

From land expansion to efficiency: Tanzania's hope for sustainable rice production

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Key Messages

Notwithstanding significant production increases from 1.5 to 2.3 million tonnes between 2001/02 and 2022/23, productivity remains low by international standards, with considerable fluctuations over time and space.

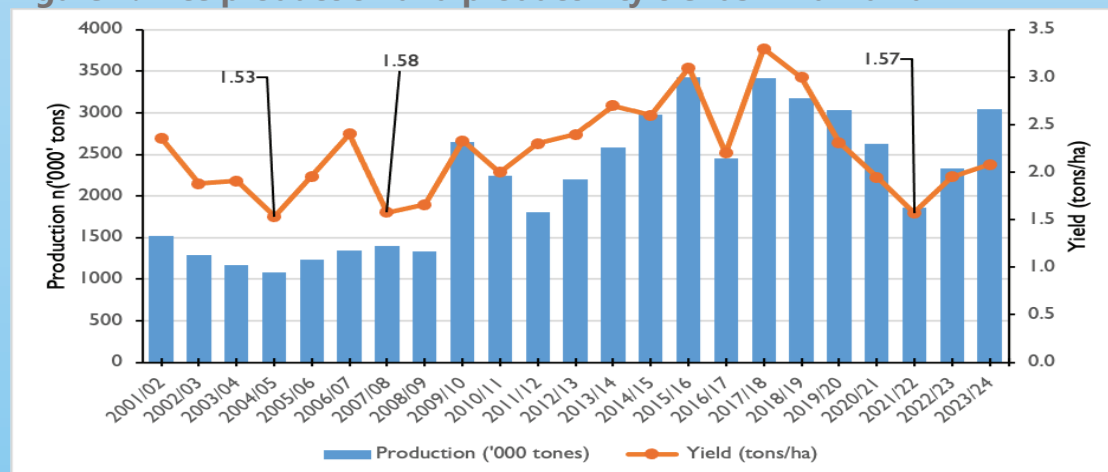
Production increases are mainly driven by the expansion of cultivated areas, with limited productivity gains.

Rising demand for land resources and concerns about environmental degradation call for targeted policy action to enhance productivity, the main driver of rice production.

Introduction

Rice is the second most important crop in Tanzania after maize, contributing significantly to food security, livelihood, and exports. Domestic rice production gradually rose from 1.5 million tonnes in 2001/02, peaking at 3.4 million tons in 2017/18, before dropping to 2.3 million tons in 2022/23 (Figure 1). This production trend closely reflects changes in productivity, which has fluctuated around an average of 2.2 tons per hectare. The rise in yield from 1.5 tonnes/ha in 2004/05 to 3.3 tonnes/ha in 2017/18 indicates notable improvements in productivity during that period. However, since 2017/18, yields have declined significantly, falling to 1.6 tonnes/ha in 2021/22—the lowest level recorded since 2007/08. This drop was largely attributed to extremely low rainfall during the 2020/21 rainy season (Busungu, 2023).

Figure 1. Rice production and productivity trends in Tanzania



Source: Ministry of Agriculture (MOA)

Tanzania's productivity lags other countries, both globally and within the region. Average yields from 2019–2023 were 2.2 tons/ha compared to 6.6 in Brazil, 4.2 in India, 9.0 in Egypt, and 5.8 in Kenya (Table 1). Notwithstanding the low yields, Tanzania intends to increase rice productivity to 4 tonnes/ha by 2030 and expand the area under rice production from the current 1.7 to 2.2 million hectares (URT, 2019)¹.

Table 1: Rice Productivity (tons/ha) in Selected Countries: 2019-2023

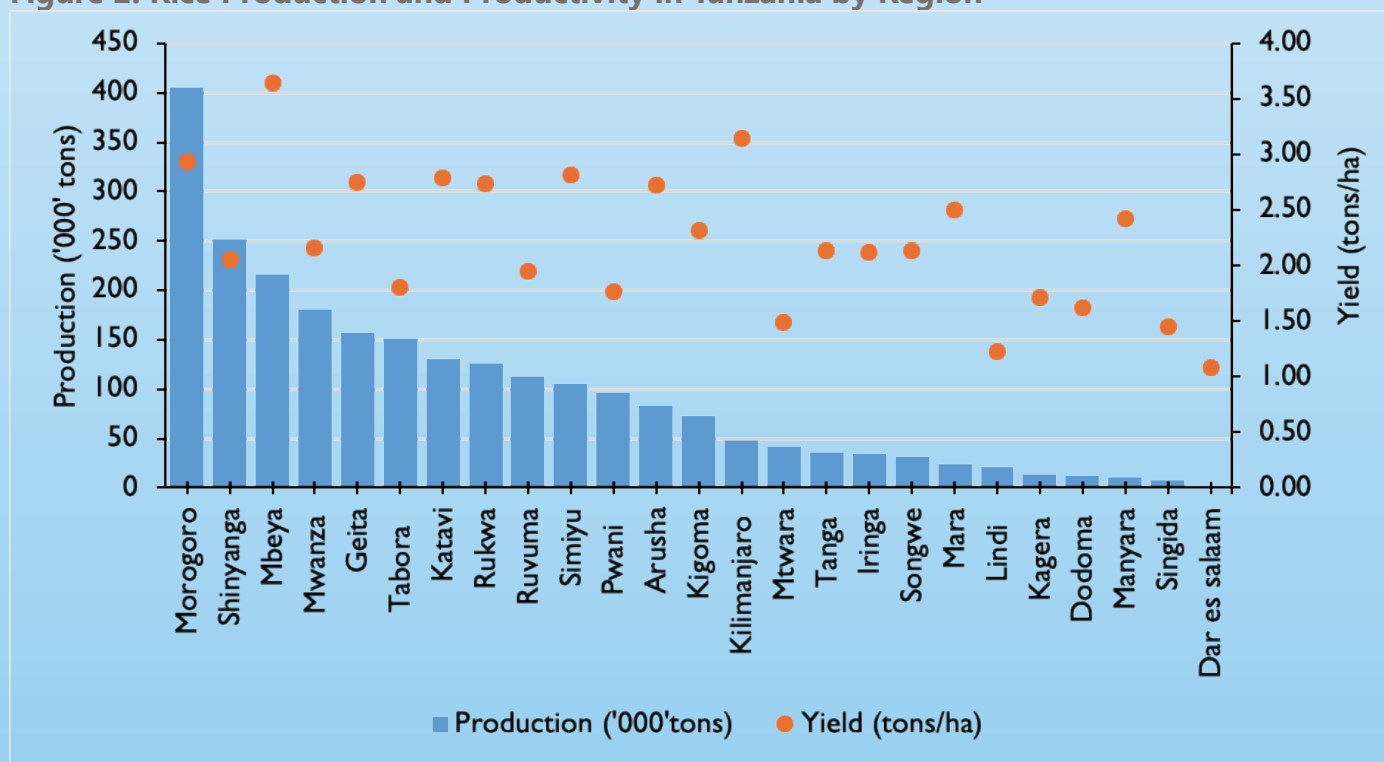
Country	2019	2020	2021	2022	2023	Average
Brazil	6.1	6.6	6.9	6.6	6.9	6.6
India	4.1	4.1	4.2	4.3	4.3	4.2
Egypt	8.8	9.6	9.1	8.9	8.7	9.0
Kenya	6.4	6.4	5.8	4.3	5.9	5.8
Tanzania	3.0	2.3	1.9	1.6	1.9	2.2

Source: FAOSTAT and Tanzania Ministry of Agriculture (MOA)

Note: Tanzania data are based on official figures from the Ministry of Agriculture (MOA)

The main rice-producing regions in the country are Morogoro, Shinyanga, Mbeya, Mwanza, Geita and Tabora (Figure 2). Collectively, these regions account for 50% of the country's total rice production. Rice productivity varies from one region to another including among the leading producers. Spatial variation in productivity is also observed across the major growing regions over time with a third of all regions obtaining yields above the national average.

Figure 2: Rice Production and Productivity in Tanzania by Region



Note: Computations are based on available data for each region from 2005/06 to 2018/19

Source: Ministry of Agriculture (MOA)

¹ National Rice Development Strategy Phase II (NRDS II) 2019-2030

Drivers of Rice Production in Tanzania

Historically, rice production has been driven by rising productivity and the expansion of cultivated areas. Table 2 presents the compound annual growth rates for rice production, cultivated area, and yield, calculated for three periods: 2000/01–2010/11, 2011/12–2023/24, and the overall period from 2000/01 to 2023/24.

Over the past 25 years, production grew at a compound annual rate of 7.9%, driven largely by area expansion (4.8%) and modest yield gains (2.9%). From 2000/01–2010/11, production growth of 9.0% was mostly from area expansion (8.5%) with little productivity gain (0.5%). Between 2011/12–2023/24, growth slowed to 6.4%, with yield improvements (3.3%) playing a larger role.

Table 2: Compound Growth Rate of Area, Production, and Productivity

Season:	Growth (%):		
	Production	Area	Yield
2000/01-2010/11	9.0	8.5	0.5
2011/12-2023/24	6.4	3.1	3.3
Overall Period (2000-2024)	7.9	4.8	2.9

Source: Author Computations based on Agricultural Basic data.

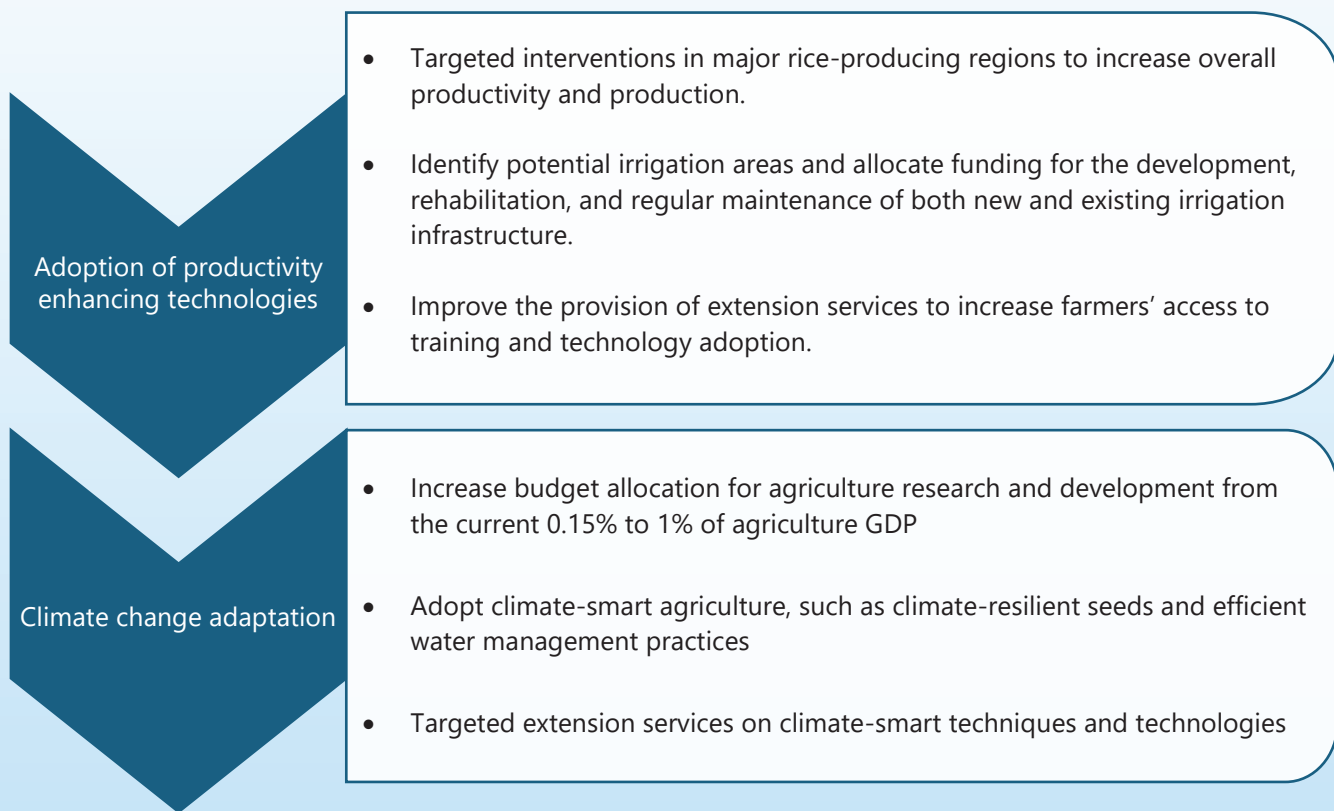
Recent productivity growth has been supported by improved technologies, including high-yielding and drought-resistant seed varieties, inorganic fertilizers, and expanded irrigation. Mkanthama et al (2018)² found that irrigated paddy fields had higher yields than rainfed systems. Irrigated land area in the country increased from 289,385 hectares in 2019/20 to about 600,000 hectares in 2022/23 (URT, 2024), reflecting major public investment in irrigation schemes. Training and extension services have also played a critical role. Nakano (2018)³ demonstrated that farmer-to-farmer knowledge transfer—covering improved seed use, fertilizer application, bund construction, plot levelling, and row transplanting—significantly raises yields.

While productivity-enhancing technologies are vital, their uptake may sometimes be constrained by farmers’ inability to bear the cost of adoption. For example, the recent global increase in the price of fertilizers and other agricultural inputs has forced farmers in Burkina Faso, Ethiopia, Malawi, Nigeria and Tanzania led to increased debt among farmers, reduced savings and use of fertilisers (Amankwah et.al, 2024).

Conclusion and Policy Recommendations

Over the years, Tanzania has witnessed a significant expansion in domestic rice production, making it the second most important food crop in the country. The increased production over the past decade has mainly been driven by an increase in cultivated land, but with a slow shift towards productivity growth as the main driver. Overall rice productivity in Tanzania is still relatively low compared to the global and regional averages. Further, efforts to improve productivity are undermined by recent increases in global fertiliser prices, increasing demand for land resources, changes in precipitation and soil quality owing to climate change. This study proposes the following policy measures to improve rice yields in Tanzania:

²Mkanthama et al (2018,). Technical Efficiency of Rainfed and Irrigated Rice Production in Tanzania
³ Nakano et al (2018), Is farmer-to-farmer extension effective? The impact of training on technology adoption and rice farming productivity in Tanzania



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