SYNGENTA FOUNDATION FOR SUSTAINABLE AGRICULTURE

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REORIENTING PUBLIC AGRICULTURE R&D FOR ACHIEVING SUSTAINABLE, NUTRITIOUS AND CLIMATE RESILIENT FOOD SYSTEMS IN NIGERIA

POLICY BRIEF

syngenta foundation for sustainable agriculture

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KEY MESSAGES AND RECOMMENDATIONS

CONTEXT

Agricultural transformation will require innovation, driven by the needs of farmers, consumers, and the environment. Research has an important role to play in supporting the innovation process. Investments in agri-food system research will have to be scaled up and target poverty, nutrition, and sustainability issues in the agri-food system. But how should public agriculture and food R&D be reoriented and supported?

This policy brief was extracted from a report that aims to shed light on the past and current focus of the public agriculture R&D agenda in Nigeria and show major shifts and trends in public and private research spending in the country. The study provides recommendations on how to reorient the future R&D agenda that addresses major gaps and integrates nutrition, sustainability, and climate resilience needs, and lays down necessary steps and actions for making the shift.

KEY MESSAGES

- Agricultural research in Nigeria has focused largely on crop productivity improvements across the studied commodities (root and tubers, cereals, legumes, fruits and vegetables, and aquaculture), while research on sustainability, nutrition, and climate resilience received comparatively low funding support.
- Despite the focus on productivity, crop yields have declined in the last ten years for some crops and insignificant yield increase were monitored for other crops, which implies that the impact of research on productivity improvement is low.
- Significant changes to the research ecosystem and a renewed focus of the research agenda are needed to advance public agriculture and food research in Nigeria.

RECOMMENDATIONS

The transformation of Nigeria's agriculture research ecosystem will require significant political will from the national government, as well as cooperation and support from the private sector and the development and funding community. More specifically, the Government of Nigeria is advised to:

- Develop a **national agricultural research policy** that is aligned with the agricultural goals set under the current Medium-term National Development Plans (MTNDP) for 2021 to 2030.
- Set up **capacity-building initiatives** that engage the private sector to streamline and strengthen the capacity of the Agricultural Research Council of Nigeria (ARCN) and the National Agricultural Research Institutes (NARIs) to deliver on their mandates. This initiative must include the institutionalization of clear measurement and evaluation mechanisms that will foster a performance-driven culture.
- Diversify and increase **funding sources** for research activities, instituting systems, and structures to enhance the efficiency and effectiveness of the allocation and utilization process.
- Transform the **national and state-level extension service delivery system** to bridge the linkage gap between researchers and end-users and ensure demand-driven research and the efficient commercialization of innovative solutions.
- Ensure the protection of **intellectual property rights (IPR)** of researchers and clear adherence to protocols for the use of research generated from the NARIs.
- Foster **collaboration among the NARIs** to ensure synergy, eliminate overlap of research activities and promote efficient communications and knowledge sharing.

SUMMARY

The agricultural research ecosystem in Nigeria is complex and characterized by several actors and stakeholders who shape the policy and funding environment and support the implementation of programs.

- National Agricultural Research Institutes (NARIs) and international research institutes are at the core of Nigeria's agriculture and food research landscape.
- The NARIs have formal mandates to conduct research on food and tree crops, livestock and fisheries, extension services, mechanization, and post-harvest management. They collaborate with educational institutions, state-based Agricultural Development Programmes (ADPs), NGOs, private companies, farmer organizations, and development organizations.
- Six of the 15 CGIAR Centres are active in Nigeria and collaborate with the NARIs and other stakeholders to conduct research and implement donor-funded agriculture and food programs.

Public agricultural research in Nigeria is primarily funded by the Federal Government of Nigeria (FGN), development organizations, and donor partners.

- The FGN provides funding to the NARIs in its yearly budget appropriation, and development organizations and donor partners offer direct funding to implement agricultural development initiatives with research components.
- Annual government funding disbursement to the NARIs for public agricultural research is usually lower than the amounts appropriated in the approved national budget. The complexity of budget appropriation delays government funding disbursement.

The current structure of the Agricultural Research Council of Nigeria (ARCN) limits the agricultural research system's effectiveness.

- ARCN has the mandate to coordinate public agricultural research. However, in practice, it only supervises the fifteen NARIs under the Federal Ministry of Agriculture and Rural Development (FMARD). The other institutes and agencies that conduct agricultural research report to other ministries and agencies. This flawed structure leads to poor coordination of research efforts because the research-focused institutions that are not under the control of the ARCN are not accountable to the agency.
- Furthermore, the national research system lacks monitoring, evaluation, and learning frameworks that could ensure accountability and responsible knowledge transfer to end-users. Consequently, most of the research programs are not demand-driven, and there are no clear metrics for measuring their impact and effectiveness.

The agricultural research agenda of Nigeria is largely focused on short-term productivity and disregards sustainability, nutrition, and climate aspects.

- The research focused largely on crop productivity improvements, which received over 59% of the total estimated funding commitment from all sources between 2014 and 2019. This is followed by research on sustainability at 18%, nutrition at 16%, and climate resilience at 3% (Table 1).
- Across the categories, root and tubers received the highest cumulative funding for agricultural research, with cassava receiving over 75% of funding for the category. Cereal received the second-highest funding, with rice receiving 70% of the funding for the category. Fruits and vegetables are the third-highest funded category, followed by fisheries and legumes, respectively.
- Historical data on crop yields in the last ten years shows a decline in output for some crops and an insignificant yield increase for other crops, which implies that the impact of research on productivity improvement is low.

Table 1. Total Estimated Funding for Crops and Commodities Across Categories Between 2014 – 2019

Total Funding for Crops and Commodities Across Impact Areas Between 2014 - 2019 (in thousands, USD)								
Categories	**Root and Tubers**		**Cereals**		**Legumes**	**Fruits and Veg.**	**Aquaculture**	
Crops/Commodities	**Cassava**	**Yam**	**Rice**	**Maize**	**Soybean**	**Fruits and Veg.**	**Fisheries**	**Total**
Productivity	26,552	7,891	15,164	5,935	2,194	3,132	1,587	**62,455**
Sustainability	4,016	2,605	7,235	2,529	587	26	2,295	**19,292**
Nutrition	8,572	1,997	2,038	739	251	3,132	536	**17,265**
Climate Resilience	170	123	1,419	1,584	107	-	65	**3,467**
Others	323	13	211	142	139	-	1,710	**2,537**
Total	**39,633**	**12,629**	**26,068**	**10,928**	**3,277**	**6,290**	**6,191**	**105,016**

Significant changes to the research ecosystem and a renewed focus of the research agenda are needed to advance public agriculture and food research in Nigeria.

The table below summarizes the recommendations on improving the broad research ecosystem to address the current gaps within Nigeria's research landscape, and the research priority areas for the reorientation of the future agricultural research and development agenda in Nigeria.

Table 2. Summary of Recommendations

Improving the Research Ecosystem	• Develop an agricultural research policy for Nigeria. • Build the capacity of the ARCN and NARIs to deliver on their national mandates. • Diversify and increase funding sources for research activities and institute structures to enhance the efficiency and effectiveness of fund allocation. • Transform the national and state-level extension service delivery system to bridge the linkage gap between researchers and end-users. • Ensure the protection of intellectual property rights (IPR). • Foster collaboration among the NARIs to ensure synergy and eliminate overlap of research activities.
Future Research Priority Areas	• Prioritize Climate Resilience and Nutrition research. • Promote the adoption and use of technology for data collection and management to inform research planning.

Take-aways from the validation workshop

The Syngenta Foundation and Sahel Consulting presented the results and recommendations at a high-level stakeholder meeting in October 2021 in Abuja. They were joined by distinguished representatives from the public and private sectors, as well as academia and development partners. Lord Paul Boateng moderated a lively panel discussion that generated key insights into the current challenges of Nigeria's agricultural R&D ecosystem and highlighted important reform opportunities of the research agenda that must address climate change, nutrition, and sustainability and helps ensure food and nutrition security for Nigeria's growing population. The recent adoption of the ARCN amendment bill is an important step in the right direction to further streamline the governance structure of the agriculture research system. But much more needs to be done to truly transform the research system that is driven by the needs of farmers, consumers, and the environment. This process requires strong collaboration among actors across the public and private sectors, civil society and development partners who can turn the studies recommendations into action and deliver positive impact in the sector.

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