

United Republic of Tanzania



Policy Brief

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Best International Practices for Efficient Agricultural Transformation

From Global Insights to Practical Policy Actions in Tanzania

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Key Message

Tanzania is at a pivotal moment in its agricultural transformation, having achieved food self-sufficiency and increased public investment, yet still facing low productivity due to limited technology adoption, weak extension coverage, climate risks, and constrained access to quality inputs. Global best practice demonstrates that rapid, inclusive agriculture transformation is possible when countries simultaneously strengthen seed and fertilizer systems, expand climate-smart and water-efficient technologies, modernize extension delivery, and integrate digital solutions to link farmers to finance, markets, and advisory services. In Tanzania, scaling these approaches aligned with ongoing national reforms such as Agriculture Sector Development Programme II, Agenda 10/30, the Agriculture Master Plan, and new seed and soil health strategies can significantly raise yields, reduce input costs, build climate resilience, and drive inclusive agri-industrial growth implicit in the Tanzania Agro-Industrial Development Flagship.

Situation Analysis

Agricultural transformation is characterized by increased productivity, changes in farm sizes, such as the rise of medium and large-scale farms, and the shift in the labor force from primary agriculture to commercial production and off-farm activities. It also involves greater adoption of technology and innovation, improved market access and value addition, diversification of production systems, and stronger linkages between agriculture and other sectors of the economy. Agriculture remains central to Tanzania's economy and labor force, employing about 65% of the population (MoA 2025). The sector is crucial for both poverty reduction and food security, as well as for broader structural transformation, such as shifting surplus rural labor, increasing incomes, and enabling linkages to agri-industrial value chains. Rapid agricultural growth in Tanzania and Africa at large has mainly been driven by land expansion rather than improved productivity, which has contributed to land degradation. Conversely, in high population density countries like Kenya, Rwanda, and Ethiopia, all transformation is largely driven by increased productivity rather than land expansion. Comparing maize and rice yields regionally and globally, Tanzania's average yields are still low (2 tons/ha and 3 tons/ha, respectively; see Figure 1). The World Bank economic update estimated Tanzania's land productivity growth at less than 0.4% per year (World Bank 2019). However, Tanzania aims to enhance the productivity of key commodities by over 50% by 2030 through expanding areas under irrigation to 1.2 million hectares, increasing seed production fivefold, and investing in climate-smart agriculture on 3 million hectares (URT 2024).

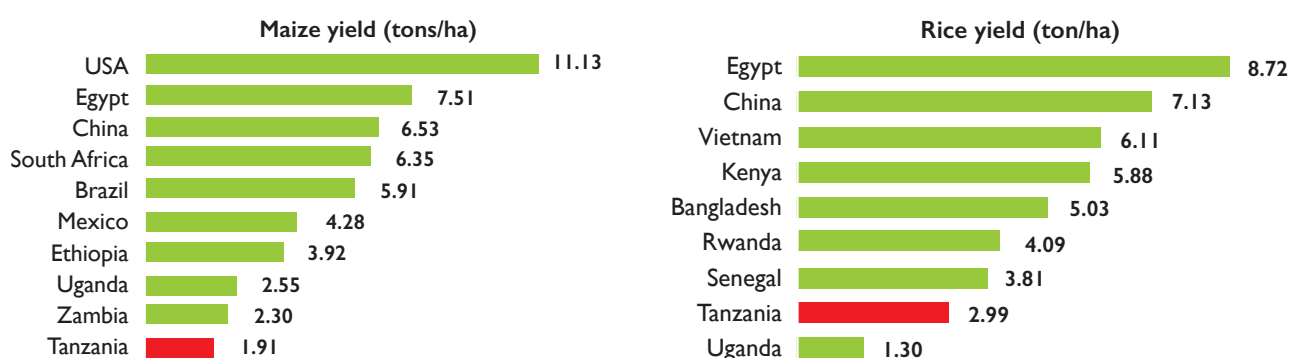
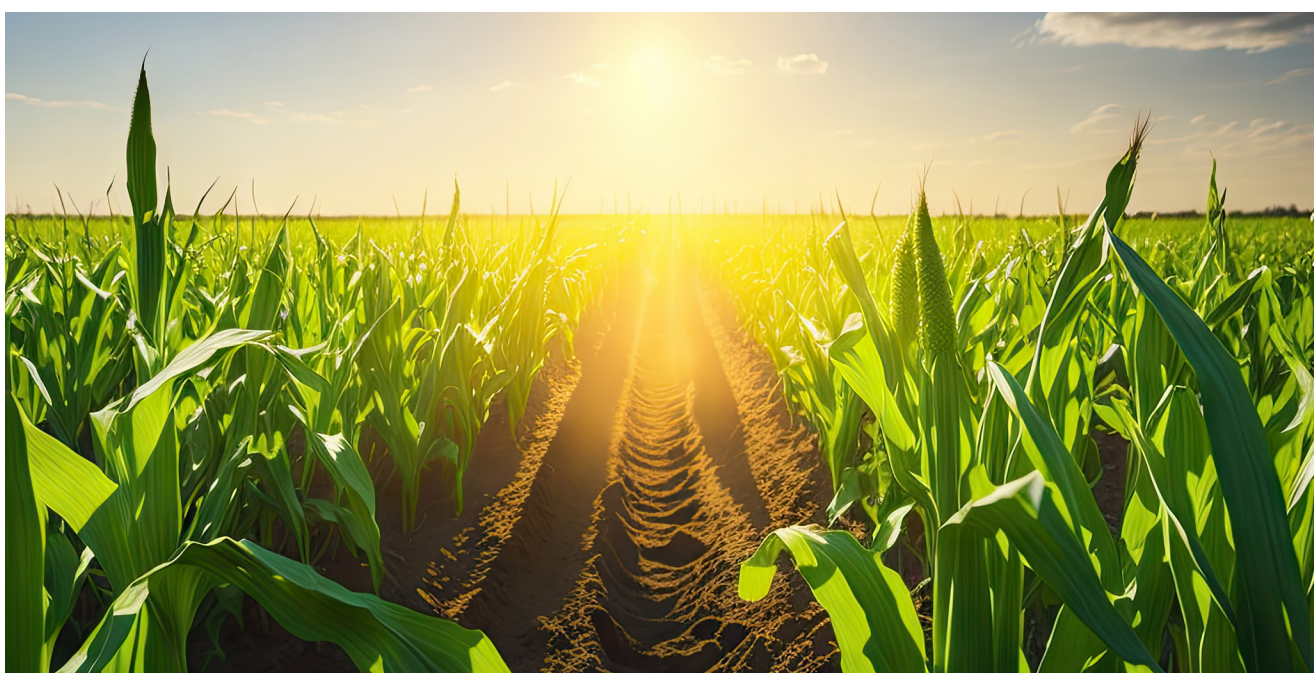


Figure 1. Global productivity comparison of maize and rice yields



Key elements to unleash productivity include;

- ✓ Genetic makeup- Increased use of improved, high-yielding or climate-resilient seed varieties and other planting materials but also the use of improved livestock breeds
- ✓ Plant nutrition – Fertilizer and soil health management for crops and improved feed/fodder and better water access for livestock
- ✓ Agronomic practices – Management of pests and diseases, and improved extension services for both crops and livestock

The three key elements that unleash productivity go hand in hand with the use of improved technologies. According to the 2019/20 Agriculture census, the adoption rate of productivity enhancing technologies in Tanzania is still relatively low. Only one third of farmers use improved seed, one fifth apply inorganic fertilizer and only 2.5% of cultivated land is irrigated. The livestock sector is also predominated by the use of traditional, low-yielding breeds with less than 5% of agricultural households rearing improved cattle breeds.

Extension service is another area contributing to productivity. However, as of 2022, the government had employed 6,704 agricultural extension officers, out of 20,000 required (MOA, 2022), representing only 34% of the staff needed to cover all 3,956 wards and 12,289 villages nationwide. This number of extension officers indicates that, each extension officer was responsible for an average of about 1,300 farmers, far exceeding commonly cited benchmarks such as that by FAO of 1:500 (FAO, 2010) to achieve meaningful coverage. This disparity undermines both adoption of good practices and overall agricultural productivity.

Climate change also poses a significant challenge to agricultural productivity in Tanzania. Unpredictable rainfall, more frequent droughts and floods, rising temperatures, and changing precipitation patterns negatively impact crops, particularly those dependent on rainfall, as well as livestock, through heat stress, disease outbreaks, and shortages of feed and water. According to CIAT and the World Bank (2017), the economic losses from climate change impacts on agriculture are estimated at US\$200 million per annum. The adoption of climate-smart agricultural practices is inevitable for improving productivity.

At the national level, Tanzania has crossed into food self-sufficiency standing at 128% in 2025 (MoA 2025). However, despite the remarkable sufficiency, the country faces high malnutrition with more than 30% of children under five years battling with stunted growth while 7.8% of the population remains malnourished (URT 2022, World Bank 2022). Even though aggregate food supply is sufficient, poverty limits the ability to purchase nutritious and diverse foods hence, most heavily rely on starchy staples.



Poor markets, storage losses and seasonal variability also degrade access and utilization of nutritious foods. The government envisages to attain a 150% food self-sufficiency ratio by 2030, which will also give a better room for food exports including the intra-regional food trade.

Recent Government Interventions

- The Ministry of Agriculture budgetary allocation has quadrupled between 2021/22 (TZS 294 billion) and 2025/26 (TZS 1,243 billion).
- Ministry of Agriculture and Ministry of Livestock and Fisheries have prioritized productivity enhancing interventions in their budget allocations with a focus on key areas including research, improved seeds production, soil health improvements, extension service revitalization, irrigation and Improved livestock breeds.
- Institutionalized reforms: The development of Agenda 10/30, Agriculture Masterplan, Seed Subsector Development Strategy and launch of the Fertilizer and Soil Health Strategy.
- Public investments in seed systems, irrigation, extension services and market infrastructure.
- Promotion of climate smart agriculture.
- Implementation of nutrition sensitive agriculture.
- Launch of the National Farmer Field and Business School Guideline in August 2025 which integrates sustainable agriculture, market, gender, nutrition, facilitation skills and Monitoring, Evaluation and Learning to improve agriculture extension delivery.

Best Practices

- **Productivity promotion:** The National Bank for Agriculture and Rural Development (NABARD) in India supports farmers' access to improved seeds and fertilizer by providing credit and refinancing, capacity building on the use of inputs and infrastructure such as for labs for seed testing. Through the Seed Value Chain (SVC) model, farmers supported by NABARD were able to increase paddy yields by 30% per acre (CRISP & IRRI, 2023).
- **Efficient Water Use:** Israel's adoption of drip irrigation technology and water recycling systems has resulted in a 70% reduction in water use compared to traditional irrigation methods, enabling sustainable agricultural production in arid and water-scarce regions (Megersa & Abdulahi, 2015).
- **Digital Agriculture:** Safaricom's DigiFarm initiative in Kenya provides a comprehensive mobile-based platform that enhances smallholder farmers' access to agricultural inputs, affordable credit, insurance services, digital training, and real-time market information. The platform has enrolled over one million farmers, contributing to improved productivity, and market access (Mercy Corps AgriFin, 2019).
- **The Farmer Field and Business School (FFBS) model,** developed by CARE and subsequently adopted by the Ministry of Agriculture has proven to be a cost-effective, gender-transformative, and climate-smart extension approach. Evidence indicates that FFBS significantly enhances smallholder outcomes, with yield increases of 20–30%, income improvements of about 18%, and an estimated return of USD 31 for every USD 1 invested. The model has also been associated with improved household nutrition and reductions in gender-based violence ((SUA,2025; CARE,2019).



Photo: KTP

Policy Recommendations

- Promote domestic fertilizer manufacturing to reduce import dependency and increase fertilizer availability, accessibility, utilization, and stability. The government should create an enabling environment for private sector investment and prioritize budget allocations in fertilizer manufacturing.
- Accelerate the implementation of the Seed, Fertilizer and Soil Health Strategies Address challenges to access to land for private investors, especially in seed production.
- Government could increase funding in research and development with a focus on developing climate-resilient crop varieties and sustainable farming practices.
- Scale up smallholder irrigation and water-efficient technologies by promoting affordable small-scale irrigation (solar pumps, drip systems, water harvesting) through blended finance, matching grants, and PPP models to increase resilience and water-use efficiency in semi-arid regions.
- Strengthen advisory services by expanding digital extension and advisory services which will complement the e-input systems by expanding digital advisory services, e-vouchers, and market information platforms to reduce extension gaps, improve last-mile input access, and enable traceability in fertilizer and seed delivery.
- Strengthening agro-processing by introducing targeted fiscal incentives, including VAT exemptions on processing equipment and tax relief for investors establishing agro-industrial parks. At the same time, investments in rural infrastructure including feeder roads, reliable electricity, water supply, and storage (including cold chain facilities) are essential to enhance the competitiveness of processing zones.
- While enhancing productivity is essential, catalyzing private sector investment (local and international) is essential. There is a need to create an enabling business and policy environment to attract large investors such as Dole and Del Monte who would serve as investment hubs and facilitators to structured market linkages with smallholder farmers.
- Media houses have poor coverage of agriculture; therefore, there is a need for a coordinated communication strategy.

Policy Implications

- Enhanced adoption of fertilizer and improved seed driven by increased domestic production.
- Increased adoption of CSA.
- Improved affordability of input (fertilizer and seed).
- Increased yields.
- Strengthened smallholder-private sector linkages and improved smallholder incomes.
- More jobs created in the agriculture sector.



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