

MECHANIZED

Transforming Africa's Agriculture
Value Chains

SUMMARY



Substantial progress is possible

Despite recent economic recovery, Africa's high rate of population growth, coupled with urbanization and a growing middle class, is fueling a sharp increase in food demand and continued reliance on food imports. As Africa remains the world region with the least mechanized agricultural system and the highest share of food loss and waste, agricultural import expenditure by African countries is rapidly rising.

Technological strategies and innovations along the entire food value chain are urgently needed to meet future food demands, decrease food losses, and accelerate agricultural growth and transformation in Africa. The ultimate contribution of agriculture-sector growth to wealth creation and poverty reduction will depend on technological, policy, and institutional innovations that raise agricultural land and labor productivity faster than has been the case to date. An agricultural mechanization agenda should harness the opportunities for mechanization at each stage of the agriculture value chain. Successful mechanization along the value chain will have to be a priority in future development and growth agendas for African smallholder agriculture and will require not only new technologies but also organizational innovations, such as reliable services and cooperation arrangements for and with farmers. Mechanization of value chains, when done right, can and must be employment enhancing and need not be labor replacing.

Several African governments have stepped up efforts to transform agriculture, often delivering exceptional results. Yet the use of mechanization and new technologies along the agriculture value chain remains low. This was recognized at the continental level and reflected in the Malabo Declaration.

While the increased attention to mechanization is commendable, every effort should be made to avoid the mistakes of the past. This requires learning from failed experiences in Africa, Latin America, and Asia as well as from more recent programs that have succeeded in achieving real, sustainable progress in terms of agricultural mechanization. Evidence and case studies from seven African countries—Ethiopia, Malawi, Mali, Morocco, Rwanda, Tanzania, and Zambia—have shown how to successfully improve the uptake of mechanization and technologies along the entire agriculture value chain. As a result, these countries have achieved high rates of both machinery and agricultural growth.

Country	Machinery Growth	Agricultural Output
Ethiopia	2.8	5.2
Malawi	2.7	6.2
Mali	4.7	4.7
Morocco	3.7	4.0
Rwanda	2.7	5.5
Tanzania	2.9	6.6
Zambia	3.1	8.5

Targeted efforts and interventions include increased investments in mechanization, the design of socially and politically sustainable mechanization pathways, effective public-private partnerships, the development of supportive infrastructure and training facilities, and an African agricultural machinery industry. Governments and the private sector need to promote mechanization in each segment of the value chain and at scale. This will leverage the potential of the agriculture sector to drive growth and generate employment, particularly in rural economies.

Recommendations to accelerate mechanization along the agriculture value chain

1. Elevate national agricultural mechanization investment strategies to a top priority within countries' national agriculture investment plans.

The development of national agricultural mechanization investment strategies that form part of countries' national agriculture investment plans must be encouraged by governments and supported by policy and legal frameworks that incentivize private investments in supply of agricultural equipment.

2. Design socially and politically sustainable mechanization pathways. With new emerging machines and technologies on the horizon, it is ever more important that governments design mechanization strategies that generate new employment opportunities for those working in the rural on- and off-farm economies. This is particularly important given how critical employment is to reducing poverty and migration and maintaining political stability.

3. Prioritize mechanization along the agriculture value chain. Governments must prioritize mechanization along the entire food value chain, not just at the production level. This calls for investments in the design and development of technologies that improve the quantity and quality of food. More emphasis should be placed on post-harvest and processing technologies that help increase the commercialization of farmers' production by adding value to crops, while at the same time reducing food loss and waste and increasing food safety.

4. Investments in supportive infrastructure. Governments must increase their investments in building and improving necessary infrastructure, such as irrigation and transport infrastructure and electricity grids. This infrastructure is needed for smallholder farmers in remote rural areas to be able to harness the opportunities of new machines and technologies and facilitate access to markets that are otherwise inaccessible. Furthermore, the provision of training facilities needs to be enhanced to expand access to opportunities for skill development and upgrading along the value chain, and cooperative systems and the private sector should engage in this.

5. Create a conducive business and services environment. It is essential to incentivize the private sector to take agricultural mechanization to scale through financial securities, smart subsidies, or tax waivers when they get ready to engage with smallholders. Access to new machinery for farming and processing, in particular by smallholders, women, and youth initially requires a supportive fiscal regime in which sales taxes are low and barriers, such as import duties on agricultural machinery, spare parts, and raw materials for local manufacturing, are minimized. A conducive environment would further help to develop entrepreneurial machine-hiring services through the acquisition of machines and tools for production, processing, and trading. Low-income smallholders and women farmers will need to be assisted to be able to pay for such services.

6. Develop an African agricultural machinery industry. Africa needs to further develop its own agricultural machinery industries based on the region's inventiveness and by taking its specific context into account. The industry may grow as a mix of small, creative start-ups and partly in partnership with established international corporations. The private sector can play a crucial role in bringing to scale the design, development, and provision of technologies that have proven impactful. Increased cooperation between the private sector and research institutions is needed to strengthen domestic mechanization efforts by developing locally appropriate and affordable machines and technologies. Substantial investments in public-private partnerships must therefore be made to foster research and development, vocational training, and skills-development programs and to stimulate innovation along the value chain. This needs to include the design and manufacturing of equipment and the servicing of machinery and tools, for example through mechanization service centers and technical extension services, including the collective action of farmer organizations.

7. Empower smallholder farmers' and women's groups. To bring to scale locally developed and proven technologies, the integrated provision of services, such as "one-stop shops" where farmers receive advice to match their demand with the appropriate technologies and inputs, is needed. As women in Africa continue to make up a significant share of farm labor, they need to be actively involved in the innovations and scaling around mechanization and the development of new technologies.

The Malabo Montpellier Panel
Office at International Food Policy Research Institute,
Titre 3396, Lot #2, BP 24063 Dakar Almadies, Senegal
Phone: +221 33 869 98 00 | Fax: +221 33 869 9841

For further information, please contact Katrin Glatzel (Research Fellow, IFPRI), Program Leader of The Malabo Montpellier Panel on mamopanel@cgiar.org.

Please follow the Panel on social media