

## Briefing Note



# Strengthening Agricultural Extension Delivery for Resilient Agri-Food Systems in Africa

## Executive Summary

Agriculture remains the backbone of most African economies, employing more than half of the continent's labor force and supporting the livelihoods of hundreds of millions of people. Yet agricultural productivity across Africa remains significantly below global averages, limiting the continent's ability to achieve food security, reduce rural poverty, and build resilient agri-food systems. One of the most critical constraints is the limited effectiveness of agricultural extension and advisory services, which are responsible for translating research and innovations into practical technologies adopted by farmers. Weak linkages between research institutions, extension systems, and farming communities continue to slow the adoption of improved agricultural practices and climate-resilient technologies. Universities and regional academic networks such as the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM) have an increasingly important role in strengthening these linkages by integrating research, education, innovation, and community engagement. This briefing note highlights key challenges in extension delivery and outlines strategic actions for governments and development partners to invest in integrated, scalable extension systems that strengthen innovation uptake, improve climate resilience, and promote inclusive agricultural transformation across Africa.

## Africa's Agricultural Productivity Gap

Despite having significant agricultural potential, Africa's agricultural productivity remains low compared to global averages:

- Cereal yields in Africa average about 1.7 tons per hectare, less than half the global average of approximately 4.2 tons per hectare<sup>1</sup>.
- Current agricultural yields across Africa are estimated to be less than 25% of their potential, highlighting a large opportunity for productivity gains through improved technologies and practices<sup>2</sup>.
- In some African countries, such as Zambia, maize yields average 1–2 tons per hectare despite potential yields of up to 9 tons per hectare under improved management conditions (Ongoma *et al.*, 2025).
- Africa currently imports over \$55 billion worth of food annually, and this figure could double to \$110 billion by 2030 if productivity does not improve<sup>3</sup>.

These figures demonstrate that improving agricultural productivity is both a major development priority and a significant economic opportunity for the continent. Agricultural extension services are central to closing this productivity gap because they enable farmers to access improved technologies, climate-smart practices, and market information.

## Key challenges in extension delivery

Despite the pivotal role of agricultural extension in enhancing productivity and innovation, several persistent challenges continue to limit its effectiveness across African farming systems. The following challenges were identified by participants (academia, policy makers and partners) who attended the 21st RUFORUM Annual General meeting in Gaborone, Botswana in December 2025.

1. **Fragmented and underfunded extension systems:** Agricultural extension services in many African countries remain fragmented across institutions and often rely heavily on short-term donor-funded projects. This limits continuity, institutional coordination, and long-term impact.
2. **Weak research–extension–farmer Linkages:** Research findings generated by universities and national agricultural research institutions are often not translated into practical solutions accessible to farmers, slowing the diffusion of agricultural innovations.
3. **Limited integration of indigenous knowledge:** Many extension models emphasize top-down knowledge transfer and overlook farmers' indigenous knowledge systems and local adaptation strategies.
4. **Youth and gender exclusion:** Women and youth play critical roles in agriculture but often face barriers in accessing extension services, training opportunities, finance, and leadership positions in agricultural value chains.
5. **Weak market and private sector linkages:** Limited collaboration between extension systems and private sector actors restricts farmers' access to inputs, finance, mechanization, and markets.

---

<sup>1</sup><https://www.brookings.edu/articles/with-oda-dwindling-africas-agriculture-sector-can-drive-regional-growth/>

<sup>2</sup><https://www.weforum.org/stories/2024/06/science-based-strategy-key-africa-agricultural-transformation/>

<sup>3</sup><https://www.weforum.org/stories/2024/06/science-based-strategy-key-africa-agricultural-transformation/>

## Strategic opportunities

The participants at the RUFORUM AGM also identified strategic opportunities for enhancing agricultural extension services.

- 1. University-led innovation platforms:** Universities can act as innovation hubs linking research, training, and community engagement through participatory research, farmer learning platforms, and innovation incubators.
- 2. Digital and youth-led advisory services:** Digital technologies and mobile advisory platforms offer opportunities to expand extension coverage, deliver real-time agricultural information, and create employment opportunities for youth.
- 3. Strengthening local seed systems:** Supporting locally adapted seed systems and farmer-managed seed banks can improve climate resilience and enhance crop productivity.
- 4. Multi-stakeholder agricultural innovation systems:** Collaborative platforms linking universities, governments, NGOs, and private sector actors can accelerate the development and scaling of agricultural innovations.

## Key Messages

Investing in agricultural extension systems is one of the most cost-effective strategies for accelerating agricultural transformation in Africa. Development partners can catalyze impact by:

- Strengthening university–extension partnerships to improve knowledge transfer and innovation scaling.
- Supporting youth-driven digital advisory services that expand extension coverage in rural communities.
- Investing in agricultural innovation systems that link research institutions, private sector actors, and farmer organizations.
- Promoting climate-smart agricultural practices that improve productivity while building resilience to climate change.

Targeted investments in extension systems can significantly increase technology adoption, enhance farm productivity, and support sustainable rural livelihoods. For instance, amplifying the role of Innovations Transfer Partners (ITPs) initiative, which leverages ventures led by RUFORUM program alumni (university graduates) to act as last-mile agents for scaling agricultural innovations. The ITPs who attended the AGM presented their scaling models, shared their challenges, and discussed best practices. Further information on ITPs can be accessed here: <https://tagdev.ruforum.org/innovation-transfer-partners>.

## Why Invest Now

- 1. Africa has enormous untapped agricultural potential:** Despite having abundant agricultural land, Africa's yields remain far below global averages, leaving significant room for productivity gains.
- 2. Closing the yield gap could dramatically increase food production:** Improved technologies and extension services could increase crop yields currently 25% less than its potential (Ongoma *et al.*, 2025).
- 3. Food import dependence is rising rapidly:** Without major improvements in productivity, Africa's food import bill could double by 2030.
- 4. Agricultural transformation drives broader economic development:** Agricultural growth is widely

recognized as one of the most effective pathways for reducing poverty, improving nutrition, and creating employment opportunities in rural economies.

## Recommended Actions

1. Increase investment in extension systems: Governments and development partners should expand long-term financing for extension services and support university-led extension initiatives.
2. Strengthen research–extension–farmer linkages: Institutional mechanisms should facilitate collaboration between universities, extension agencies, farmer organizations, and policymakers.
3. Promote youth and gender inclusion: Extension programs should prioritize youth and women through training, mentorship, agribusiness incubation, and improved access to finance and digital tools.
4. Integrate climate-smart and indigenous knowledge systems: Extension approaches should combine scientific innovation with local knowledge while promoting climate-resilient agricultural practices.
5. Strengthen partnerships across agricultural value chains: Greater collaboration between governments, research institutions, private sector actors, and farmer organizations is essential for improving technology transfer and market access.

## Conclusion

Africa's low agricultural productivity is closely linked to weaknesses in extension and advisory systems that fail to effectively connect research innovations with farmers' realities. Strengthening extension systems requires a shift toward integrated agricultural innovation systems that link universities, research institutions, extension agencies, private sector actors, and farming communities. Strategic investments in university-led extension platforms, youth-driven advisory services, and multi-stakeholder innovation systems can significantly accelerate agricultural transformation across Africa. Coordinated and sustained support from governments and development partners will be essential for unlocking agriculture's potential to drive food security, economic growth, and sustainable development.

## References

- Ongoma, V., Brouziyne, Y., Bouras, E. H. and Chehbouni, A. 2025. Closing yield gap for sustainable food security in sub-Saharan Africa – progress, challenges, and opportunities. In *Frontiers in Agronomy* Vol. 7. <https://doi.org/10.3389/fagro.2025.1572061>
- Bio, J. M., Makinde, S., Ehui, S. K. and Ghanem, H. 2025. With ODA dwindling, Africa's agriculture sector can drive regional growth. Brookings Institution.
- Jamali, M. A. 2024. Why a science-based strategy is key in Africa's agricultural transformation. World Economic Forum.