et le premier panier alimentaire du le monde* ». Cette vision a de la valeur et doit contribuer au programme de 2024 de l’Union Africaine -. Le programme

2063 de la Science, de la Technologie et de la Stratégie d'Innovation pour l'Afrique (STISA) et l'Union africaine. Le principal objectif à moyen terme pour le programme de la science est de renforcer les capacités en sciences fondamentales aux niveaux national et régional avec une attention particulière à la jeunesse et aux femmes. Les principales mesures devraient inclure la mobilisation de l'action collective pour profiter de la science et de la technologie afin de résoudre les problèmes communs à tous les Etats membres et le renforcement des capacités en sciences fondamentales. Le développement et l'intégration d'un cadre pour la formation du capital humain dans la science, la technologie et l'entrepreneuriat agricole dans les écoles, les collèges, les établissements d'enseignement professionnel et les universités et le soutien clé des programmes de mobilité régionales telles que les programmes de «la Mobilité Régionale pour le Renforcement des Capacités» (ReMoCaST) dont FARA se fait le champion. L'opérationnalisation du programme des sciences exige un engagement des gouvernements africains et l'appui des institutions / organisations (par exemple les institutions comme AUC, l'Agence du NEPAD, le FARA, OAR, AFAAS, RUFORUM, ANAFE, NAIS, PAFO, PanACC, PANGOG, etc) pour construire et renforcer les capacités de la transformation de l'agriculture en Afrique.

Mots clés: Programme de la science, processus de Dublin, le PDDAA, le développement des capacités

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## **Background**

The Science Agenda for Agriculture in Africa (*'Science Agenda' or S3A*) is one of the four strategic thrusts to provide the knowledge and knowledge support under the 'Sustaining CAADP Momentum' Framework. It identifies the key strategic issues that will impact on science for agriculture and presents a suite of high-level actions/options for increasing and deepening the contributions of science to the development of agriculture at the local, national, regional and continental levels. The Science Agenda is the broader framework for the application and implementation of the principles of the Framework for African Agricultural Productivity (FAAP), which is a reference document for implementing the CAADP tenet on agricultural Science and technology.

The development of the Science Agenda began as one of the five work streams of the 'Dublin process', which aimed at improving CAADP-CGIAR alignment. The Institutional architecture for development and operationalizing the Science Agenda as formulated by its Technical Advisory Group includes mainly, the Dublin Process Steering committee, an Expert Panel who wrote the Science Agenda document an Oversight Group (OG) comprising-AUC, NPCA, FARA Secretariat, SROs (ASARECA, CCARDESA, CORAF/WECARD and NASRO); Education networks (RUFORUM, ANAFE, AFAAS, PAFO, PanAAC, PANGOC, RECs, the CGIAR Consortium, the World Bank and IFAD and. The FARA secretariat provides leadership for the development and operationisation of the Science Agenda.

The Science Agenda provides an overarching framework for FARA's new Medium Term Operational Plan (MTOP)-2014-2018 under Strategic Priority 1; *Visioning Africa's*

*agricultural transformation with foresight, strategic analysis and partnerships.* The tenets of the S3A however transcends beyond Strategic Priority (SP) 1, to include SP2- *Integrating capacities for change – by connecting and learning*, and SP3- *Enabling environment for implementation by advocating and communicating*. Currently, the operational plan is being developed for the implementation of the Science Agenda document. FARA is therefore putting in place appropriate structures for this purpose.

The Science Agenda envisions that **“By 2030 Africa ensures its food and nutrition security; becomes a recognized global scientific player in agriculture and food systems and the world’s breadbasket”**. For this to happen, Africa needs to ensure the development of high caliber of human resource. This is critical if Africa should exploit its potential to increase the value of its annual agricultural output from \$280 billion (in late 2000s) to around \$800 billion by 2030 (Mckinsey Global Institute).

### **Africa’s Agricultural Achievements in the last decade**

This paper therefore discusses the Goals and Actions of the Science Agenda that puts education and training as a linchpin for the transformation of agriculture in Africa and makes recommendations for increased support for the Science Agenda towards sustainable human capacity development.

It is clear that Africa, as a continent, has made some gains in Agriculture; The following can be articulated as achievements in the last decade

- (i) Public sector Investment in AR4D has increased by 40% over the past decade in a number of countries. Also, the establishment of the Multi-Donor Trust Fund (MDTF) model provided significant support to ARD institutions on the Continent.
- (ii) Science and technology is already making a positive difference in Africa contributing to increases in productivity of staple foods, diversification into higher value crops as well as in the ‘greening’ of the arid areas. More can be achieved with greater investment.
- (iii) There is more openness by researchers and NARS in recognizing the role of farmers in knowledge generation and decision-making.
- (iv) The number of researchers with capacity has increased on the continent.
- (v) There is a substantial improvement in education capacity through improved curricula in public and private universities.

Despite these achievements, agricultural productivity is low and Africa still remains a net importer of food. African agricultural institutions (research and universities) are either understaffed or lack key skills and capacities to undertake their core mandates. The Science Agenda therefore underscores key strategic goals and actions geared towards ensuring that the right human capacities are available to spearhead Africa’s Agricultural development transformation.

## **Goals and actions of the Science Agenda relevant to capacity strengthening**

**Strategic goals.** Africa needs to: (i) build capacity at the national level to critical mass and ensure implementation in higher agriculture education, (ii) train an increased number of students in Science Based courses, mainstreaming the visibility of science at the community level, and improve the working capacity of young researchers, (iii) train lecturers and scientists in the use of modern science technologies, (iv) generate data and knowledge that informs the policy process, and strengthen the legislative processes to promote better policies and budgets for agriculture and related R&D, and (v) establish an Agricultural Research and Development fund in each country, and at regional and continental level.

In the short, medium and long term goals are as follows:

**Short-term goal.** Increase domestic public and private sector spending and create the enabling environment for sustainable application of science for agriculture.

**Medium term goal.** Build basic science capacity at national and regional levels with special attention to the youth and women.

**Long-term goal.** Double current level of Agricultural Total Factor Productivity (ATFP) by 2024 through application of science for agriculture.

Actions Build basic science capacity at national and regional levels with special attention to the youth and women:

1. Mobilize collective action to take advantage of science and technology in resolving common problems across member states and building the basic science capacities.
2. Develop and mainstream a framework for human capital formation in science, technology and agri-prenuership in schools, colleges, vocational institutions and universities.
3. Support regional mobility programmes e.g. Regional Mobility for Capacity Strengthening (ReMoCaST) programme.

A number of issues require reaction from the African Research for development coalition to promote Capacity Strengthening for Agriculture in Africa. For instance;

- (i) How do we better integrate the national institutions of education, research and extension, and how to rationalize and reform educational systems as part of the Science Agenda.
- (ii) How do we support regional mobility programs and provide incentive systems to influence regional policies in higher institutions of education.
- (iii) How can the Science Agenda trigger the strengthening of agricultural advisory services to address the missing middle which is impeding the adoption of the rich array of science-led solutions to local problems of African farming communities?
- (iv) How will the science agenda reach out to the youth and women as part of mainstreaming science and how will it lead to more appropriate technologies for women farmers, especially among women-headed households, partly the result of rural outmigration?

- (v) How do we forge multi- and trans- disciplinary and across agriculture related sciences such as forestry, aquaculture, marine fisheries, livestock and biology and also social science, marketing, policy research, regional trade and political economy and ensure that we integrate capacities across institutions for sustained agricultural growth

These outstanding issues need to be urgently resolved. FARA in operationalizing the Science Agenda requires commitment from African governments and supporting institutions/ organizations (e.g. AUC, NPCA, SROs, RUFORUM, ANAFE, AFAAS, PAFO, PANGOG, PanACC etc.) to build and strengthen capacities for Agricultural transformation in Africa.

### **Conclusion**

Africa requires adequate human resource and skills in Agriculture to ensure that Africa can feeding itself, increase wealth, employment and reduce poverty among its growing population. The Science Agenda for Agriculture in Africa provides African governments the best opportunity to leverage the advances in science and technology. The science used must draw from and fully integrate conventional and local knowledge systems. There's no nation that has achieved growth either socially or economically without using the power of science especially in the dominant sectors. There is need therefore to develop a culture of science across generations of institutions. There is therefore the need to mainstream science and its application to agriculture in our schools and Universities.

The development and operationalization the Science Agenda depends on collaboration and effective ownership by all stakeholders as well as a sustainable financing regime for its programmes and projects. The FARA secretariat is grateful for the support from all its constituents and partners.

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### **References**

- NPCA. 2013. Sustaining the CAADP Momentum.
- Forum for Agricultural Research in Africa (FARA). 2014. Science Agenda for Agriculture in Africa – connecting science for agricultural transformation.
- Forum for Agricultural Research in Africa (FARA). 2010. Strengthening Capacity for Agricultural Research and Development in Africa (SCARDA): End-of-Pilot Phase Report. Accra, Ghana.
- McKinsey Global Institute (MGI). 2010. Lions on the Move: The progress and potential of African NEPAD Planning and Coordinating Agency (2012). CAADP-Sustaining the Momentum into the next decade.