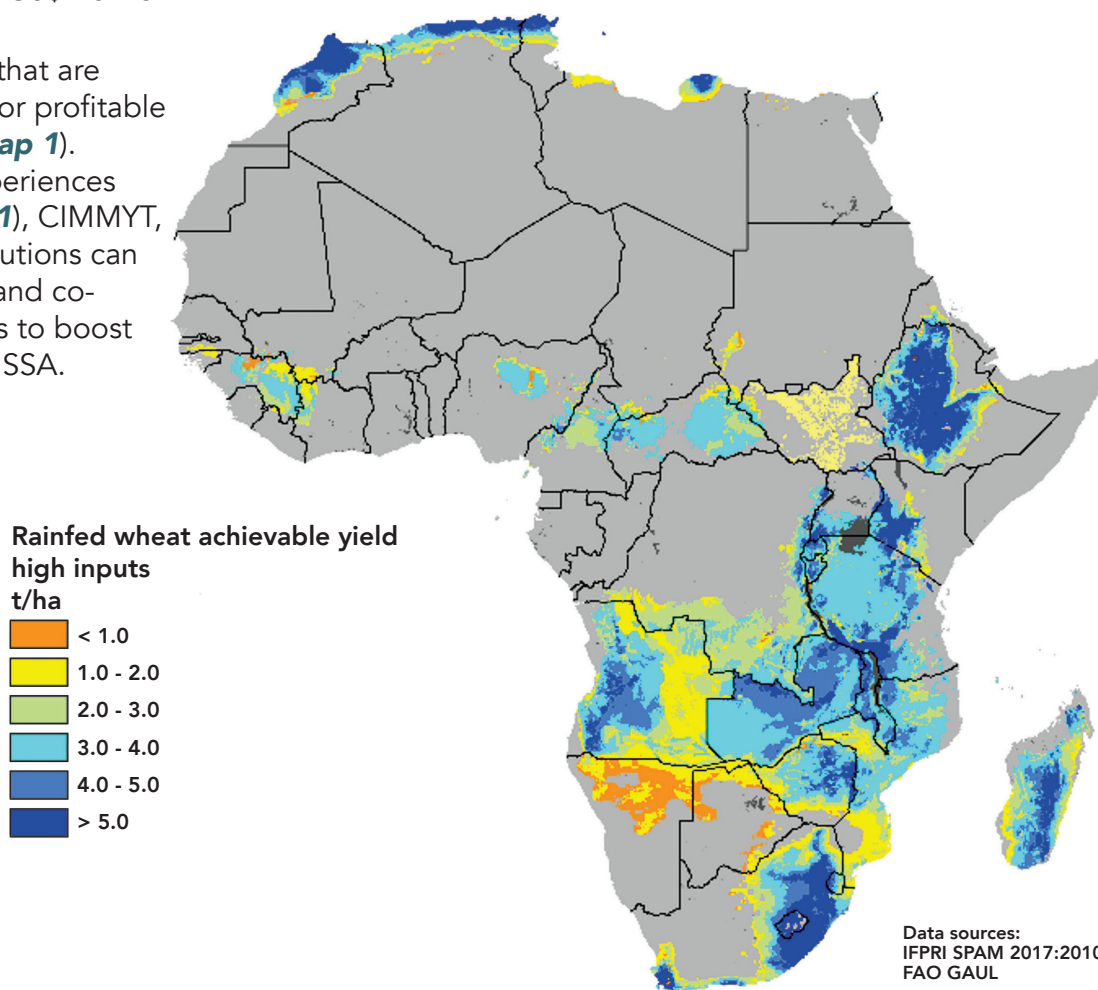


Accelerating Wheat Production in Sub-Saharan Africa

Countries in Sub-Saharan Africa can boost wheat production and reduce dependency on imports while triggering wheat-led agricultural and economic growth by implementing the proposed strategy.

Wheat consumption across Sub-Saharan Africa (SSA)¹ rose more than 6% annually in the last decade, requiring increasing imports to meet the demand. About 10 million tons of wheat grain were produced and 23 million tons were imported each year during the last three years, costing SSA countries nearly US\$7 billion.

SSA has large areas that are potentially suitable for profitable wheat cultivation (**Map 1**). Building on past experiences and successes (**Box 1**), CIMMYT, CGIAR, African institutions can co-design, co-lead, and co-implement strategies to boost wheat production in SSA.



Map 1. Potentially suitable areas for rainfed wheat production in Sub-Saharan Africa.

¹ This document focuses on SSA; a different strategy would be required and can be developed for North Africa.

Box 1. CIMMYT, CGIAR, Wheat and Africa

CGIAR is a global research partnership for a food-secure future dedicated to transforming food, land, and water systems in a climate crisis.

CGIAR partners with African agricultural research and innovation systems to equip farmers with science and technologies to thrive.

Wheat improvement networks of national agricultural research systems and CGIAR, led by CIMMYT, have produced wheat varieties that occupy 70% of the area sown in Africa, Asia, and Latin America.

New varieties feature enhanced yields, climate resilience, disease resistance, nutritional value, and market acceptance. Disease resistance and climate resilience are like free crop insurance.

Fast response capacity has tackled new deadly diseases including Ug99 stem rust in Eastern Africa and wheat blast in Zambia and Bangladesh.

Wheat rust advisories from surveys and forecasting have saved crop losses in Ethiopia through targeted and timely control of rust diseases on susceptible varieties.

CGIAR is identifying pathways to development of the wheat industry in Eastern Africa.

Strong partnership of CIMMYT and CGIAR with national institutes and governments and with regional authorities are crucial to success. For example, a collaborative CIMMYT-national system breeding pipeline was established in 2022 at KALRO, Njoro, Kenya, to accelerate genetic progress.

Vision

Sustainable, inclusive, productive, and profitable wheat-based production systems thrive in SSA with strong governmental and institutional support.

Strategy

A transdisciplinary approach, co-designed, co-implemented, and co-led by partnerships, builds profitable wheat value chains, including accelerated development and dissemination of improved varieties, sustainable wheat-based cropping systems and agronomic practices, mechanization, gender and youth inclusion, capacity-building, and required policy adjustments.



Wheat production in SSA can be enhanced by implementing a multi-faceted approach:

Across SSA

- ◆ Conduct a comprehensive assessment of the current and projected demand for wheat.
- ◆ Identify potentially suitable geographies for wheat production.
- ◆ Determine, prioritize, and estimate required investments to address challenges to wheat production in each potentially suitable geography (**Map 1**); for example, climate variability, pests, diseases, and access to inputs, machinery, and markets.



- ◆ Foster collaboration and networking among African nations, regional organizations, and international partners to share knowledge, resources, and best practices to:
 - Design continent-wide strategies that outline goals, targets, and key interventions to enhance wheat production and productivity.
 - Develop and share high-yielding, disease-resistant, climate-resilient, and nutritious wheat varieties that meet consumer and market preferences.
 - Develop and share crop management practices that maximize yields, economic returns, and sustainability.
 - Strengthen input (e.g., seed sector) and output (e.g., milling) markets to improve the viability of wheat production.

Across regions

- ◆ Establish initiatives, like the East African Wheat Improvement Network and the West & Central Africa Wheat Network, tailored to the specific challenges and opportunities within each region.
- ◆ Encourage knowledge exchange and joint research efforts among countries to address region-specific wheat-related issues, taking advantage of COMESA-EAC-SADC.
- ◆ Focus on promoting regional seed systems and ensuring that improved wheat varieties that meet consumer and market demands are accessible to farmers in targeted geographies.
- ◆ Implement capacity development programs that support farmers to successfully produce wheat, adopting appropriate technologies and sustainable farming techniques.

In each country

- ◆ Prioritize countries with substantial potential and strong government and institutional commitments to accelerate wheat production.
- ◆ Co-develop country-specific plans aligned with national agricultural development plans for current and future wheat-producing nations, considering national needs and priorities in collaboration with governments, local agricultural institutions, stakeholders, and partners.
- ◆ Tailor interventions to address specific challenges for each country.
- ◆ Empower smallholder farmers with access to quality inputs, market linkages, and information.
- ◆ Engage small, medium, and large-scale farmers in building wheat value chains, technology refinement and transfer.
- ◆ Monitor and evaluate impacts, ensuring agility to address emerging challenges and opportunities.
- ◆ This strategy can increase food security, reduce dependence on imports, enhance farmers' incomes, and contribute to economic development using sustainable, innovative, and demonstrated practices that consider challenges (**Box 2**) and opportunities (**Box 3**) for African agriculture.

Please contact CIMMYT² and CGIAR to plan how we can work together to accelerate wheat production in SSA.

² Kevin Pixley – K.Pixley@cgiar.org, Carolina Saint Pierre – C.SaintPierre@cgiar.org, Sridhar Bhavani – S.Bhavani@cgiar.org, and Bekele Abeyo – B.Abeyo@cgiar.org, Global Wheat Program.

Box 2. Key Challenges to Wheat Production in Sub-Saharan Africa.

Although suitable environments exist in SSA, area sown to wheat remains small except for Ethiopia and South Africa because:

- ◆ Wheat productivity requires high plant population densities with mechanized planting and harvesting.
- ◆ Farmers face difficulties in accessing seed of modern wheat varieties suited to African conditions, which are characterized by high moisture and heat stresses and disease pressures.
- ◆ Agronomic advisories tailored to weather are needed to maximize effective use of inputs and to manage soil health, fertility, diseases, and processing quality.
- ◆ Poor transportation, storage and milling/processing infrastructure increase costs and post-harvest losses, both in quantity and quality.
- ◆ Scientists, extension advisors, and farmers need knowledge and technical skills in modern, profitable, sustainable wheat farming techniques for SSA conditions.

Box 3. Intervention opportunities to enhance wheat production in SSA.

- ◆ **Promote context-specific research.** Invest in research to develop high-yielding, climate-resilient, disease-resistant wheat varieties that meet consumer and market needs, as well as cropping systems adapted to local conditions. Build partnerships to leverage modern science.
- ◆ **Empower farmers with knowledge.** Upgrade public and private-sector information services to effectively disseminate in a timely manner to farmers and key value chain actors the latest agricultural knowledge, including cultivation practices, pest management strategies, and nutrient and water management techniques.
- ◆ **Enhance access to quality seed and inputs.** Facilitate access to certified and quality declared seeds, fertilizer, and agrochemicals through public policies and public-private partnerships.
- ◆ **Encourage climate-smart agriculture.** Promote conservation agriculture, low-cost mechanization, soil health management, water harvesting, efficient irrigation techniques, and other sustainable technology and equip farmers to mitigate the impacts of chronic and extreme weather events associated with climate change.
- ◆ **Improve post-harvest infrastructure and market access.** Invest in storage facilities, transportation networks, and market infrastructure to reduce post-harvest losses, facilitate access to local and regional markets, and collaborate on establishing an effective supply chain that guarantees fair prices for both farmers and wheat processors while ensuring adequate wheat quality standards.
- ◆ **Strengthen policy and institutional support.** Ensure an enabling policy environment that encourages investment in agriculture and supports small-, intermediate-, and large-scale farmers. Support monitoring, evaluating, and coordinating wheat production initiatives.
- ◆ **Foster public-private partnerships.** Encourage collaboration between governments, private, and non-governmental organizations to mobilize resources, expertise, and technology to make wheat production profitable and sustainable.