



MALAWI

Agriculture Public Expenditure Review

Synthesis Report, February 2025



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Acronyms

ADD	Agricultural Development Division
AfDB	African Development Bank
AGCOM 1.0	Agriculture Commercialization Project
AgPER	Agriculture Public Expenditure Review
AHL	Auction Holdings Limited
AIP	Affordable Inputs Program
APES	Agricultural Production Estimates Survey
ARET	Agricultural Research and Extension Trust
ASP	Area Stakeholder Panel
ASWAP	Agricultural Sector-Wide Approach Support Project
AU	African Union
BCR	Benefit-Cost Ratio
CAADP	Comprehensive Africa Agricultural Development Programme
CGIAR	Consultative Group on International Agricultural Research
CPI	Consumer Price Index
DAES	Department of Agriculture and Extension Services
DARS	Department of Agriculture Research Services
DDP	District Development Plan
DHRMD	Department of Human Resources Management and Development
DoF	Director of Finance
DPD	Director of Planning and Development
ECF	Extended Credit Facility
ECG	Enabler Coordination Group
EPA	Extension Planning Area
EU	European Union
FAO	Food and Agriculture Organization (of the United Nations)
FCDO	Foreign, Commonwealth and Development Office
FISP	Farm Inputs Subsidy Program
FSC	Finance Services Committee
GDP	Gross Domestic Product
HSRS	Harmonized Seed Regulatory System
IFMIS	Integrated Financial Management Information System
IFPRI	International Food Policy Research Institute
IHS	Integrated Household Survey
IMF	International Monetary Fund
IPC	Integrated Food Security Phase Classification
IPS	Integrated Production System
KASFA	Karonga Smallholder Farmers Association
MAFAP	Monitoring and Analyzing Food and Agriculture Policies
MDAs	Ministries, Departments, and Agencies
MIP-1	First 10-Year Implementation Plan

MOST	Malawi Oil Seed Sector Transformation
NAEASS	National Agricultural Extension and Advisory Services Strategy
NAIP	National Agriculture Investment Plan
NAMIS	National Agriculture Management Information System
NAP	National Agricultural Policy
NASFAM	National Smallholder Association of Malawi
NEPAD	New Partnership for Africa's Development
NGO	Nongovernmental Organization
NLGFC	National Local Government Finance Committee
NPC	National Planning Commission
NRP	Nominal Rate of Protection
NSO	National Statistical Office of Malawi
OECD	Organization for Economic Co-operation and Development
OSP TWG	Malawi Oil Seed Products Technical Working Group
OPV	Open-Pollinated Variety
PCG	Pillar Coordination Group
PER	Public Expenditure Review
PPP	Public-Private Partnership
PSM	Propensity Score Matching
R&D	Research and Development
SADC	Southern African Development Community
SSU	Seed Services Unit
TAML	Tea Association of Malawi Limited
TC	Tobacco Commission
USAID	United States Agency for International Development
VAC	Village Action Committee
WFP	World Food Programme
WUA	Water Users' Association

Executive Summary

The agriculture sector is the most crucial sector in Malawi, providing jobs, contributing significantly to the gross domestic product (GDP), driving exports, and ensuring food security. It accounted for 23 percent of GDP between 2020 and 2022, surpassing both manufacturing and wholesale and retail trade. In 2019, it provided 76 percent of employment. Despite being mainly composed of rain-fed subsistence farming, agriculture contributed over 85 percent of the country's export earnings, largely due to tobacco sales.

Despite significant public sector support, the agriculture sector's performance has been lackluster over the past decade. Various external shocks and inefficiencies in public spending and value chains and policy inconsistencies have had significant impacts on declining productivity. This report identifies the root causes and offers recommendations to improve the sector's performance.

The report evaluates agricultural public support in Malawi and presents repurposing options to improve the effectiveness of this public support. The analysis is guided by the Monitoring and Analyzing Food and Agriculture Policies (MAFAP) approach which captures all support to the food and agriculture or agrifood sector irrespective of the implementing agency. It includes spending by the government as well as off-budget spending by donors. Importantly, the methodology also captures price incentives provided through non-budgetary policy measures such as trade policies. The report focuses on expenditures from 2016/17 to 2020/21, with additional data extending to 2024/25. The price incentives analysis covers the last 10 years from 2014 to 2024. In addition, several thematic deep dives on input subsidies, irrigation, extension, and the seed system were also conducted. The review is based on Integrated Financial Management Information System (IFMIS) data from the Ministry of Finance and Economic Affairs and primary data collected by the team. All support is reported in nominal terms unless otherwise specified.

Trends in Public Agrifood Expenditure

Between 2016/17 and 2021/22, spending on food and agriculture in Malawi increased significantly. Overall agrifood expenditures¹ rose by 123 percent in nominal terms (or 41 percent in real terms) going from MWK 251 billion in 2016/17 to MWK 560 billion in 2021/22. Figure 1 shows this trend highlighting the share of on-budget and off-budget expenditures. Results show that compared to off-budget spending, on-budget spending on the sector rose in both absolute and relative terms. This increase was primarily driven by the expansion of Malawi's input subsidy program, the Affordable Inputs Program (AIP), which replaced the Farm Inputs Subsidy Program (FISP) in 2020/21. In nominal terms, this was an increase of 131 percent, going from MWK 148 billion to MWK 343 billion. In real terms this increase was about 46 percent; however, as Figure 2 shows, while government spending has continued to increase in nominal terms, there has been a sharp decline in real terms due to macroeconomic challenges that led to devaluation of the currency.

On average, Malawi has consistently spent 9.2 percent of the national budget on agriculture (Figure 3). However, most of this spending was directed toward input and food subsidies, with agricultural inputs comprising 66 percent of on-budget agrifood expenditures, while less than 11 percent went to crucial public goods such as research, irrigation, and infrastructure. Investments in extension services, seed

¹ In this report, the expression 'agriculture expenditures' refers to the totality of spending on the sector which includes both on-budget and off-budget spending. The review period for public expenditures is 2016/17 to 2021/22 unless stated otherwise.

systems, and irrigation offered higher benefit-cost ratios (BCRs) compared to subsidy programs. Additionally, agrifood spending was heavily focused on crops, with livestock, aquaculture, and fisheries receiving only 5.1 percent of the budget. This trend was also observed in off-budget allocations.

Figure 1: On- and Off-Budget Agrifood Spending, 2016–2022

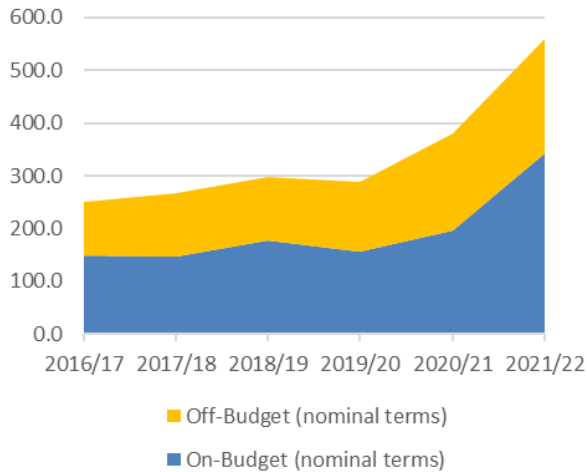
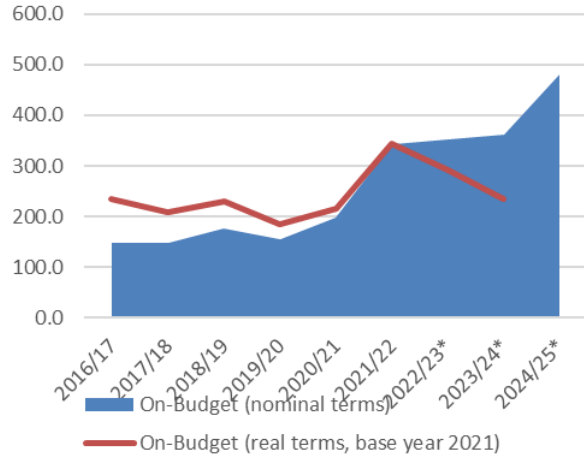


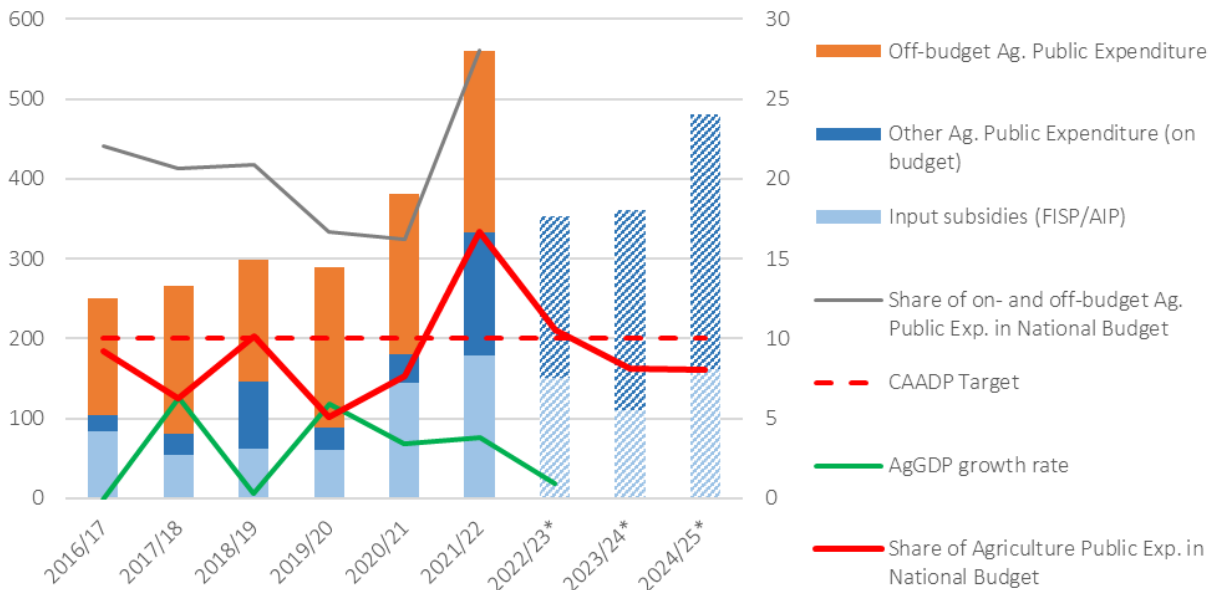
Figure 2: On-Budget Public Agrifood Expenditures in Real and Nominal Terms, 2016–2025



Source: Authors.

Note: *. Data after 2022 are preliminary estimates.

Figure 3: Public Agrifood Spending as a Share of the National Budget - Malawi versus CAADP Target, 2016–2022



Note: CAADP = Comprehensive Africa Agriculture Development Programme.

* 2022/23–2024/25 are incomplete estimates based on the 2024/25 Approved Financial Statement from the Government of Malawi. Off-budget estimates not available after 2021/22.

Expenditure on fertilizer subsidy programs has dominated the public expenditures over the review period. Despite providing relatively low returns on investment, these programs have consistently consumed over two-thirds of the budgeted agrifood spending. The transition from the FISP to the AIP resulted in an increase in beneficiaries—from approximately 900,000 to 3.7 million—sharply increasing the cost of the program. This expansion, along with a rise in fertilizer prices, caused the program’s budget to increase from MWK 54.7 billion (US\$76.6 million) in 2017/18 to MWK 178.4 billion (US\$211.1 million) in 2021/22. The program has subsequently reduced its number of beneficiaries and costs through more targeted measures; yet, its expenditures are projected to increase again, reaching an estimated MWK 161 billion (US\$96.8 million) in 2024/25.

Central government spending is focused more on private transfers whereas local government spending is directed toward provision of public goods and services. The input subsidy program and food aid (Malawi’s major subsidy programs) accounted for approximately 58 percent of the central government’s agrifood spending. Specifically, these programs made up 46 percent and 12 percent of the central budgetary spending, respectively, over the review period. On the other hand, local government spending was focused on extension and irrigation, which represented 65 percent and 8 percent of the budgets, respectively. Generally, local governments allocated more resources to research and marketing compared to the central government. Off-budget foreign development partner expenditures were even more geared toward public goods and services, supporting extension, general expenditures, administrative spending, agricultural inputs, and irrigation.

Malawi’s agrifood sector has depended heavily on foreign donor financing. Between 2016/17 and 2021/22, foreign funding accounted for 54 percent of Malawi’s agricultural public expenditure review (AgPER) expenditures, inclusive of development project expenditures not captured in the national budget (off-budget expenditures).² Foreign funding also accounted for over one-fifth (20 percent) of on-budget expenditures. Over the review period, more resources came from development partners than from the government every year except for 2021/22, when AIP expenditures surged. In real terms, foreign financing slightly declined (–1.9 percent) over the review period and tended to shift off-budget. Overall, donor financing has been both beneficial and challenging. Donor funds have increased overall spending, mainly supporting high-return areas such as extension, research, and irrigation, while domestic resources often cover administrative and subsidy costs. However, most donor funds bypass the national budget and are spent independently by various development partners, leading to less government control and coordination.

Key Findings for Major Programs

Fertilizer Subsidy Program

Despite its low value for money, a substantial share of budget has been consistently allocated to fertilizer subsidies. Results show a BCR of 1 or below for fertilizer subsidies. This implies that the additional output produced by beneficiary households of the subsidy program was of equivalent or lower value to the subsidy itself. This indicates that the input subsidy system has been cost-inefficient and ineffective. Although the government started reforming the program in 2022/23 by improving the targeting mechanism, deeper reforms of the program are needed which include provision of

² The expression ‘AgPER expenditures’ consistently denotes both on-budget and off-budget public agrifood expenditures in this document.

complementary public goods and services. In this regard, the World Bank is supporting the Government of Malawi to pilot new design instruments of the input subsidy program to make it more effective and deliver on sustainability outcomes such as improving soil health.

Extension Services

Extension services have significant potential. The value of crop output of households with access to public extension services was found to be 16 percent higher compared to those without access. This translated into a BCR of 2.5. However, Malawi's BCR of 2.5 is low compared to regional standards, where other Sub-Saharan African countries report BCRs between 6.8 and 14.2 for extension services. This suggests that improving the quality of these services and better coordination could deliver even greater value for money.

Irrigation

Irrigation has the potential to significantly improve returns but remains underutilized. It can mitigate climate risks and boost agricultural productivity; however, focus groups with key stakeholders show that maintenance of infrastructure is a challenge. Moreover, farmers who have access to irrigation continue to grow low-value crops and grow crops for only one season. In addition, literature suggests that the cost of irrigation infrastructure in Malawi is also among the highest in Sub-Saharan Africa. Future work should conduct a detailed impact assessment of irrigation projects to understand drivers of high costs and poor utilization by farmers.

Seed Systems

Seed adoption rates in Malawi have been low despite yield benefits. Agricultural output was 18 percent higher for farmers using improved seeds, but due to the lack of cost data, the BCR could not be calculated. Adoption has been hampered by supply issues, quality problems, lack of extension access, and low trust. Involving private sector actors and investing in quality assurance and distribution are critical to improving the seed system.

Market- and Policy-Driven Price Incentives

Farmers face significant price disincentives due to restrictive trade policies, price-distorting interventions, and value chain inefficiencies. Price incentive analysis reveals negative nominal rates of protection (NRPs) for key crops, indicating their implicit taxation. A negative NRP, implies disincentives for farmers to increase production and invest in productivity-enhancing technologies. These results also show incoherence in government policies, as on one hand distortive policy measure suppress farmgate prices for farmers, while at the same time the government is spending scarce fiscal resources to subsidize farmers and improve profitability.

Key Takeaways and Recommendations

Looking ahead, reallocating government spending from input subsidies to public goods and services will significantly enhance sector performance and growth. Comparative cost-benefit analyses and global evidence highlight that investments in public goods and services yield much higher returns than subsidies. In this context, a prime opportunity lies in reforming the AIP, the largest program in Malawi. The program can be improved by targeting farmers who can use fertilizers effectively but are underusers due to

affordability considerations. It is important that input subsidies are not used as a social protection scheme as there are more efficient tools such as cash transfers which can be used to achieve those goals.

Improving the quality of spending and not just the level of spending is necessary to achieve agricultural growth. Malawi has been consistently allocating close to 10 percent of its budget toward agriculture; however, its challenges of low productivity and lack of competitiveness and diversification have persisted. This is partly a function of the nature of public policies and support programs which incentivize growing maize and discourage investments by distorting output prices. There is a need for an integrated approach to the adoption of improved technologies such as fertilizers and improved seeds. Quality extension services can play a key role by disseminating knowledge on best practices and how to effectively use these technologies.

Given agriculture's high level of vulnerability to climate shocks, Malawi should invest more resources in managing climate risk. Efforts are needed at multiple levels and instruments to consider, develop, or scale up, including early warning systems; safety nets; agricultural and crop insurance schemes; and climate-smart research, extension, and irrigation.

Based on the above, the recommendations of this report are as follows:

- **Downsize and reform the AIP.** Further downsizing the AIP would free up a lot of resources for more productive investments in public goods and services (such as infrastructure, research, and extension) and a more balanced (and health-informed) set of agricultural products. Meanwhile, there is considerable scope for the program to better target and support beneficiaries, including by leveraging digital information systems, renewing the program's focus on soil health and extension, and enabling it to support diverse farming needs across a range of crops and agroecological contexts. Pilot-testing and evaluating changes in the program will help guide and build confidence in reforms before they are rolled out nationally.
- **Strengthen extension services.** Improving the outreach and effectiveness of extension services would benefit particularly from addressing staff shortages, enhancing staff training, and investing in operational resources. Partnerships with non-governmental organizations (NGOs), academia, and the private sector can enhance coordination and leverage additional resources. Digital tools and mobile platforms might offer effective means of reaching underserved farmers, warranting further exploration of how they might be deployed given existing digital access constraints.
- **Revitalize the seed system, promote private sector involvement and farmer-centered approaches.** Strengthening partnerships with seed producers, enhancing certification processes, and investing in research and development (R&D) can increase the availability and adoption of quality seeds. Public awareness campaigns and improved research-extension links can also help address misconceptions and encourage uptake.
- **Reduce trade barriers and market inefficiencies to enhance farm investment and production incentives.** Removing export bans (maize, soybeans), lowering export tariffs and quotas (tobacco, sugar), and mitigating value chain inefficiencies can boost farms' competitiveness and profitability, thereby encouraging the investments needed to increase their productivity and output. Key opportunities lie in simplifying regulatory processes and reducing transportation costs and marketing costs.

- **Invest more in climate risk mitigation and make climate resilience a cross-cutting focus of agrifood sector support.** A priority would be to develop national early warning systems addressing multiple risks including pests and diseases and extreme weather. Investments could be directed, among other things, to the development of digital platforms, links to regional systems, and dissemination strategies. Investments in effective irrigation systems and capacity, the development and promotion of climate-adapted crops and varieties (including via diversified seed systems), and the promotion of locally relevant climate-smart agriculture practices and solutions (backed by access to finance and pluralistic extension services) also contribute to mitigating climate risk and building national and farm-level resilience.
- **More evidence (monitoring and evaluation) and evidence-based policymaking are needed to guide more efficient and effective resource use.** Malawi's agricultural sector has a chance to prosper if its resources are used more strategically. The key lies in redirecting them to more cost-efficient and impactful programs and approaches. For this, better monitoring systems and assessments of key projects are needed. Hence, there is a need to enhance the capacity for monitoring and evaluation and more systematically carry out rigorous assessments of agrifood support programs—and of course, to anchor uses of public resources in the evidence they generate.

Introduction

Agriculture is the cornerstone of Malawi’s economy, significantly contributing to gross domestic product (GDP), export earnings, employment, and food and nutritional security. Given its critical role, the sector garners substantial policy attention. *Agricultural Productivity and Commercialization* is one of the three pillars of Malawi’s long-term vision, *Malawi 2063*.

Despite its prioritization, the agricultural sector has delivered lackluster performance. Malawi has consistently met or exceeded the 10 percent budget allocation benchmark recommended by the Comprehensive Africa Agriculture Development Programme (CAADP) of the African Union (AU). However, despite this, issues such as low productivity persist. Based on a review of Malawi’s agricultural public expenditures, this report highlights opportunities for the public sector to better direct and more efficiently spend the resources it devotes to the sector, enhancing both policy coherence and implementation.

The purpose of this report is to provide the Government of Malawi with the evidence it needs to better align agriculture public expenditures with its vision for the agrifood sector and the country at large. To this end, it presents the key results and insights from several pieces of analysis. They include an updated agricultural public expenditure review (AgPER) for the period 2016/17–2021/22; price incentives analysis for the period 2014–2024; and thematic deep dives on fertilizer subsidies, irrigation, extension services, and the seed system.

The core analysis that this report is based on examined public agriculture spending from 2016/17 to 2020/21. This period is referred to as the ‘review period’ or the ‘studied period’, although, as the report makes explicit, the analysis also covered expenditures from 2022/23 to 2024/25 to the extent allowed by data availability.³ The review was based on public expenditure data from the Ministry of Finance and Economic Affairs (Integrated Financial Management Information System [IFMIS]) and the National Local Government Finance Committee (NLGFC), as well as key informant interviews with Directors of Finance (DoFs) and Directors of Planning and Development (DPDs) from selected districts in Malawi. Expenditures were classified in accordance with the typology of agrifood expenditures of the Food and Agriculture Organization (FAO) of the United Nations-Monitoring and Analyzing Food and Agriculture Policies (MAFAP).⁴

In terms of scope, the AgPER examined spending in the agriculture sector by all levels of government, as well as off-budget spending of donors. The review captures spending by all levels of government (central and local), as well as spending supported by both national and foreign development partner (donor) resources, as some of the latter do not appear in the budget. In the remainder of this report, the totality of agriculture expenditures covered by the review, including off-budget spending, is referred to as ‘AgPER expenditures’ for short. All expenditures reported here are expressed in nominal terms unless otherwise specified.

As noted, the AgPER was complemented by several additional pieces of analysis, which are also synthesized in this report. The deep dives used literature reviews and key informant interviews to better

³ In addition, some of the analysis presented in this report (notably, the benefit-cost analysis) was based on a different set of years, and in these instances, the review or studied period reflects the specified year range.

⁴ FAO-MAFAP 2013.

https://www.fao.org/fileadmin/templates/mafap/documents/Methodological_Guidelines/Methodological_Guidelines_-_Volume_II_-_Public_Expenditure_-_Final.pdf.

understand policy support for agricultural extension, irrigation, and seed systems as well as Affordable Inputs Program (AIP) reforms pathway. An effectiveness analysis of select programs was carried out based on the fifth (most recent) Integrated Household Survey (IHS) (NSO 2020). The price incentive analysis shed light on the effects of domestic agrifood policies and market conditions on commodity prices, using the FAO-MAFAP methodology and drawing on key informant interviews.

The report is organized as follows: Chapter 1 describes the role and performance of the agricultural sector in Malawi and the country’s macroeconomic performance. Chapter 2 presents the agricultural policy framework. Chapter 3 describes the agricultural budgeting process in Malawi. Chapter 4 summarizes the key findings from the core AgPER, the deep dives, and the incidence and effectiveness analysis. Chapter 5 discusses the efficiency and utilization of public agrifood resources. Chapter 6 summarizes the key findings from the price incentive analysis. Chapter 7 concludes by offering recommendations on how to strengthen the effectiveness of public agrifood spending in Malawi.

1 Role and Performance of Agriculture in Malawi

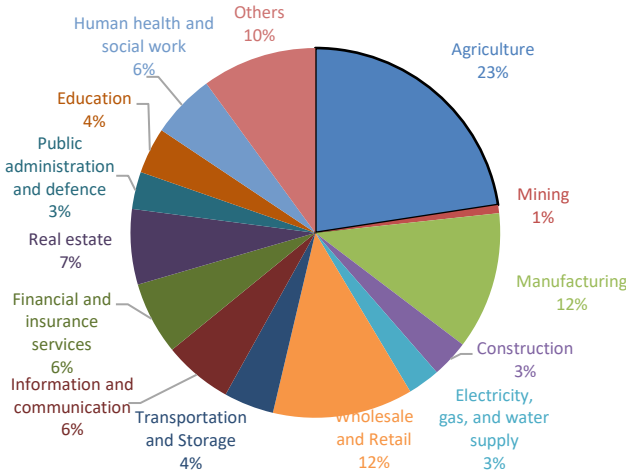
1.1 Agrifood Sector Performance

Agriculture is Malawi’s most important sector in terms of economic value added, jobs, and food security. Between 2020 and 2022, the sector contributed an average of 23 percent to GDP, ahead of manufacturing, and wholesale and retail trade, which accounted for 12 percent each (Figure 4). As of 2022, crops accounted for 77 percent of the value of agricultural output, while livestock accounted for most of the remainder (FAO 2024). In terms of employment, the sector accounted for 76 percent of total employment in 2019 (Mangani et al. 2022). In rural areas, agriculture’s share of employment is even more pronounced, having reached 93 percent (IFPRI 2022a). With over half of its population living below the country’s poverty line (NSO 2021) and one-quarter in extreme poverty, Malawi’s food security mostly relies on subsistence farming carried out on micro plots. Recurrent shocks and poor livelihood strategies exacerbate vulnerability, leading to high levels of acute food insecurity. Between May and September 2024, approximately 20 percent of households across all districts—about 4.2 million people—were expected to experience acute food insecurity (Integrated Food Security Phase Classification [IPC] Phase 3 or above). This marked a troubling increase from 700,000 people in 2019, highlighting a worsening trend. The situation was expected to deteriorate further during the October 2024–March 2025 lean season, with 5.7 million people (28 percent of the population) expected to be in IPC Phase 3 or above.

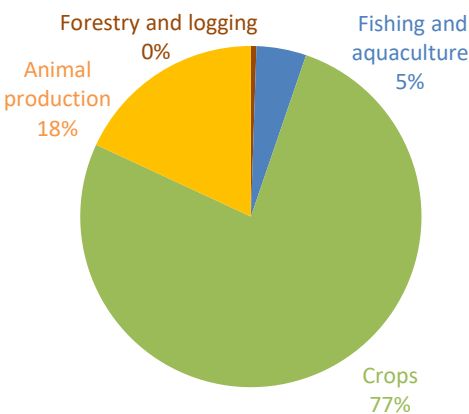
Malawi’s exports are dominated by agricultural products. Agrifood exports accounted for over 85 percent of the national export earnings. Tobacco alone accounted for about 40 percent of those earnings, the largest share followed by those of sugar and tea, which accounted for 10 percent each. In other words, three agricultural commodities account for about 60 percent of total exports (Government of Malawi 2022b).

Figure 4: Agricultural Value Added, 2020–2022

(a) Value Added by Sector



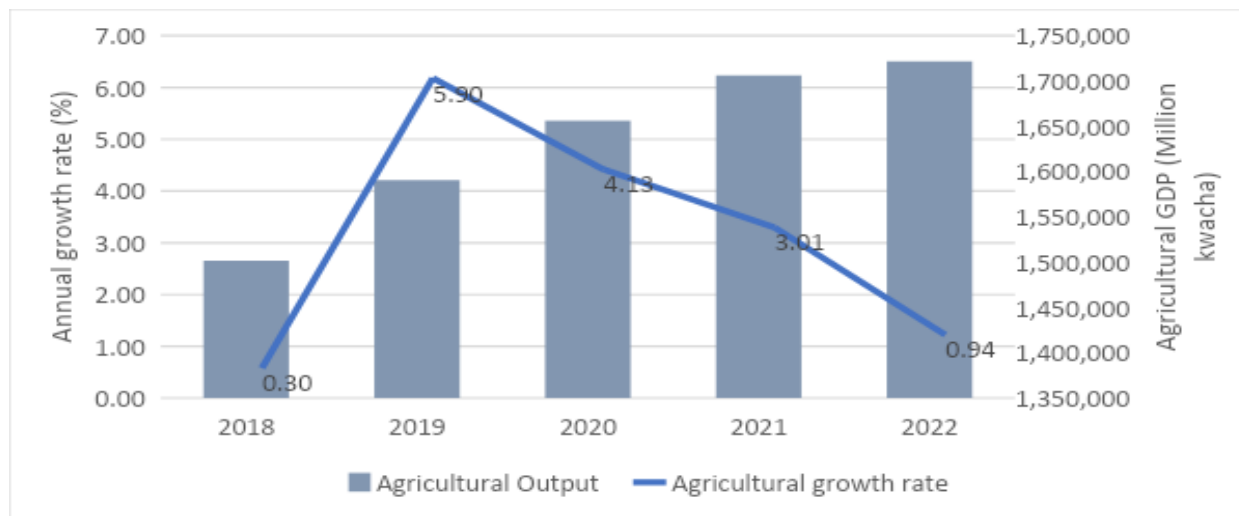
(b) Agricultural Value Added by Subsector



Sources: (a) RBM 2023 and (b) FAO 2024.

Despite challenges over the past few years, the agricultural sector has shown some growth, though it has been slow. Between 2018 and 2022, the agricultural GDP grew at an average rate of 2.8 percent annually, increasing from MWK 1,500 billion to MWK 1,700 billion (Figure 5). Notably, in 2019, agricultural growth peaked at 5.9 percent, but it has been declining since then, dropping to below 1 percent in 2022. Several factors have contributed to this decline. The COVID-19 pandemic and the invasion of Ukraine by the Russian Federation disrupted global supply chains, causing a rapid increase in fertilizer prices, which negatively affected agricultural production. Furthermore, since 2023, El Niño-induced droughts, repeated dry spells, and cyclones have continued to reduce harvests across many parts of the country. For instance, in the 2023/24 season, a 16.6 percent year-on-year reduction in maize output was expected due to drought conditions (World Bank 2024).

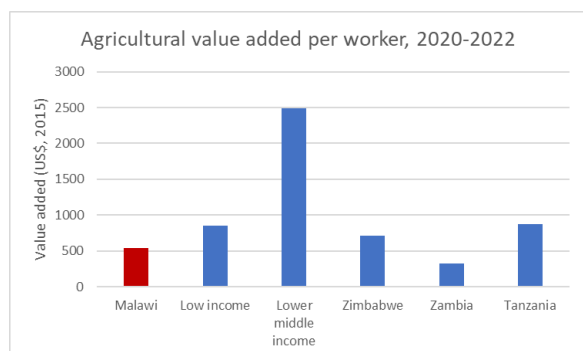
Figure 5: Agricultural GDP and Growth



Sources: Government of Malawi (2019, 2022b, 2024).

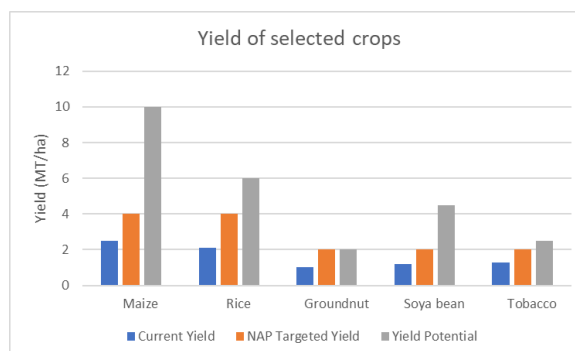
The agricultural sector’s weak performance in Malawi has also in large part been explained by the low productivity of both land and labor. Between 2020 and 2022, the country’s agricultural labor productivity, as measured by value added per worker in constant 2015 US dollar, was below the average for selected African countries (Figure 6). Additionally, yields of major crops have also been consistently low, not meeting the targets set in the 2016 National Agricultural Policy (NAP), and far below what could be achieved with optimal agricultural practices and conditions (Figure 7).

Figure 6: Agricultural Labor Productivity in Selected Africa Countries



Source: World Bank 2024; Mangani et al. 2022; and MOA 2020.

Figure 7: Productivity of Malawi’s Major Crops



Source: World Bank 2024; Mangani et al. 2022; and MOA 2020.

Inefficient public policies and support programs have been a major driver in stunting agricultural growth which has been exacerbated by climate and market shocks outside the country’s control. Malawi’s policy choices have impeded sector performance. For example, the 2021/22 Agricultural Sector Performance Report showed that 70 percent of the Ministry of Agriculture budget was allocated to a single policy priority of increasing production (Government of Malawi 2022a). Over many decades government policies

have aimed to promote food self-sufficiency rather than commercial farming, with poor results to show for this choice (World Bank 2023).

1.2 Macroeconomic Performance

Malawi's macroeconomic performance has been characterized by low and volatile growth, a widening fiscal deficit, high inflation, a weak trade balance, and unsustainable debt levels (World Bank 2024). Between 2010 and 2022, the economy recorded an annual average GDP growth rate of 3.7 percent. However, this rate declined to 2.9 percent between 2017 and 2022, and further contracted to 2 percent in 2024 due to prolonged dry spells. With an average population growth of 2.6 percent per year, GDP was expected to decline in per capita terms in 2024. Wide fiscal and current account deficits, unsustainable debt dynamics, and price instability have all contributed to weak growth (World Bank 2024). This trajectory casts serious doubt on Malawi's aspirations to become a lower-middle-income country by 2030 without significant action. Malawi is thus currently implementing large macroeconomic and structural reforms expected to boost GDP over the medium term (World Bank 2024).

As a key component of Malawi's 'real sector', agriculture's poor performance has exacerbated the challenges of the national economy, including by contributing to a significant trade imbalance. The trade deficit expanded from MWK 166,143 million in 2010 to MWK 1,442 billion in 2021 (NSO 2022), mainly due to declining agricultural exports and rising imports. The latter were driven by population growth and fertilizer imports under the input subsidy program. Surges in fertilizer and fuel prices further inflated Malawi's import bills, depleting foreign reserves and leaving these barely able to cover one month of imports in recent years. The increase in urea fertilizer prices from MWK 19,500 per 50 kg bag in 2020 to MWK 75,000 in 2023 particularly strained Malawi's balance of trade and foreign reserves. From January 2017 to December 2023, the Malawi kwacha devalued by 132 percent with major devaluations of 25 percent in May 2022 and 44 percent in November 2023. Although the approval of the Extended Credit Facility (ECF) of the International Monetary Fund (IMF) in November 2023 slightly eased the foreign reserves situation, reserves remained critically low at US\$250 million—less than one month of imports. To tackle foreign exchange scarcity, the government introduced several initiatives to boost agricultural production for domestic and export markets. Reforms in the mining and tourism sectors were also put in motion to enhance foreign exchange earnings.

Over the years, inflation has been on an upward trajectory because of fiscal deficits, poor harvests, and monetary policy risks (World Bank 2024). Inflation increased from 9.8 percent in 2018 to 26.8 percent in 2022 (RBM 2024). In Malawi, the inflation rate closely follows agricultural production trends because the highest contributor to the inflation rate is the price of food. Food prices contributed 54.4 percent and 57.9 percent to the Consumer Price Index (CPI) in 2022 and 2023, respectively. Hence, the increasing severity and frequency of climate shocks has contributed to rising food prices, and inflation at large. Huge devaluations of the Malawi kwacha have also been major contributors to inflation because essential goods, such as fuel, fertilizer, and medicine, are mostly imported.

2 Agricultural Policy Framework

The agricultural policy in Malawi is underpinned by the country's economy-wide development plans: *Malawi 2063* and its companion *First 10-Year Implementation Plan (MIP-1)*. The long-term vision laid out by *Malawi 2063* is to turn the country into an inclusive, wealthy, and self-reliant industrialized upper-

middle-income country by 2063, while the medium-term vision laid out by the MIP-1 is to raise the country's status to lower middle income by 2030. These national development goals rest on three pillars: agricultural productivity and commercialization, industrialization, and urbanization. Under the agricultural productivity and commercialization pillar, the MIP-1 focuses on agricultural diversification; irrigation development; anchor farms;⁵ agricultural inputs; agricultural mechanization; structured markets; and agricultural research, innovation, and dissemination.

The pursuit of these agricultural and economy-wide objectives implies a change of focus by both state and non-state actors. Some stated areas of focus, such as irrigation development, agricultural mechanization, and agricultural research and innovation, call for massive public investment because of their strong public good nature. Other areas of focus call for a policy and regulatory environment that is conducive to private sector involvement.

The National Planning Commission (NPC) is responsible for overseeing the implementation of the national development plans. State and non-state actors have formed pillar coordination groups (PCGs) and enabler coordination groups (ECGs) to coordinate the implementation of the development plans. The Ministry of Agriculture co-chairs the PCG for the Agricultural Productivity and Commercialization pillar.

Malawi's agricultural development strategy is specifically laid out in the National Agricultural Policy (NAP), which is generally aligned with MIP-1. The NAP aims to guide the design of agricultural subsector policies, strategies, and other actions. The 2016–2021 NAP⁶ aimed to achieve sustainable agricultural transformation and increase incomes for farm households, improve food and nutritional security for all Malawians, and increase agricultural exports. It established nine priority areas of focus: sustainable agricultural production and productivity; sustainable irrigation development; mechanization of agriculture; agricultural market development; agro-processing and value addition; food and nutritional security; agricultural risk management; empowerment of youth, women, and vulnerable groups in agriculture; and institutional development, coordination, and capacity strengthening.

The National Agriculture Investment Plan (NAIP) provides a framework for implementing the NAP and coordinating stakeholder investments in the agricultural sector. The NAIP developed for 2017/18–2022/23 also fulfilled one of the requirements of CAADP's New Partnership for Africa's Development (NEPAD). Upon the introduction of the NAIP, all investments in the agricultural sector were required to align with the plan.⁷ To support the implementation of the NAP, the Ministry of Agriculture also developed other subsector-specific policies. They include the National Irrigation Policy (2016), the National Seed Policy (2018), the National Agriculture Extension and Advisory Policy (2020), the National Livestock Development Policy (2021), and the National Fertilizer Policy (2021).

⁵ Anchor farms are large-scale commercial farms that play as hubs for the broader agricultural value chain by supporting the growth of smaller farms and related businesses in the surrounding areas through input supply, transfer of good agricultural practices and technology, and access to offtake markets.

⁶ The successor NAP 2023–2030 has been developed but not yet launched.

⁷ The NAIP had 17 intervention areas: policy formulation, program and stakeholder coordination, strengthening farmer organizations, public agricultural services delivery, ensuring diverse and nutritious food availability, food safety and quality standards, empowerment and tenure security, disaster risk management, pest and disease management, agricultural innovation systems, access to inputs, natural resource management, irrigation development, mechanization, agricultural markets and trade, inclusive private investments in agribusiness, and access to financial services.

3 Agricultural Budget Formulation and Execution

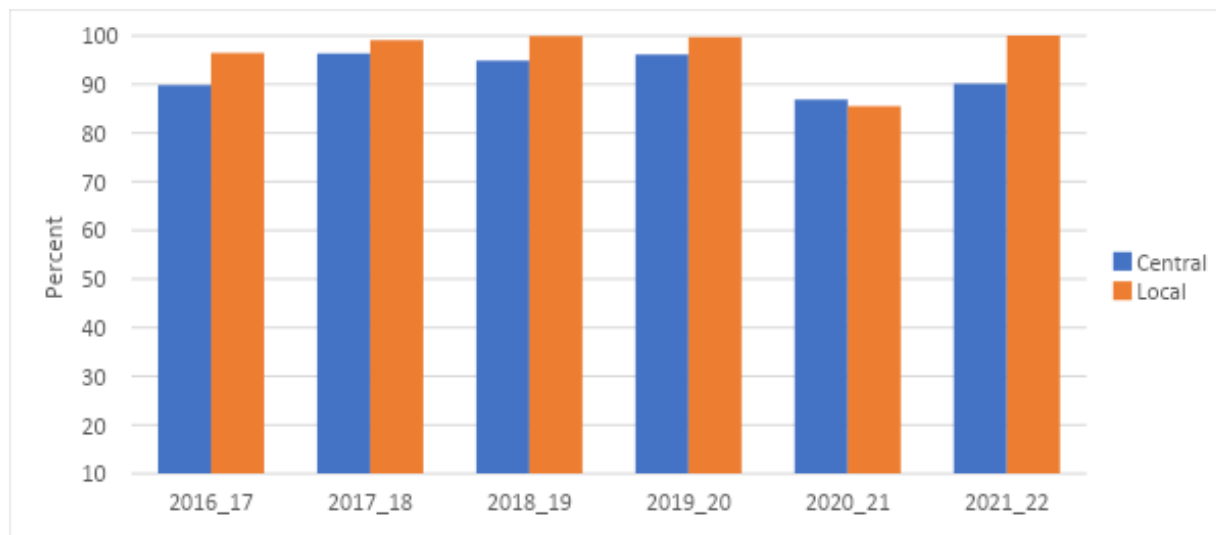
The budgeting process is informed by the key policies and work plans of multiple government ministries, departments, and agencies (MDAs). In the case of the Ministry of Agriculture, the overarching policy is established by the NAP, while the NAIP guides its implementation. The Ministry of Agriculture also develops a strategic plan that informs the development of annual work plans. Its budgets are prepared by the Ministry of Finance and Economic Affairs based on consultations and using information contained in annual work plans. The formulation of local council budgets is guided by the National Local Government Finance Committee (NLGFC), and it provides the budget formulation calendar and budget preparation guidelines to local councils.

The budget process for district councils is guided by District Development Plans (DDPs) and the Annual Investment Plan. DDPs are developed in consultation with the Village Action Committees (VACs) and the Area Stakeholder Panels (ASPs). The DDPs normally cover five years and present the development aspirations of the district. Every year, the district councils produce Annual Investment Plans based on the DDPs, and these are used to develop district budgets. Within each district, the process is led by the Director Planning and Development (DPD) and the Director of Finance (DoF) with the assistance of sector heads. The Finance Services Committee (FSC) consolidates, reviews, and approves draft sectoral budgets. Once the district council has approved the budget, it is submitted to the NLGFC for scrutiny, consolidation, and submission to the Ministry of Finance and Economic Affairs.

The Ministry of Finance and Economic Affairs consolidates budget proposals from various MDAs, including the NLGFC, to prepare a draft of the national budget. The Minister of Finance and Economic Affairs presents the draft budget to the National Assembly for review and eventual approval. Once the National Assembly approves the budget, the local councils also produce citizen budgets, which summarize the budget with respect to the council's functions. Resources are disbursed through the Treasury to various MDAs and the NLGFC. The NLGFC receives funding monthly, which it disburses to local councils in line with the local councils' cash flow. Salaries of officials recruited by the central government are handled by the Department of Human Resources Management and Development (DHRMD).

Agricultural budget execution has been high and stable in Malawi, with MDAs and local councils utilizing on average 93 percent of funds allocated to the sector. The utilization of funds has been higher at the local government level (97 percent) than at the central government level (92 percent) (Figure 8). While fund utilization improved between FY2016/17 and FY2019/20, it declined in FY2020/21, when both local and central government levels utilized less than 90 percent of the allocated funds. This drop can be attributed to the change in the financial calendar year.

Figure 8: Local and Central Government Public Agriculture Expenditure Budget Utilization



Source: AgPER data.

However, delays in funding have hindered budget execution and disrupted planned activities. For example, at the time of data collection for this report, the local councils had not received funding for three months. The late disbursement of funds significantly affects the timely implementation of activities, particularly in the agricultural sector, which operates on a seasonal basis. Nevertheless, most of the committed funds typically end up being disbursed to the local councils.

Despite existing opportunities, local councils have generated limited revenue and depend heavily on central government funding. Local councils can generate revenue with measures such as city rates on buildings, licenses on businesses, and market fees. However, their limited revenues have constrained their ability to independently finance development projects and services. In addition, some of the revenue that is generated within councils is channeled to the central government and thus rarely reinvested in revenue-generation initiatives at the local level.

4 Review of Public Agrifood Expenditure

4.1 Trends in Public Agrifood Expenditure

Malawi's public agriculture expenditures significantly increased between 2016/17 and 2021/22, largely due to the rising costs of input subsidies. The on-budget spending grew by 131 percent in nominal terms (or 46 percent in real terms), rising from MWK 148 billion (US\$146.3 million) in 2016/17 to MWK 343 billion (US\$393.7 million) in 2021/22.⁸ After a gradual increase up to 2020/21, public expenditures surged by 59 percent in a single year, in real terms. This surge was primarily due to the replacement of the Farm Inputs Subsidy Program (FISP) with the AIP, which expanded coverage to more farming households and faced higher fertilizer costs. Spending levels were projected to revert to pre-surge levels by 2024/25, in real terms, despite a continued rise in nominal terms. Throughout the review period, total AgPER

⁸ All MWK amounts are expressed in nominal terms unless otherwise specified. All charts are based on the AgPER dataset unless otherwise specified.

expenditures, which include both on- and off-budget spending, rose by 123 percent in nominal terms (or 41 percent in real terms) from MWK 251 billion in 2016/17 to MWK 560 billion in 2021/22. Various breakdowns of AgPER expenditures over the studied period are illustrated in Figure 9, Table 1, Figure 10, and Figure 11.

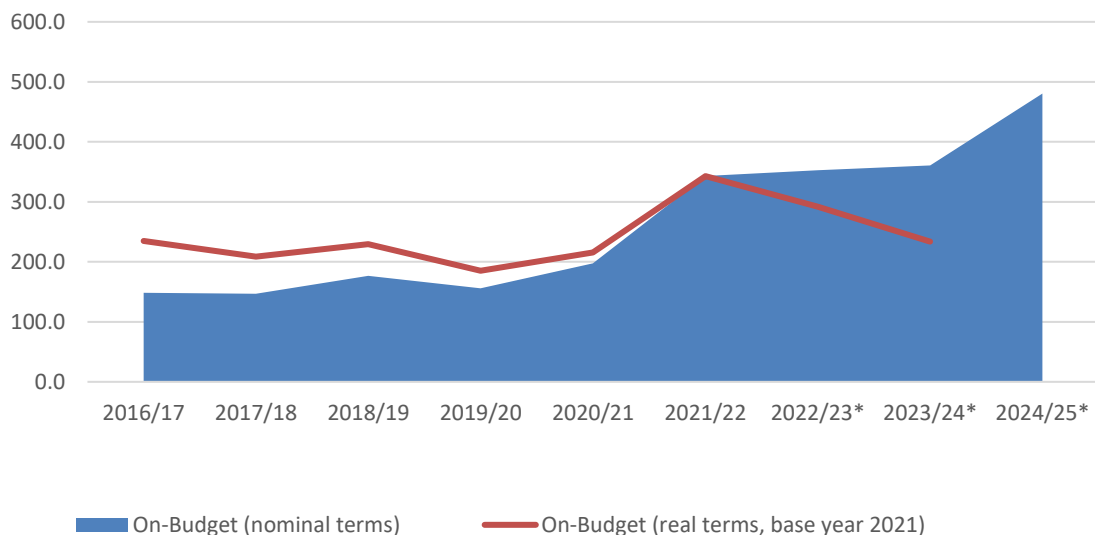
Foreign development partner (donor) finance is a prominent source of public agrifood sector support in Malawi, although it slightly declined in real terms over the review period. On-budget agriculture expenditures were 20 percent financed by foreign development partners (donor) resources over the review period (in aggregate), although the share of foreign budget financing declined from a high of 45 percent in 2017/18 to just 3 percent in 2021/22. While some foreign finance was channeled through Malawi's budget, one-fifth of it over the review period was off-budget (Figure 10). These 'off-budget' agrifood expenditures—all of which were financed by foreign development partners in this review—accounted for 43 percent of AgPER expenditures over the review period, and this fraction of foreign agrifood spending rose by 112 percent in nominal terms, or 34 percent in real terms. Overall, however, while foreign donor resources rose by 55 percent over the review period in nominal terms, they contracted by 1.9 percent in real terms. More details on foreign development partner expenditures are provided in section 4.6.

Malawi is one of the few countries in Sub-Saharan Africa that has allocated close to 10 percent of its national budget to agriculture. Over the review period, Malawi spent an average of 9.2 percent of its national budget on the agrifood sector, nearly attaining CAADP's 10 percent target based on on-budget expenditures alone.⁹ Overall AgPER spending, factoring in off-budget spending, well exceeded the 10 percent target. In comparison, Zambia and Rwanda spent 1.9 percent and 2 percent of their national budgets on the agriculture sector in 2019, respectively, and Ethiopia, which is among the largest agricultural spenders, spent 11.4 percent (FAO-MAFAP). Figure 11 shows how Malawi's spending levels compare to the CAADP target over the review period, and Figure 12 shows how it compares to those of other countries in the region.

The high levels of agrifood spending in Malawi have not resulted in corresponding levels of sectoral growth, raising concerns about the cost-efficiency and effectiveness of these expenditures. Given the significant role of off-budget expenditures in shaping Malawi's agrifood sector, the subsequent analysis will consider all public agrifood expenditures, including both on-budget and off-budget spending (referred to as AgPER expenditures).

⁹ The share nears 10 percent even before factoring in additional rural expenditures excluded from AgPER.

Figure 9: On-Budget Public Agrifood Expenditures in Real and Nominal Terms



Source: AgPER data.

Note: * Data for 2022/23 and later are forecasts.

Table 1: On- and Off-Budget Public Agrifood Expenditures in Nominal and Real Terms

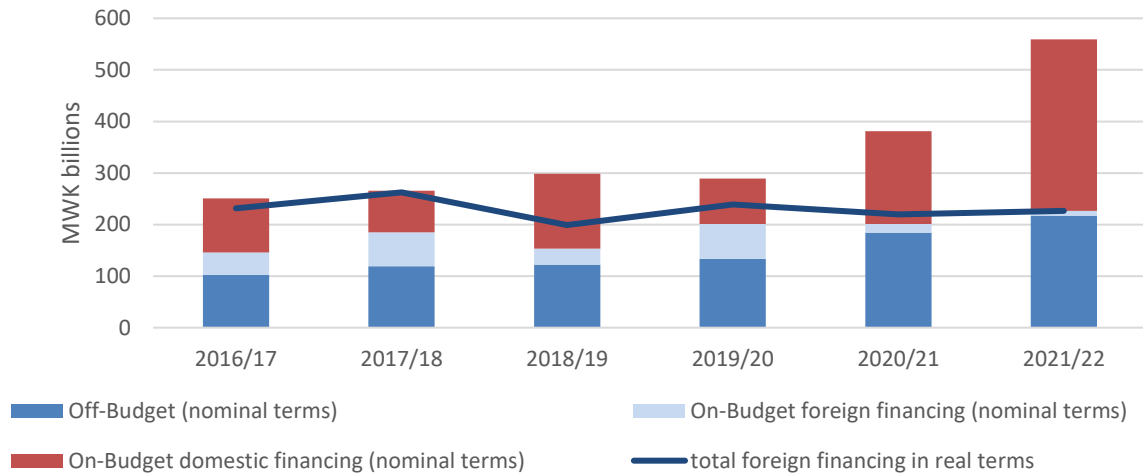
	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23*	2023/24*	2024/25*
On-budget (nominal terms)	148.4	147.0	176.5	155.9	197.3	342.9	352.7	360.8	480.5
Evolution (%)		-1.0	20.1	-11.7	26.6	73.8	2.9	2.3	33.2
Off-budget (nominal terms)	102.11	118.97	122.21	133.36	184.13	216.68			
Evolution (%)		16.5	2.7	9.1	38.1	17.7			
Total (nominal terms)	250.6	266.0	298.8	289.2	381.4	559.5			
Evolution (%)		6.1	12.3	-3.2	31.9	46.7			
On-budget (real terms, base year 2021)	235.0	208.6	229.4	185.1	215.7	342.9	291.9	233.7	
Evolution (%)		-11.2	10.0	-19.3	16.5	59.0	-14.9	-19.9	
Off-budget (real terms, base year 2021)	161.6	168.8	158.8	158.4	201.3	216.7			
Evolution (%)		-28.1	-5.9	-0.2	27.1	7.6			
Total (real terms)	396.6	377.4	388.2	343.6	417.0	559.5			
Evolution (%)		-4.8	2.9	-11.5	21.4	34.2			

Source: AgPER data.

Note: Values in table are in billions of MWK.

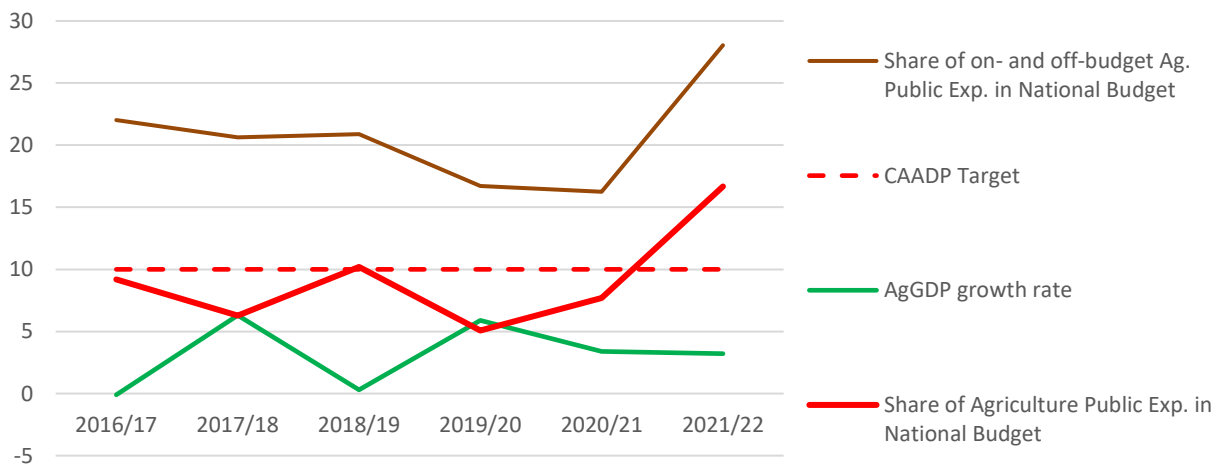
* 2022/23–2024/25 values are incomplete estimates based on the 2024/25 Approved Financial Statement from the Government of Malawi. Off-budget estimates are not available after 2021/22.

Figure 10: On- and Off-Budget Agrifood Spending



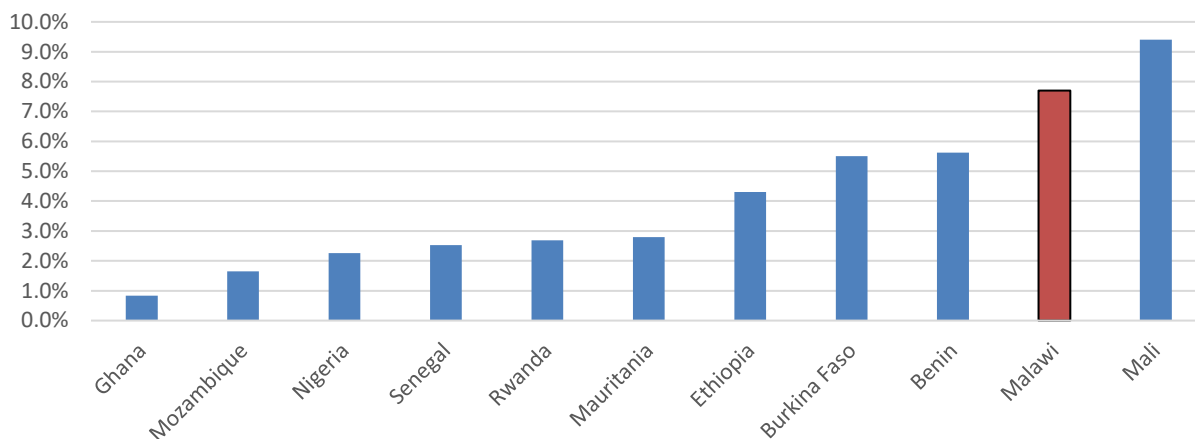
Source: AgPER data.

Figure 11: Public Agrifood Spending as a Share of the National Budget - Malawi. CAADP Target



Source: AgPER data.

Figure 12: Public Agrifood Expenditures as a Share of National Budgets in Selected African Countries



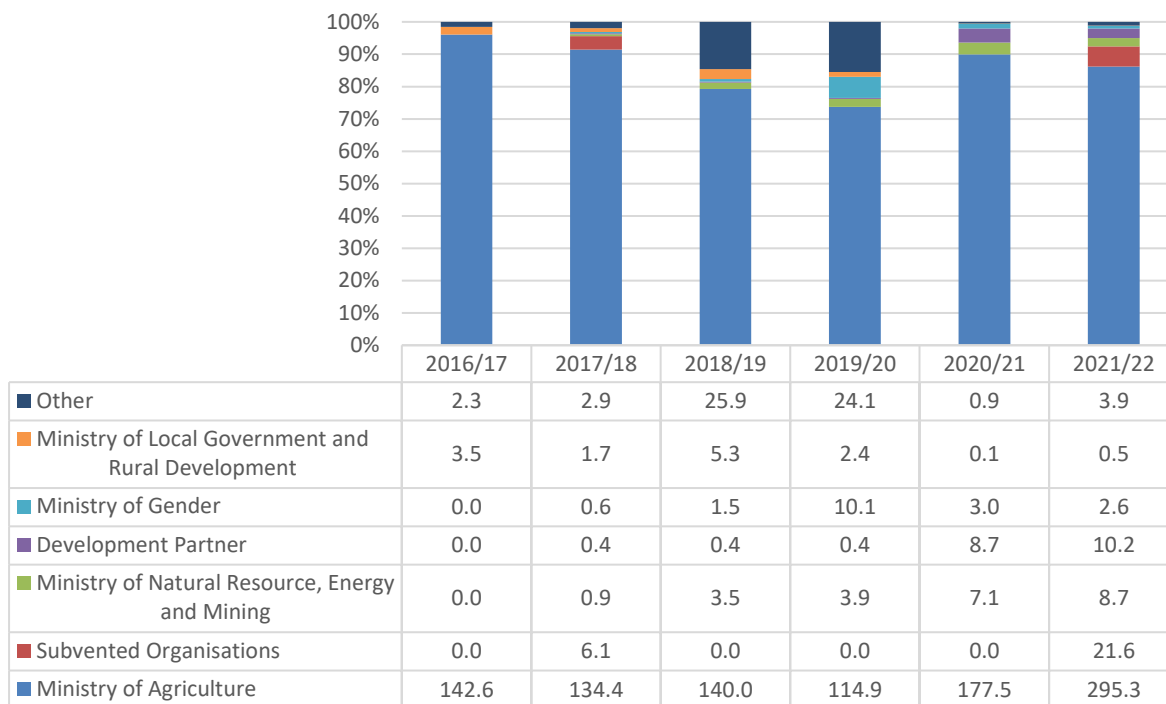
Sources: AgPER data (Malawi) and FAO-MAFAP (other countries).
 Note: These estimates are derived from on-budget spending levels.

4.2 Expenditure by Implementing Agency or Partner

In terms of on-budget expenditures, the Ministry of Agriculture was responsible for 86 percent of the total spending over the review period. Although this share decreased, the ministry’s spending in nominal terms increased, rising from MWK 143 billion in 2016/17 (96 percent of on-budget expenditures) to MWK 295 billion in 2021/22 (86 percent). It is important to note that some donor-funded projects are included in the Ministry of Agriculture’s expenditures. The breakdown of public expenditures by agency is shown in Figure 13. The Ministry of Agriculture also accounted for the largest portion of overall AgPER resources in Malawi, comprising 44 percent of the total spending over the review period. This was followed by off-budget spending by donors on agrifood development projects, which accounted for 43 percent.

Significant expenditures were also made by subvented organizations and the Ministry of Natural Resources, Energy, and Mining. Subvented organizations—organizations that produce and deliver goods and services on behalf of the government—accounted for 2.4 percent of the cumulative on-budget expenditures over the review period, and the natural resources ministry accounted for 2.1 percent. Other MDAs that engaged in agrifood spending included those responsible for finance, disaster management affairs, education, trade, and gender. Activities by these MDAs included those relating to the management of forestry resources, environmental services, fisheries resources, social protection, food aid programs, school feeding programs, and marketing activities.

Figure 13: On-Budget Agrifood Expenditure by Implementing Agency or Partner



Source: AgPER data.

Note: Values in table are in billions of MWK.

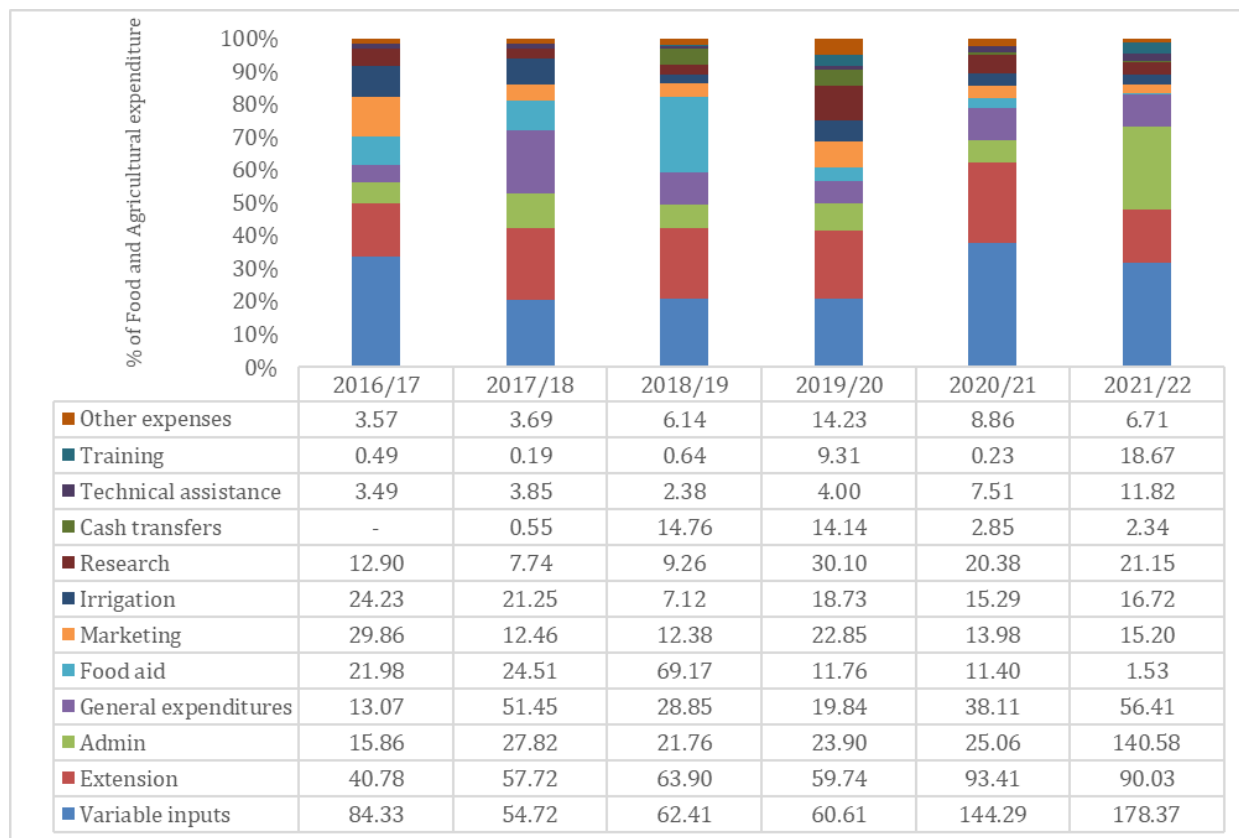
4.3 Functional Composition of Expenditure

Variable inputs accounted for the largest share of AgPER expenditures during the review period.

Expenditure on ‘variable inputs’ includes spending on seeds and fertilizers, mostly (though not exclusively) in the context of implementing the AIP. In aggregate, variable inputs accounted for 66 percent of on-budget agrifood expenditures and 29 percent of the AgPER expenditures over the review period. Public expenditure on variable inputs went from a low of MWK 55 billion, or 21 percent of AgPER expenditures, in 2017/18, and reached a peak of MWK 178 billion, or 32 percent of the AgPER expenditures, in 2021/22 (Figure 14).¹⁰

¹⁰ In percentage terms, variable inputs reached their peak in 2020/21 at 37.8 percent of AgPER expenditures.

Figure 14: Functional Breakdown of Public Expenditure



Source: AgPER data.

While the input subsidy program’s dominance is long-standing, it experienced a surge during the review period that has since started to be reversed. When Malawi transitioned from the FISP to the AIP in 2020, the number of beneficiaries rose—from about 900,000 to 3.7 million—but so did the program’s costs and inefficiencies. This expansion, combined with a surge in fertilizer prices, led the program to grow from MWK 54.7 billion (US\$76.6 million) in 2017/18 to MWK 178.4 billion (US\$211.1 million) in 2021/22. The program subsequently cut down its number of beneficiaries and costs through more careful targeting. The AIP beneficiaries decreased to 2.5 million in 2022/23 and to 1.5 million in 2023/24, bringing program costs to MWK 151 billion (US\$151.3 million) in 2022/23 and MWK 110 billion (US\$78.7 million) in 2023/24. That said, the AIP expenditures were expected to rise again and reach an estimated MWK 161 billion (US\$96.8 million) in 2024/25.

Agricultural extension was the second most important program in relative terms, accounting for an average of 20 percent of the AgPER expenditures over the review period. Extension’s share of expenditures decreased from 24 percent in 2020/21 to 16 percent in 2021/22, pushed downward by the increase in AIP expenditures. In absolute terms, however, spending on extension services rose by 29 percent in real terms over the studied period. Extension service expenditures include costs incurred while delivering information, advice, and support to farmers to help them adopt the various agricultural production practices and technologies to contribute to agricultural productivity and sustain production.

Other significant expenditure categories included administration (12.5 percent), general expenditures (10.2 percent), food aid (6.9 percent), marketing (5.2 percent), irrigation (5.2 percent), and research (5.1 percent). General expenditures cover a variety of additional expenses not included in the specific categories listed. These expenditures include policy coordination, regulatory activities, and administrative overheads within agricultural activities, such as salaries for administrative and support staff, office supplies, and other operational costs.

Agricultural spending is largely focused on the crop's subsector, 71 percent of AgPER expenditures having explicitly focused on it during the review period. About one-quarter (24.2 percent) of expenditures are not sector specific. The livestock, aquaculture, and fishery subsectors together accounted for 5.1 percent of AgPER expenditures. This pattern was evident in both on- and off-budget spending.

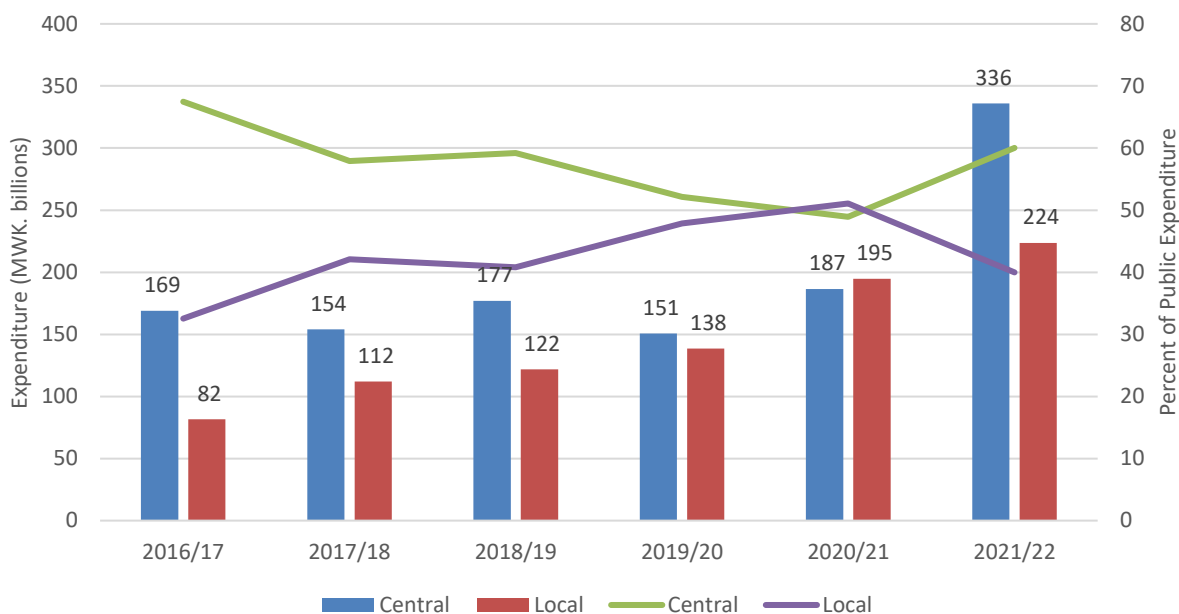
4.4 Central versus Local Government Expenditure

Malawi has been implementing a decentralization policy for nearly a quarter of a century. Decentralization was meant to improve the efficiency of government institutions' service delivery, including that of agricultural services. Local councils were instituted to run all government functions at the district level, with the District Commissioner as the controlling officer. All national ministries and departments are represented at the local council (that is, at the district) level. Local councils were meant to gradually gain autonomy in terms of both functions and resources. Conceptually, the central government is responsible for policy formulation and coordination, as well as financing the operations of central-level institutions such as research stations, agricultural development divisions (ADDs), and training institutions. Local councils oversee all district-level institutions, including district agricultural offices and their extension planning areas (EPAs). Local councils are supposed to be fully responsible for generating revenues and paying their officers. However, salaries, remuneration, and other expenses including social protection and agricultural subsidies are still paid for by the central government.¹¹

On average, the central government spending accounted for 58 percent of the AgPER expenditures over the studied period. Consistent with decentralization, its share of the AgPER expenditures decreased over the review period, from 67 percent in 2016/17 to 49 percent in 2020/21. But it jumped back up to 60 percent in 2021/22 on account of the increase in the AIP costs, which are largely covered by the central government. Figure 15 shows the breakdown of AgPER expenditures by level of government.

¹¹ Central government expenditures are made by institutions funded directly by the Ministry of Finance and Economic Affairs. Local government expenditures are made by local councils or district-level agencies and are generally funded through the NLGFC. However, some local councils receive direct support from development partners.

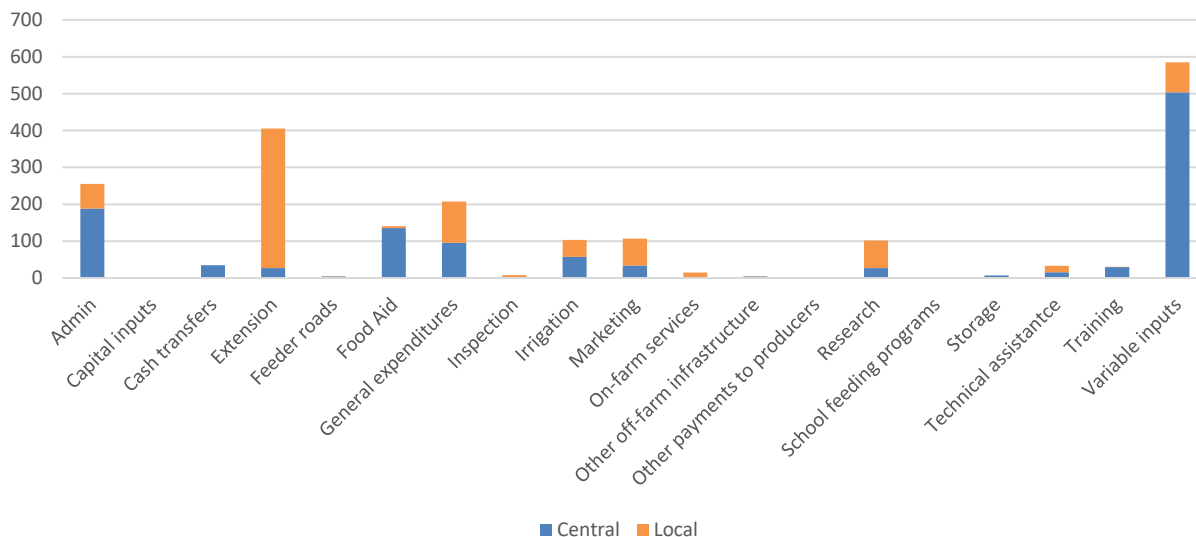
Figure 15: AgPER Expenditures by Level of Government



Source: AgPER data.

Central government agrifood expenditure was (54 percent) dominated by subsidy spending. Of its spending, 41 percent went to input support programs, and 13 percent to food aid. Administrative costs, including salaries and allowances, accounted for 13 percent of its agrifood budget. Local government spending on the other hand was primarily directed toward agricultural extension, research, and marketing programs. Surprisingly, both the share and level of public spending on research were greater at the local council level than at the central government level, even though financing research is primarily the responsibility of the central government. Local governments also financed variable inputs, school feeding programs, on-farm service, extension, and inspection services. Of note, local governments accounted for only about 15 percent of spending on variable inputs as input subsidy program expenditures are 80 percent fertilizer purchases, and these are carried out centrally and in bulk (Figure 16). It is also notable that, over the studied period, about 89 percent of local-level spending was foreign financed.

Figure 16: Functional Spending by Level of Government

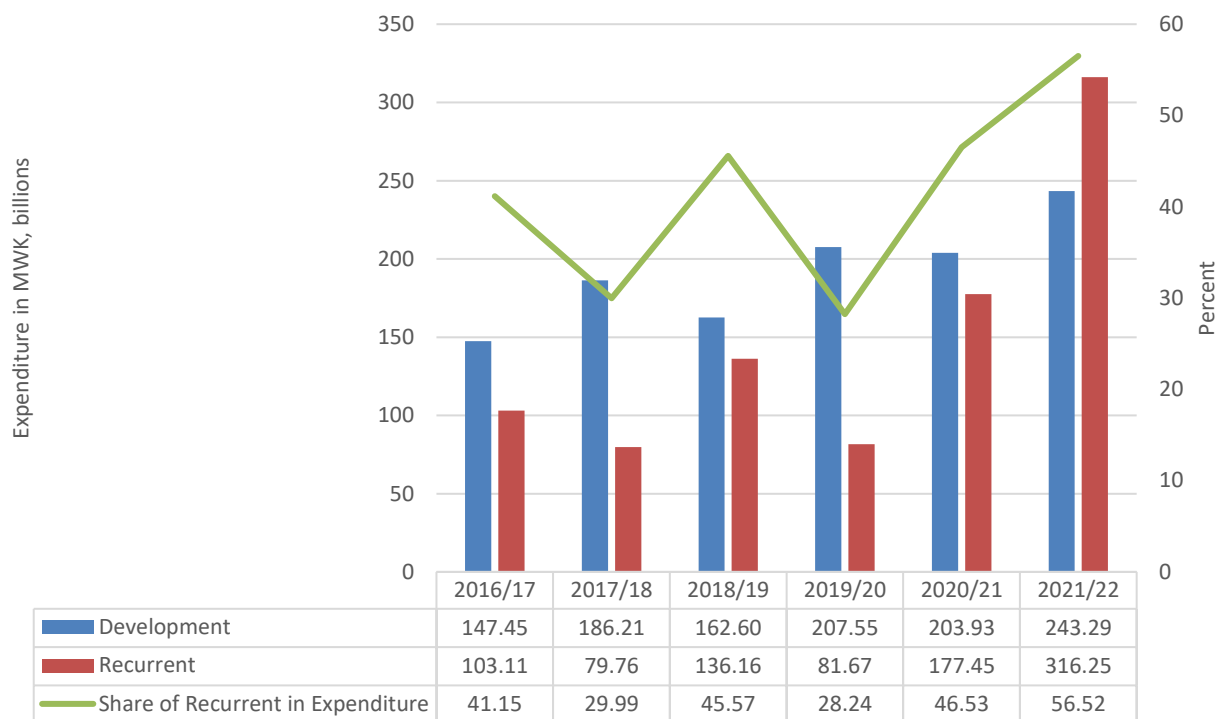


Source: AgPER data.

4.5 Recurrent versus Development Expenditures

Over the review period, the majority of Malawi’s AgPER expenditures were channeled toward development commitments instead of operational costs. Development expenditures are investments in capital equipment and assets whereas recurrent expenditures on the other hand pertain to the costs of ongoing operational activities. Figure 17 shows the evolution of both categories over the review period. In terms of nominal values, investment in food and agriculture development commitments fluctuated between MWK 147 billion and MWK 243 billion, whereas operational expenses varied from MWK 103 billion to MWK 316 billion. Development expenditures exceeded recurrent expenditures except in 2021/22, due to the AIP increase. However, it is important to highlight that most development expenditures are financed by donors. The government finances less than 5 percent of the development projects in Malawi.

Figure 17: Development and Recurrent Expenditures in AgPER Expenditures



Source: AgPER data.

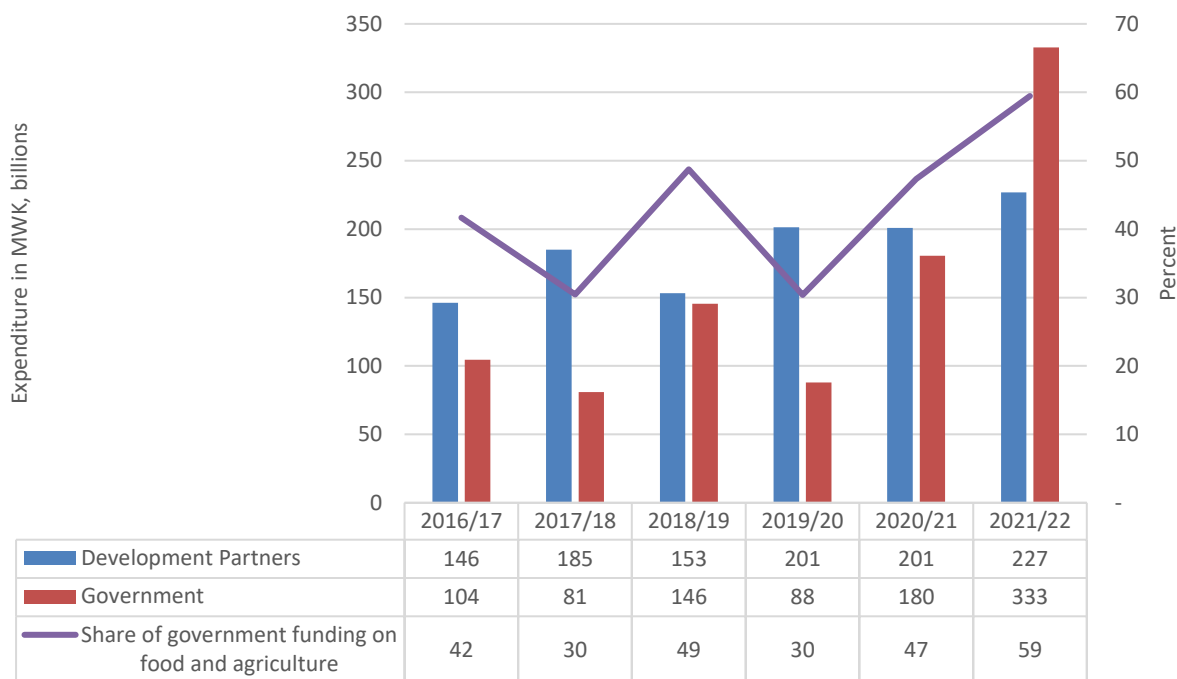
4.6 Domestic versus Foreign Sources of Finance

Donor support made up more than half (54 percent) of the total AgPER expenditure during the review period. Though most of these resources were spent off-budget, some were included in Malawi’s national budget, and both types are counted as ‘development partner’ resources in this analysis. Every year except FY2021/22, development partners provided more resources than the government. In FY2021/22, domestic resources accounted for 59 percent of AgPER expenditures due to the increased cost of the AIP (Figure 18).

Foreign development partners collectively played a crucial role in financing agrifood sector development in Malawi. Based on aggregate spending over the review period, the World Bank, the European Union (EU), the United States Agency for International Development (USAID), the Foreign, Commonwealth and Development Office (FCDO), and the African Development Bank (AfDB) were among the top five providers of public agrifood sector financing (Figure 19). The largest donor-financed projects over the review period were the Multi-Donor Trust Fund Agricultural Sector-Wide Approach Support Project (ASWAP) (MWK 32.7 billion), the Training Institution Partnership for Sustainable Fisheries for Food Security (MWK 29 billion), and the Agriculture Commercialization Project (AGCOM 1.0) (MWK 18.1 billion).

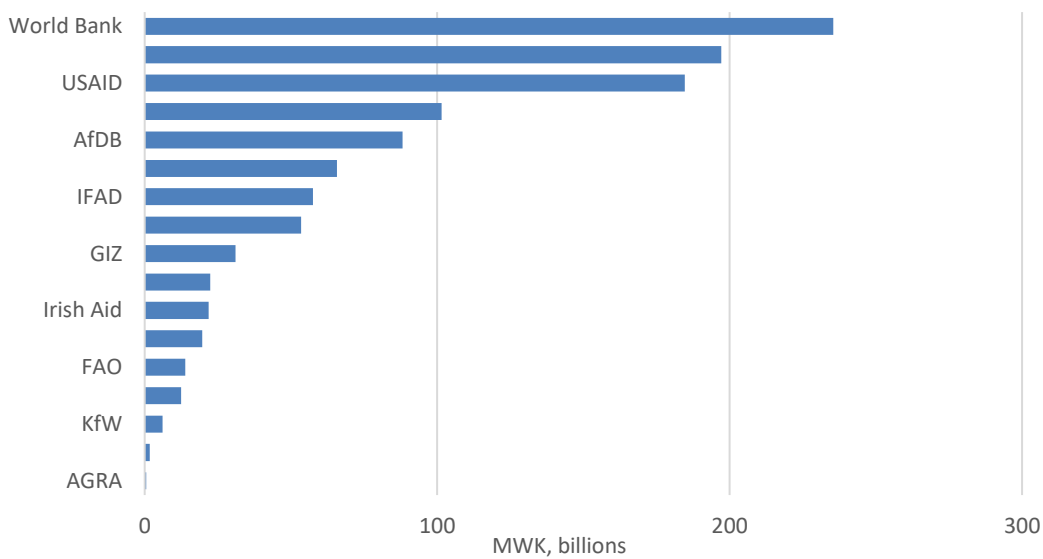
Donor support was primarily spent on agricultural extension, research, and irrigation development. Figure 20 shows the functional composition of donor and government spending. It highlights that government resources were primarily allocated to input subsidies (variable inputs), administrative costs, and food aid whereas donor resources were allocated to provision of public goods and services.

Figure 18: AgPER Expenditures by Financing Source: Domestic versus Foreign Resources



Source: AgPER data.

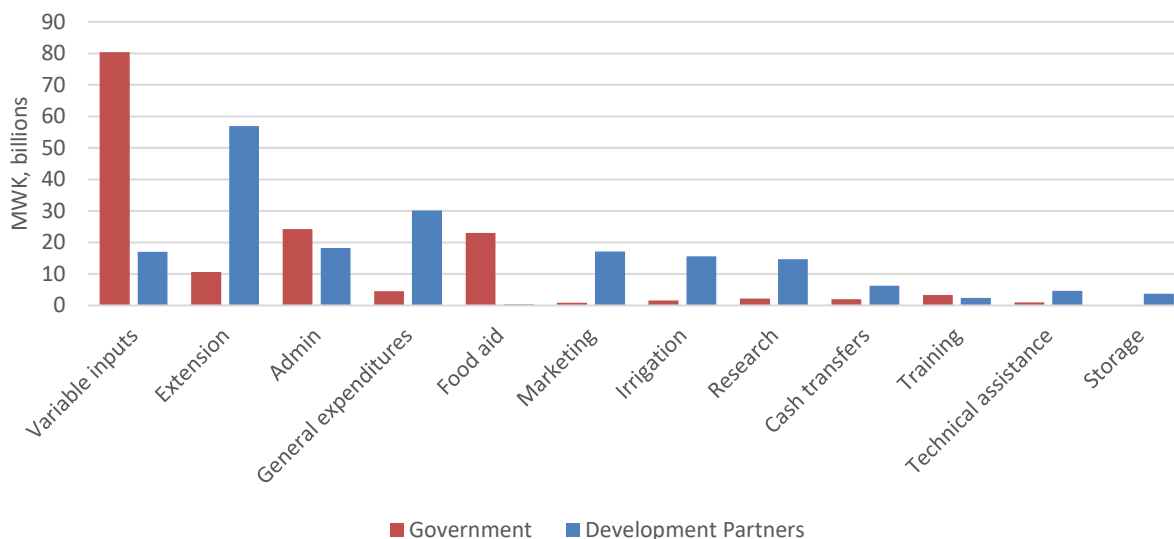
Figure 19: Malawi Agrifood Sector Spending by Donor



Source: AgPER data.

Note: The chart is based on cumulative or aggregate spending over the review period.

Figure 20: Government and Donor Agrifood Spending by Function



Source: DCAFs and IFMIS.

5 Efficiency and Utilization of Public Agrifood Resources

The persistent underperformance in agricultural growth, despite significant investments from both domestic and international public funds, signals the need for a deeper analysis of key programs within Malawi’s agricultural sector. This section provides findings from deep dives on the input subsidy program, extension services, irrigation, and the seed system. The deep dives cover various aspects such as policies, road maps, and governance structures within each component. Quantitative data from the public expenditure review (PER) are complemented by qualitative data collected through key informant interviews at both the central and local levels, including representatives from both the public and private sectors. The aim is to understand the governance structure and challenges hindering the achievement of targets in irrigation, extension, and seed systems. For the econometric analysis, the PER data were complemented with micro data from the IHS 2019/20. Where feasible, the impact of select public services on the value of crops produced by a household was estimated, along with the benefit-cost ratios (BCRs) of public spending on those services. The methodology used to calculate the BCRs of selected spending programs is described in Box 1.

Box 1: Methodology Used to Estimate the BCRs of Major Public Spending Programs

BCR analysis consists of comparing a program’s costs to its benefits. Its benefits are assessed by valuing, and comparing, an outcome of interest with and without the program. In this case, the analysis of benefits was based on IHS data for 2019/20. The analysis of costs used IHS data in combination with AgPER data.

Benefits were derived by estimating how a given program affected the value of households’ crop output using propensity score matching (PSM). PSM is a popular approach for empirically estimating causal treatment effects in diverse fields of study when the randomized assignment of treatment and control conditions are not possible. In these cases, PSM helps mitigate the treatment selection bias by identifying individuals who are similar (or ‘match’) with respect to nontreatment characteristics across the treatment and control groups. For ‘matching’ purposes, this analysis used the area under cultivation; asset index; household head education, age, and gender;

household size; distance from market; weather shocks; and administrative regions as covariates to identify similar households that were not beneficiaries of programs. Costs were used from secondary data, and where this information was not available, they were derived by using IHS samples to impute the cost-of-service delivery per household based on public expenditure data. The BCRs were then calculated based on these household-level benefit and cost estimates.

5.1 Fertilizer Subsidy

Malawi has a long history of subsidizing the cost of farm inputs, especially fertilizers, to increase agricultural production. After being abolished in the 1990s, the FISP was reintroduced in 2005 to boost food production. This reinstatement of the program was motivated by severe food shortages following a poor harvest in the 2004/05 season. Since then, fertilizer subsidies have consistently accounted for the largest share of public agrifood expenditures. In 2013/14, a consensus emerged among the government, development partners, and other stakeholders on the need to improve the program's efficiency and sustainability; and between 2014/15 and 2019/20, the government implemented a number of FISP reforms. These were centered around increasing private sector involvement in the retailing and distribution of inputs; increasing farmer contributions (by capping the coupon value and having farmers pay the difference between the market price and coupon value); and improving beneficiary targeting (focusing on poor yet productive smallholder farmers). These reforms significantly reduced the program's footprint and cost to the government and made it easier for the government to monitor program spending, enabling input suppliers to be paid on time.

In 2020, the FISP was scaled up and renamed as AIP. Under the AIP, the number of smallholder farming households benefiting from input subsidies increased from 900,000 (under the FISP) to 3.7 million. This expansion not only put the government under significant fiscal strain but also drew down its scarce foreign exchange reserves, which were used for record fertilizer purchases. The program was focused on increasing maize production by smallholder farmers which further reinforced reliance on maize and entrenched subsistence agriculture.

The input subsidy program had an estimated BCR of 1 or lower. The benefit analysis using PSM found that households receiving the input subsidy had a 13 percent higher crop output value compared to those that did not, and this difference was statistically significant at the 5 percent level. However, a BCR of 1 or lower indicates that the fertilizer input subsidy was neither cost-effective nor efficient. The program's true BCR might be even lower, as the estimate was based only on the subsidy amount received by households under the FISP, excluding administrative. This aligns with earlier studies, such as those by Jayne and Rashid (2013) and Jayne (2018), which showed the program contributed marginally to productivity. Chirwa and Doward's study (2013) also estimated the program's BCR to fall between 0.87 and 1.55.

The input subsidy program's low BCR speaks of the persistence of its long-standing challenges. Those include difficulties with targeting and the timely delivery of inputs, low crop response rates, the crowding out of commercial input sales, and leakages (Chirwa and Dorward 2013; Nyondo et al. 2021, 2023; World Bank 2023, 2024). The low value for money for fertilizer subsidies suggests the need to take a more integrated approach which improves the design of fertilizer support programs and tackles the multiple binding constraints often faced by smallholder farmers. Improving the design of the program will entail better targeting, ensuring that it does not distort relative incentives among various inputs and including environmental conditionalities to support. Redirecting some of these resources for the provision of public

goods and services such as research, extension, training, access to markets, and price information among other things can also improve the effectiveness of the fertilizer subsidy programs.

While challenges persist, there has been some progress. In 2023, the government restructured the AIP to achieve the dual goal of reducing fiscal costs while increasing agricultural productivity to support food security. Implemented during the 2022/23 growing season, the reform cut down the number of AIP beneficiaries by over 30 percent by more selectively targeting farmers—specifically, targeting those likely to benefit from the input subsidy the most. To achieve this, the government transitioned the least productive farming households (also usually the poorest) to cash transfer and public works programs. As a result, the number of AIP beneficiaries decreased from 3.7 million in 2021/22 to 1.5 million in 2023/24 and was expected to reach 1.0 million in 2024/25. Additionally, there have been improvements in AIP delivery as the government has taken measures to engage the private sector in input procurement and distribution.

Focus groups with key stakeholders revealed an openness to reforming the AIP. Meetings were held with key stakeholders to discuss the AIP reform options and rank them based on effectiveness, equity, political feasibility, and administrative feasibility. Frequently evoked priorities were the need to complement input subsidies with strong extension services and to improve program targeting. However, many respondents ranked feasibility of reforming the AIP poorly on political feasibility, evoking the political economy.

There is political will to reform the AIP as there is increasing recognition that fertilizer is not the only binding constraint to raising agricultural productivity. There has been increasing recognition among countries across Sub-Saharan Africa that decades-old fertilizer subsidy programs have not been able to deliver on their promise of productivity growth. While synthetic fertilizer is an important technology that is needed to improve sector-wide productivity, there is a degree of complexity to reaping its potential benefits. This reality points to the need for careful program design.

At the time of publication, the Government of Malawi was partnering with the World Bank to pilot several repurposing options. To prevent subsidy misuse, such as double-dipping and reselling, the government was piloting an e-voucher system and moving toward a more data-driven subsidy allocation by establishing a robust digital farmer registry. The government was also interested in making subsidies at least partly performance based, using them to incentivize and guide more productive and sustainable farming practices with a particular focus on restoring soil health (Box 2).

Box 2: Malawi's Soil Health Improvement Pilot

Malawi's long-standing subsidization of inorganic fertilizers and maize seed through the AIP and its predecessors has not significantly improved agricultural productivity, and food insecurity has remained pervasive. One underlying issue has been the widespread deterioration of soil health. The country's sandy, nutrient-poor soils acidify under repeated fertilizer applications if they are not combined with holistic soil management practices. Soil acidification has become widespread, reducing nutrient-use efficiency and diminishing returns on fertilizer investments. However, soil health decline can be reversed through practices such as the use of lime and organic matter, the incorporation of legumes in the production system, and soil and water conservation measures. In that respect, the AIP's reliance on standardized inputs has not helped matters.

To address these soil health challenges, a soil health pilot was being carried out under the Malawi Food Systems Resilience Project and the 2030 Food Systems Multi-Donors Trust Fund. A total of 36,000 farmers were split into three groups. One group of 12,000 farmers was testing a semi-flexible e-voucher system; a second group of 12,000 farmers was testing a fully flexible e-voucher scheme; and a third group of 12,000 farmers was on the legacy version of the AIP, forming the control group. The pilot was encouraging farmers in the first two groups to adopt practices that increase soil organic matter and nitrogen fixation (using legumes or trees), reduce acidification, and promote diversification.

Farmers under the fully flexible scheme will select practices from three menus: one for soil and water conservation, one for nutrient management, and one for crop diversification. Upon verification of implementation, farmers will receive an incentive payment via mobile banking. Farmers in the semi-flexible scheme will implement one soil and water conservation practice and one of three soil health technology packages (liming, manure application, or organo-mineral fertilizers with legumes), allowing for more controlled analysis of soil health impacts. Each of the 36,000 participants will be closely monitored, and a subset will participate in detailed baseline, midline, and endline surveys as well as soil sampling.

Lessons from this pilot will provide critical insights into targeting productive farmers, optimizing e-vouchers, and structuring incentives to align soil health with national budget priorities. The findings will contribute to policy briefs and engagement efforts to guide future agricultural support programs in Malawi.

5.2 Agricultural Extension Services

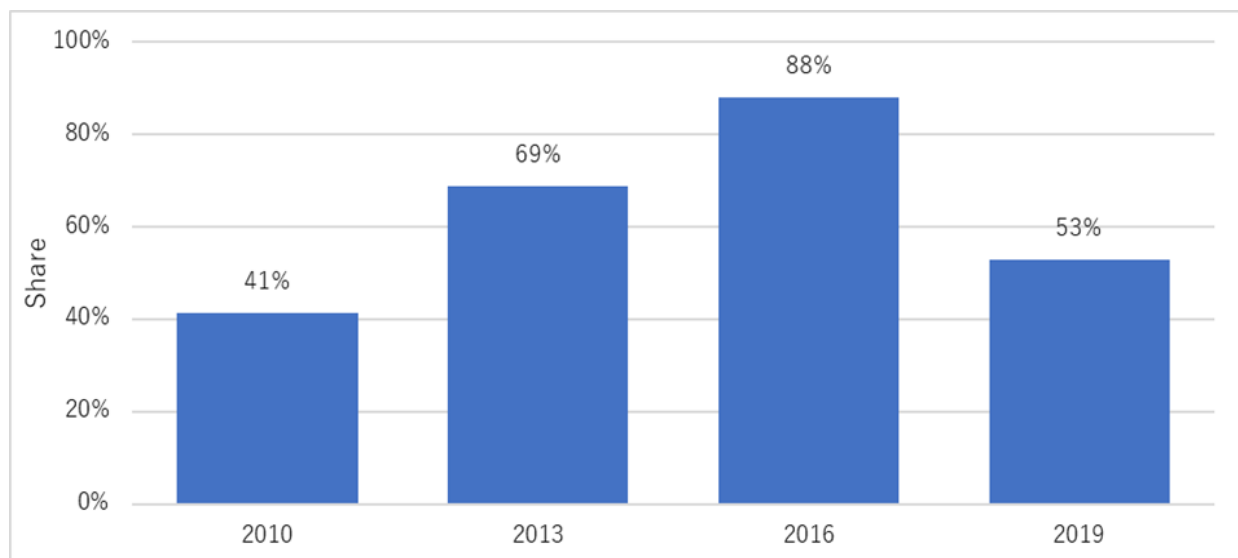
Extension services can play a critical role in improving agricultural productivity, incomes, and resilience.

Malawi's policy framework for agricultural extension is made up of various documents and strategies that highlight aspirations ranging from decentralization and collaboration with diverse partners to enhance technology adoption, gender and social inclusion, and monitoring and evaluation. Extension services in Malawi are decentralized to the district level with the intention that services be tailored to local contexts. Each of the 28 districts have their own extension office that coordinates extension services with various stakeholders including the Department of Agriculture and Extension Services (DAES), which is responsible for implementing extension services at the national level.

Despite extension services absorbing about one-fifth of the AgPER expenditures, outreach and service delivery have been poor.

As of 2019, about half of Malawian farmers had access to extension services. This share increased from 41 percent in 2010 to 88 percent in 2016 and dropped to 53 percent in 2019 (Figure 21). Among those farmers, 40 percent received advice from a media source (TV, radio), and about one-quarter from a government extension officer.

Figure 21: Share of Farmers Accessing Extension Services, 2010–2019

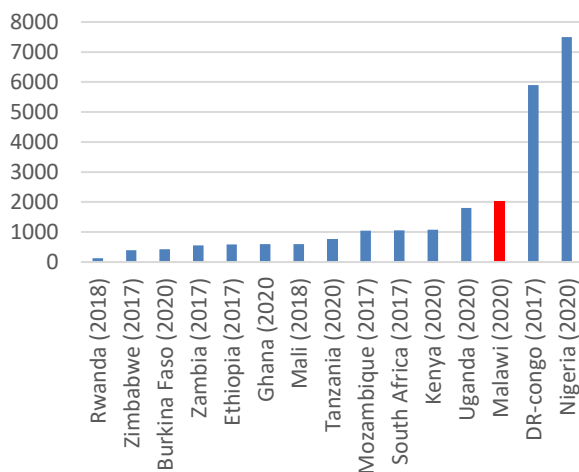


Source: Malawi Integrated Household Panel Survey 2019/20 and key informant interviews.

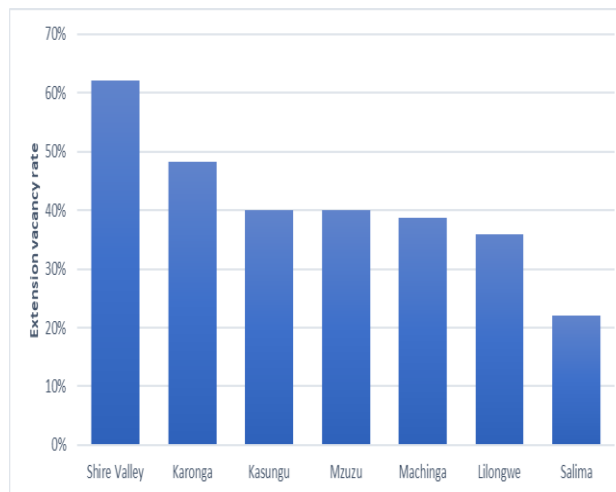
Low access to extension services has in large part been because of a lack of extension workers. The ratio of farmers to extension workers in Malawi was estimated at 1:1,929 in 2020/21. While this was an improvement from the 2014 ratio of 1:3,000, it still fell short of the 1:1,000 target recommended by the 2016 NAP (Mangani et al. 2022). Malawi’s ratio is on the high end within the region (Figure 22). At the time of the study, over one-third (38 percent) of public extension worker positions in the ADDs were vacant, and there was significant heterogeneity across regions. As of 2023, Salima had the lowest vacancy rate at about 21 percent, while Shire Valley had the highest at around 61 percent. Low wages; insufficient resources; and poor coordination among government agencies, nongovernmental organizations (NGOs), and development partners who finance about 80 percent of the spending on agricultural extension were quoted by stakeholders as the main causes of low coverage of extension services.

Figure 22: Extension Service Benchmarks

(a) Number of Extension Workers per Farmer in Selected Africa Countries



(b) Malawi Extension Officer Vacancy Rate, 2023

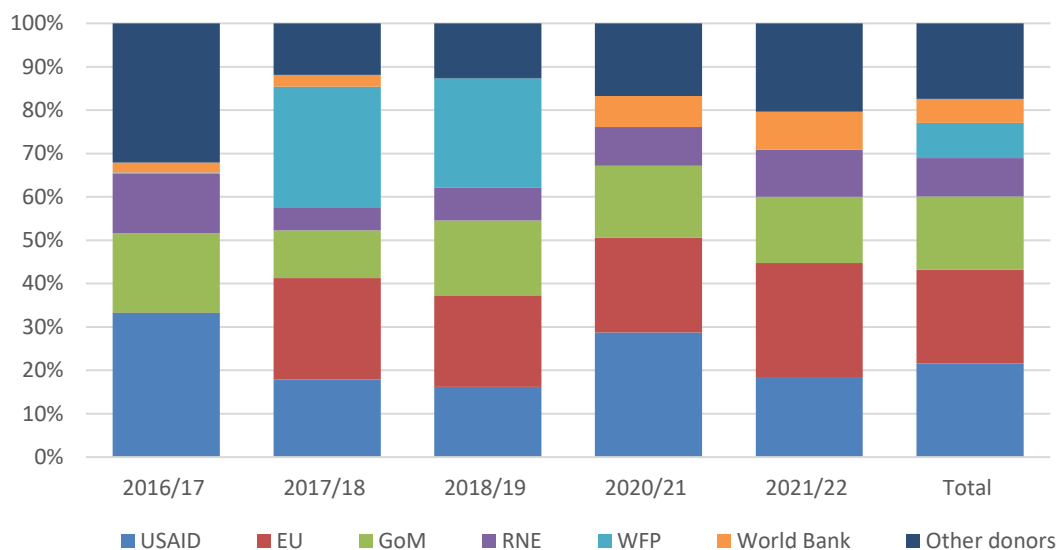


Sources: Malawi Integrated Household Panel Survey and Key Informant Interviews; adapted from World Bank-FAO 2022 (Tanzania PER).

Hampered by limited investment in facilities, equipment, and capacity building, Malawi’s extension services could also improve in terms of quality. The quality of the information provided by extension services is key to their effectiveness. However, an assessment of the capacity and performance of agricultural extension service providers in Malawi identified several challenges including the deployment of unqualified extension officers and inadequate training and capacity-building programs for extension staff (Government of Malawi 2021). Interviews held for the present study pointed to a lack of training facilities and means of transportation (such as motorbikes, cars, and fuel allowances) also being major impediments to service quality

Overreliance on foreign financing for extension services in Malawi poses significant risks to their sustainability, effectiveness, and independence. In Malawi, extension services have been mostly financed off-budget, by development partners. The main donors supporting extension services have been the EU and USAID (Figure 23). From 2016/17 to 2021/22, the Government of Malawi contributed only 16 percent of the cost of these services, far below the requirements of the National Agricultural Extension and Advisory Services Strategy (NAEASS). This low level of domestic funding suggests a likely lack of government ownership and accountability, something that could potentially be contributing to limited monitoring and evaluation and inefficiencies. Heavy reliance on external funding has also made extension services vulnerable to the availability and continuity of foreign aid. Inconsistencies and shifting donor priorities can disrupt long-term planning and implementation, adversely affecting the provision of these critical services.

Figure 23: Funding of Training and Extension Services in Malawi



Source: IFMIS.

Note: GoM = Government of Malawi; RNE = Royal Norwegian Embassy; WFP = World Food Programme. The chart captures major sources of funding for extension services and may omit more minor ones.

Estimated at 2.5, the BCR of public extension services was higher than that of input subsidies. The impact of access to public extension was estimated by comparing households that had contact with a public extension worker with those that had none. Using PSM, the analysis found that the value of the crop output was 16 percent higher among households that received a visit, and this result was significant at the 1 percent level. To estimate per household costs, we take a ‘first principles’ approach instead of detailed costing data which are not available. We use total spending on public extension services from the PER data and impute the total number of households served using survey sampling weight of the IHS survey.

The positive result conforms to expectations. Many studies have shown that investments in public goods such as extension services have a positive and even ‘high’ return per US dollar spent, demonstrating that extension services are effective at improving productivity (Buehren et al. 2017; Jayne and Sanchez 2021).

However, even though the BCR of extension services is higher than input subsidies, it is on the low side compared to regional benchmarks offered by other studies. As a point of comparison, the BCR of extension was estimated at about 9 in Tanzania (World Bank 2022), and Goyal and Nash (2017) estimated that it ranged from 6.8 to 14.2 across Africa. Malawi’s lower returns to extension spending may be partially explained by the challenges highlighted above, such as poor quality of advice due to limited training and capacity building of staff and a lack of infrastructure. Further research is called for to evaluate the impact of extension services in Malawi at the program level to generate more precise estimates and explore drivers of low returns. Nevertheless, the present results are encouraging, pointing both to the net benefits and potential upside of investments in extension.

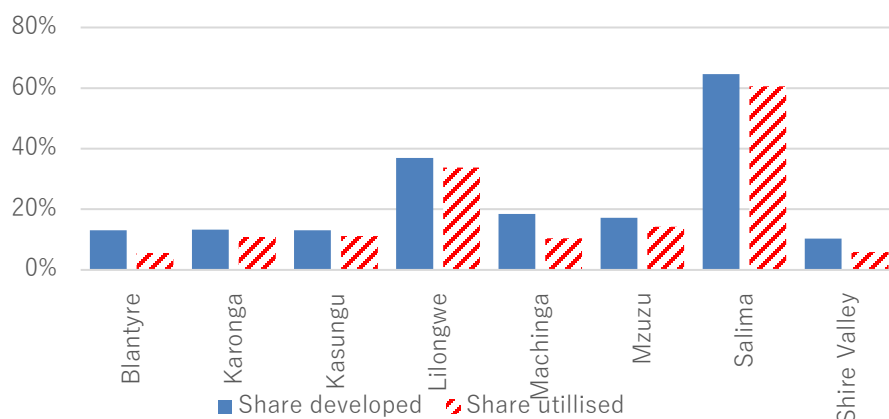
5.3 Irrigation

Malawi aims to significantly increase the area under irrigation to help boost and stabilize agricultural growth. The country's current development agenda, *Malawi 2063*, aims to increase the area under irrigation from 29 percent of irrigable land in 2019 to 60 percent by 2030, to 83 percent by 2040, and 100 percent by 2050. The Irrigation Masterplan and Investment Framework (2015–2035) presents a detailed implementation plan that includes the estimated costs of irrigation development, types of irrigation and sources of water, and specific investment priorities. The Department of Irrigation leads the overall strategy for the development and utilization of irrigation schemes. Another important entity is the national Water Resources Authority, which is responsible for the regulation and management of water resources as guided by the National Water Resources Management Policy. Water users' associations (WUAs) are established at the stream or source level and made responsible for managing, distributing, and conserving water resources. Additionally, they collect water user charges on behalf of the Water Resources Authority and represent the water users within their respective communities. The government also provides tax incentives to the irrigation sector. Specifically, investors are granted exemptions from duties and excise taxes on imported equipment used in irrigation. However, Malawi's land tenure laws and customs are one of the major obstacles to irrigation development, as customary landholders are reluctant to allocate land for irrigation projects due to concerns about losing ownership or control.

A small proportion of Malawi's farming household's benefits from irrigation schemes, with significant regional disparities. Figure 24 presents data on the share developed and utilized out of the potential irrigable area across Malawi's eight ADDs. The Salima ADD has the largest share of developed land and the largest share of utilized¹² land out of the potential irrigable area. This is followed by the Lilongwe ADD. The Shire Valley ADD has the lowest developed irrigation area at 10.3 percent and the second lowest utilization rate at 5.9 percent after the Blantyre ADD at 5.6 percent. Various technologies have been adopted for irrigation, and these include gravity-fed irrigation/river diversion, treadle pumps, motorized or solar-powered pump-based irrigation systems (including center pivots, sprinklers, and drip kits), and watering cans. Data provided by the Ministry of Agriculture as of March 2024 show about 8 percent of farming households benefited from irrigation schemes. These findings are consistent with previous research, which showed that most smallholder farmers rely on rain-fed farming despite investments in various irrigation projects. This is due to factors such as being located outside the scheme's boundaries or being unable to afford WUA membership fees, highlighting the need for more inclusive and equitable solutions (World Bank 2017).

¹² This is regardless of the frequency or how often the schemes are utilized in a year. Although the utilization rates seem high, key informants mentioned that most farmers use irrigation schemes only once a year or during a single growing season, which would generally be considered low utilization.

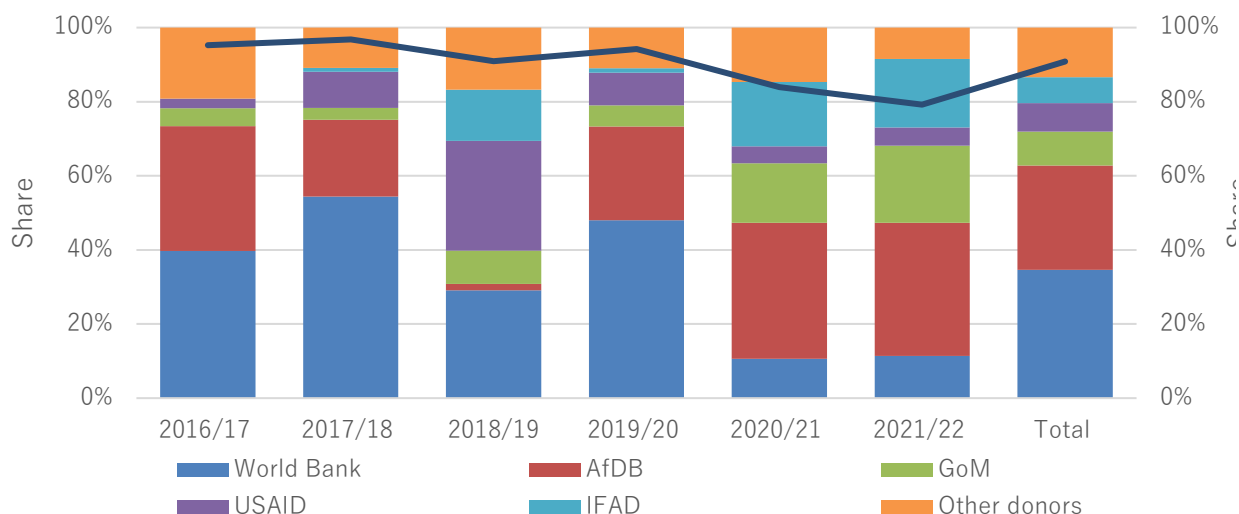
Figure 24: Irrigation Area Developed and Utilized as a Share of the Estimated Potential



Source: Department of Irrigation.

Irrigation expenditures in Malawi are highly dependent on foreign financing, accounting for approximately 90 percent of total spending toward irrigation development. On average, public expenditure on irrigation in Malawi has been 5 percent of the total public expenditure on food and agriculture during the review period, and most of the funding is provided by development partners. Up to 15.6 percent of the public expenditures by development partners is allocated to irrigation, while only 1.6 percent of public expenditures by the government is allocated to irrigation. Key sources of funding for irrigation development are shown in Figure 25.

Figure 25: Funding of Irrigation Development in Malawi



Source: IFMIS.

Note: IFAD = International Fund for Agricultural Development.

Returns to irrigation have been low in Malawi. On the benefits side (estimated using PSM), the value of crop output was 10 percent higher among households that used irrigation, and this estimate was significant at the 5 percent level. However, secondary data drawn from eight irrigation projects in Malawi

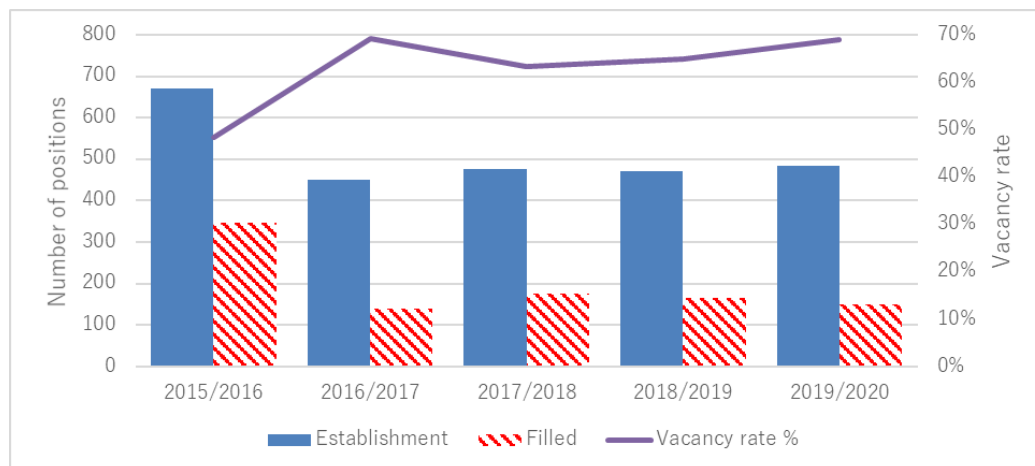
consisting of solar and gravity-fed irrigation systems showed that the cost of providing irrigation was very high. Gravity irrigation systems cost between US\$10,238 and US\$16,538 per ha and solar-powered irrigation systems cost between US\$29,824 and US\$33,749 per ha. While studies have found that irrigation costs more in Sub-Saharan Africa than it does in other regions for both new and rehabilitation projects, Malawi's irrigation costs have been high even by regional standards. For example, based on an evaluation of the Agricultural Sector Development Program from 2006/07 to 2018/19 in Tanzania, the average cost of providing irrigation was US\$3,500 (World Bank and FAO 2022). That said, even at the average regional costs of US\$1,500 per ha for small-scale projects and US\$3,000 per ha for complex, large-scale projects (Shah et al. 2020), the cost of investment cannot be recovered even after 25 years. Nonetheless, given the data limitations, further analysis is needed to assess the BCRs and impacts of the various irrigation schemes that are currently being implemented in Malawi.

The literature on irrigation in Malawi documents irrigation's potential as well as its shortcomings in practice. Irrigation schemes show low irrigation efficiency due to issues such as poor water supply, inadequate scheduling, a deficit of canal maintenance, and a lack of training in sustainable water resource management (Sibale et al. 2021). Another factor explaining poor returns is that farmers continue to grow low-value staple crops in irrigated fields. Focus groups held in the context of this study also found farmers to be underutilizing existing schemes, including by continuing to grow a single crop on irrigation lands. Growing more and higher-value crops over multiple seasons could significantly improve returns on irrigation investments.

To successfully raise agricultural productivity, support for irrigation needs to go beyond infrastructure development. As has been demonstrated across many contexts,¹³ the development of physical irrigation infrastructure is more effective when complemented by other interventions that, for example, help increase access to inputs such as fertilizer and crop management techniques, farm management skills, and access to markets (Schuenemann et al. 2018). Interviews with stakeholders in Malawi highlighted that the underutilization of irrigation schemes can partly be addressed by enhancing access to affordable finance for the procurement and rehabilitation of irrigation equipment, farmers' capacity to collectively manage irrigation schemes, and their access to markets. They also pointed to the need to address the severe shortage of human resources in the Department of Irrigation, which in 2019/20 had a 70 percent vacancy rate (Figure 26).

¹³ See for example Government of Zimbabwe and World Bank (2019).

Figure 26: Staffing Levels in Malawi’s Department of Irrigation



Source: Department of Irrigation.

5.4 Seed Systems

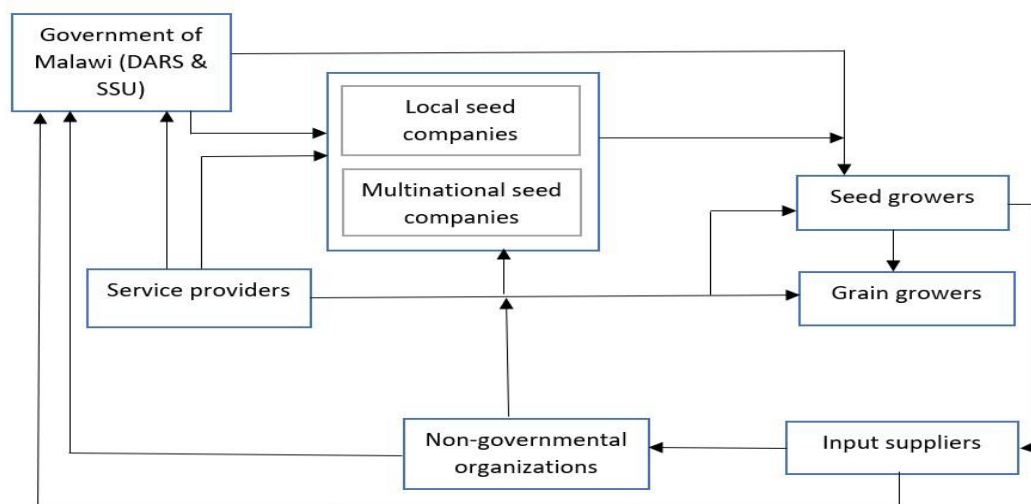
Seed systems in Malawi aim to increase farmers’ access to improved seeds, helping increase agricultural productivity. Improved seeds are high yielding, are genetically and physically pure, and have a high germination rate (Joshi and Braun 2022). These include both hybrid and open-pollinated varieties (OPVs). The use of improved seed and seed system development are hugely important for boosting agricultural productivity and resilience to diseases and climate variability, thereby increasing food security and farmer incomes.

The seed system in Malawi involves several stakeholders. The Ministry of Agriculture bears primary responsibility for formulating and executing seed policies and programs, frequently collaborating with other ministries and agencies. It is also responsible for breeding different seeds and regulating the seed industry through the Department of Agriculture Research Services (DARS) and the Seed Services Unit (SSU) within DARS. The SSU manages the registration of seed multipliers, certification, inspections, and testing to ensure farmers’ access to high-quality seeds. Private sector stakeholders include service providers, input suppliers, NGOs, seed companies, seed growers, and grain growers. Seed companies, both local and multinational, play a pivotal role in the multiplication of certified and foundation seed. The multinational seed companies also perform breeding and varietal development in their research departments. Figure 27 provides an overview of the seed value chain and its key players in Malawi.

Malawi has 12 active breeders of maize, bean, groundnut, and soybean seeds. The seed multiplication process typically involves several stages aimed at ensuring the availability of high-quality seeds for farmers. Seeds are categorized into three main classes: breeders’ seed, basic or foundation seed, and certified seed. The breeders’ seed constitutes the initial stage and involves the highest level of genetic control, which ensures genetic purity and the accuracy of variety characteristics. This seed is developed by the Consultative Group on International Agricultural Research (CGIAR) centers and research stations such as those in Chitedze, Bvumbwe, Lifuwu, and Lunyangwa. Foundation seed is sourced from DARS, CGIAR centers, individual producers, and seed companies (regional and multinational), which maintain its genetic purity for further multiplication. It is produced from the breeders’ seed under conditions that

preserve genetic purity and identity, serving as the primary source for further multiplication. In 2017/18, seed companies, DARS, and International Center for Tropical Agriculture (CIAT) led the production of foundation seed for maize and bean, and by 2021/22, they also produced foundation seed for groundnut and sorghum. One cotton seed variety was produced in 2017/18 but none in 2021/22. Maize and bean seed varietal production also declined over this period. Maize had the largest number of certified seeds (34) produced from 2017 to 2020. In comparison, three varieties of sorghum were released from 2018 to 2020. For legumes, only three certified groundnut and soybean varieties were produced and registered with DARS from 2017 to 2020.

Figure 27: Seed Value Chain Stakeholders

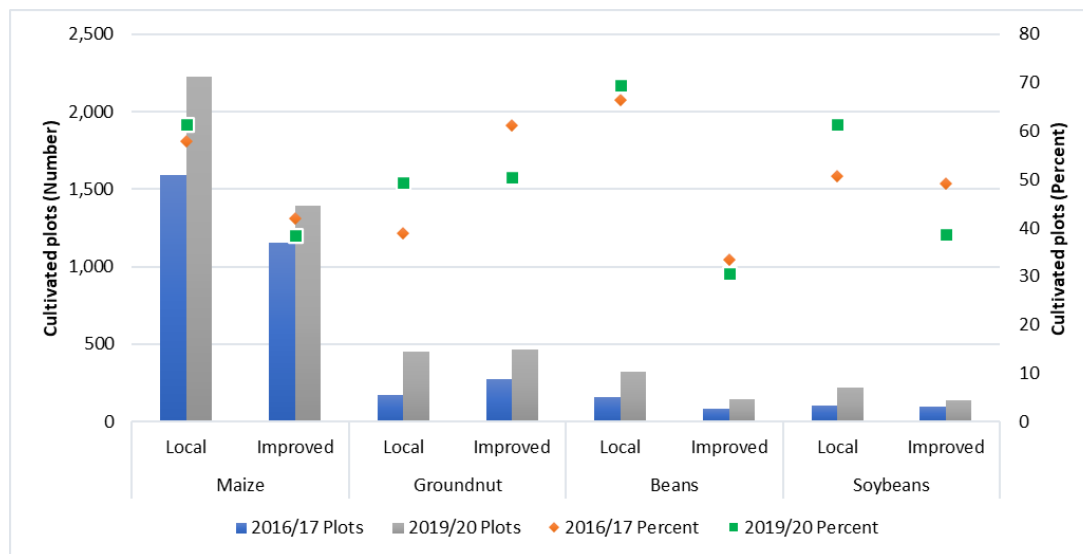


Source: Based on STAM 2024.

Farmers’ utilization of improved seeds has remained lower than anticipated and even decreased in Malawi.¹⁴ In Malawi, the primary source of improved seeds for farmers is the FISP/AIP, but utilization of improved seeds remains lower and decreasing than anticipated. Figure 28 shows the decline in share of plots planted with improved seed in 2016/17 and 2019/20 growing seasons. The key factors for the poor adoption are lack of timely availability and seed shortage, which hamper their utilization. This imbalance can partly explain the low adoption as it leads farmers to resort to the use of traditional and uncertified seeds (Gebrehiwot et al. 2024; Sheahan and Barrett 2017).

¹⁴ OPVs produce seed true to type if they are allowed to cross-pollinate only with other plants of the same variety. If they cross with other varieties of the same species, their seed will not come true. Hybrid varieties are those produced from the crossing of two different inbred lines, resulting in offspring with specific characteristics.

Figure 28: Number and Share of Plots Cultivated with Improved and Local Seed in Malawi



Source: STAM.

While the BCR for seed systems was not calculated due to a lack of cost data, there is evidence that the use of improved seed was associated with higher on-farm productivity. Using PSM, the analysis showed that the value of output was 18 percent higher among households that reported using improved seeds, and this effect was statistically significant at the 1 percent level. The cost analysis was not possible for a lack of data on the cost of developing improved seeds.

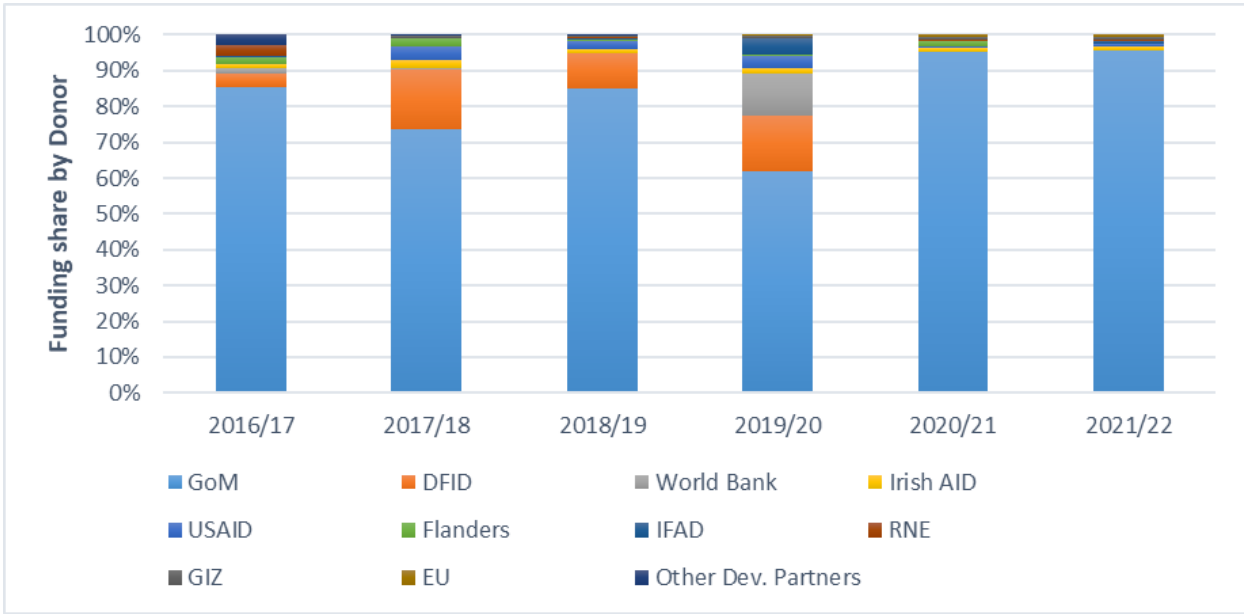
While improved seed varieties have higher yields than local seed varieties in Malawi, several factors have limited their impact. For example, the yields of improved seeds can be undermined by the prevalence of fake seeds, the recycling of hybrid seeds, and poor soil health and management (Muyanga et al. 2020). Moreover, if extension services can help farmers benefit fully from improved seeds, access to these services has been limited in Malawi. As of 2019, only 11.5 percent of farmers received advice on new varieties, 9.3 percent on fertilizer use, and 7.8 percent on irrigation.

Looking ahead, new strategies and renewed efforts are essential to develop seed systems that meet farmers' needs and encourage adoption. Collaborations between the government, domestic and international research institutions, and private seed producers and distributors could help ensure a consistent and increased supply of high-quality seeds. In this setup, the public sector can incentivize private sector investment in seed production, increasing the involvement of commercial breeders and expanding seed availability. The government also plays a crucial role in quality assurance, research and development (R&D), and supply chain improvements. Although only a small percentage of farmers in Malawi use certified seeds, there is growing interest in farmer-driven seed systems, which integrate formal and informal seed multiplication and distribution channels.

Budget allocation toward R&D, which included seed development, also shows a decline. The Government of Malawi is the primary financier in the seed sector, funding over 60 percent of the expenditure, with additional contributions from development partners (Figure 29). Government dominance in financing seed systems is due to its participation in the AIP, which is one of the objectives

of improving access to improved seed. It is necessary that the government invests on other seed systems aspects such as quality assurance, R&D, and supply chain improvements. The aim should be to prioritize strategies aimed at leveraging existing resources effectively while advocating for increased investment in agricultural R&D. This entails fostering partnerships with research institutions, international organizations, and the private sector to pool resources, share expertise, and enhance the efficiency of research efforts.

Figure 29: Funding of Malawi’s Seed Sector



Source: AgPER data.

Note: DFID = Department for International Development; GIZ = Deutsche Gesellschaft für Internationale Zusammenarbeit.

6 Price Incentive Analysis

In addition to public expenditures, governments use policies which regulate, incentivize, or inform the choices of farmers and other agents across agricultural value chains. While public expenditure is used to make goods and services available to the food and agriculture sector, policies such as establishing a legal framework, trade policies, and marketing policies are used to create incentives or disincentives to influence behavior. It is important to monitor and measure support or implicit taxation through policy measures to ensure that they adequately contribute to the sectoral development objectives. A key question that governments need to consider is whether the policy incentives and public expenditure are coherent, or do they provide contradictory signals.

To understand the role of policy incentives in Malawi’s agrifood sector, a price incentive analysis was carried out to complement the AgPER. To gain a deeper understanding of the policy and market influences faced by agricultural producers, this section summarizes the key lessons stemming from an analysis of the market price distortions for several commodities. The approach, based on the OECD¹⁵-FAO-

¹⁵ OECD = Organization for Economic Co-operation and Development.

MAFAP methodology for calculating price incentives (Box 3), involves estimating market price support by comparing farmgate prices to reference prices.

Box 3: Price Incentive Analysis Methodology

The analysis is based on the comparison of observed domestic prices and constructed reference prices. The reference price is computed by using the CIF (cost, insurance and freight) or FOB (free on board) price, depending on the trade status of the commodity, and by accounting for marketing margins and exchange rates as well as transportation, processing, and handling costs, and applicable taxes and fees. The resulting reference or benchmark price is considered to be free of influence from domestic policies and markets. The method is rooted in the law of one price, according to which there is one prevailing price for each product in a perfectly competitive market. This law of economics applies to goods that are perfectly homogeneous, perfectly substitutable in the local market in terms of quality, or simply comparable. Hence, quality and quantity adjustments are made as needed to ensure like-to-like comparisons.

Domestic prices are usually compared to reference prices at the farmgate to estimate whether a given policy is incentivizing producers by keeping prices above the reference price or implicitly taxing them by forcing prices below the reference price. This comparison is captured by the nominal rate of protection (NRP) indicator, which is calculated as $NRP_h = \frac{PG_f}{RP_f}$, where PG_f is the price gap between the reference and observed farmgate prices, and RP_f is the reference farmgate price.

A positive NRP indicates that the domestic price of a given commodity is higher than the reference price, implying that, on net, the domestic price—or the policies and market conditions shaping it—is incentivizing farmers to produce more. A negative NRP means that the reference price is higher than the domestic price, indicating that domestic policies and market conditions are disincentivizing production. More details are available in the World Bank toolkit on repurposing (World Bank 2024).

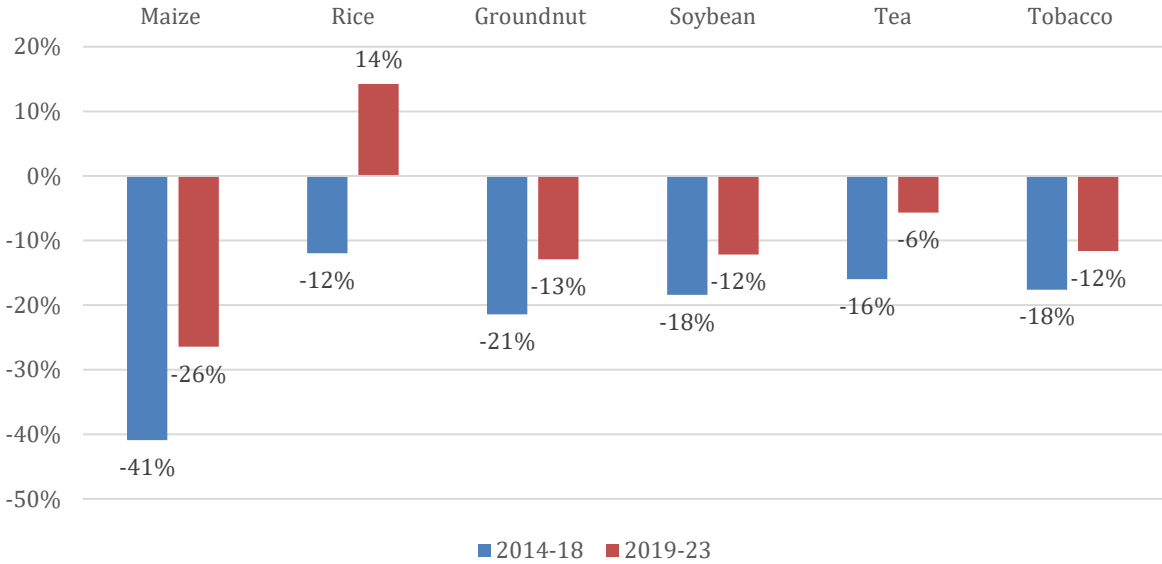
For this study, the primary data sources included traders, industry representatives, policy makers, government MDAs, and farmers' associations. The secondary sources included the Ministry of Agriculture, the National Statistical Office of Malawi (NSO), the WFP, the Tea Association of Malawi Limited (TAML), the Tobacco Commission (TC), the Agricultural Research and Extension Trust (ARET), National Smallholder Association of Malawi (NASFAM), the Karonga Smallholder Farmers Association (KASFA), Kasinthula Cane Growers Ltd, and Dwangwa Cane Growers Ltd.

Price incentives were calculated for maize, groundnuts, tea, tobacco, soybeans, and rice. These commodities represent 70 percent of the value of agricultural output in Malawi and were selected based on their important contributions to value added, food security, and national imports and exports, as well as high associated levels of policy interest and data availability. Maize is a staple food for the majority of the population and a significant source of income for farmers, constituting more than 90 percent of the total dietary intake. Rice and groundnuts also play a crucial role in food security and income generation, but most of the domestic production of rice is consumed locally while groundnuts are among the most traded agricultural commodities. Malawi exports about 6.7 percent of its groundnut production through formal channels. Tobacco, sugar, tea, and soybean are four major cash crops for Malawi. While Malawi ranks among the top tobacco-producing countries in the world and is the second largest producer in Africa after Zimbabwe, its production has been declining since 2009. Soybean production has been touted as an alternative to tobacco and is commercialized at high levels in Malawi.

The analysis points to a potential lack of coherence between policy incentives and public expenditures. Overall, agricultural policy and market environments have implicitly taxed farmers (Figure 30). The analysis reveals that strong price disincentives exist at the farm level: farmgate prices received by farmers

were lower than undistorted reference prices over the studied period. While a major aim of government spending is to encourage farm-level productivity and output, the government has effectively been dissuading these through the market price distortions its (other) policies create, together with value chain inefficiencies. This implicit taxation has discouraged farmers from investing in their productivity or increasing their output. Figure 30 shows that the average NRP over the last decade has been negative.

Figure 30: NRPs of Main Crops in Malawi

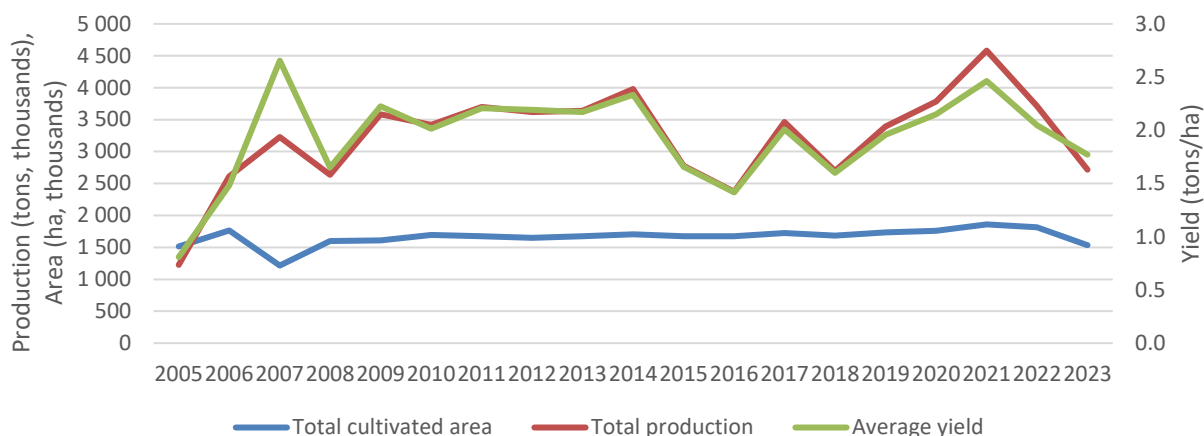


Source: AgPER data.

6.1 Maize

Maize is a vital agricultural commodity in Malawi. Its production is primarily managed by smallholder farmers across the northern, central, and southern regions, including districts such as Karonga, Mzimba, Nkhonkhotakota, Mchinji, Dedza, Chikwawa, Blantyre, Mulanje, and Machinga (Chirwa, Matita, and Doward 2020). Despite being rain-fed, maize production has remained stable, significantly contributing to food security and rural livelihoods (Figure 31) (Government of Malawi 2022c). However, challenges such as climate variability, pest infestations, and high production costs affect production levels and farmer incomes (Soko, Mkwambisi, and Mhango 2021). The rain-fed nature of maize production makes it susceptible to weather variations, particularly rainfall changes. For instance, low rainfall years such as 2015/16 saw low production levels, while high rainfall years such as 2006/07 and 2020/21 saw high ones. Thus, rainfall changes, along with the quality and use of fertilizers and seeds, significantly influence maize productivity in Malawi.

Figure 31: Maize Production and Productivity in Malawi



Source: Government of Malawi 2022c.

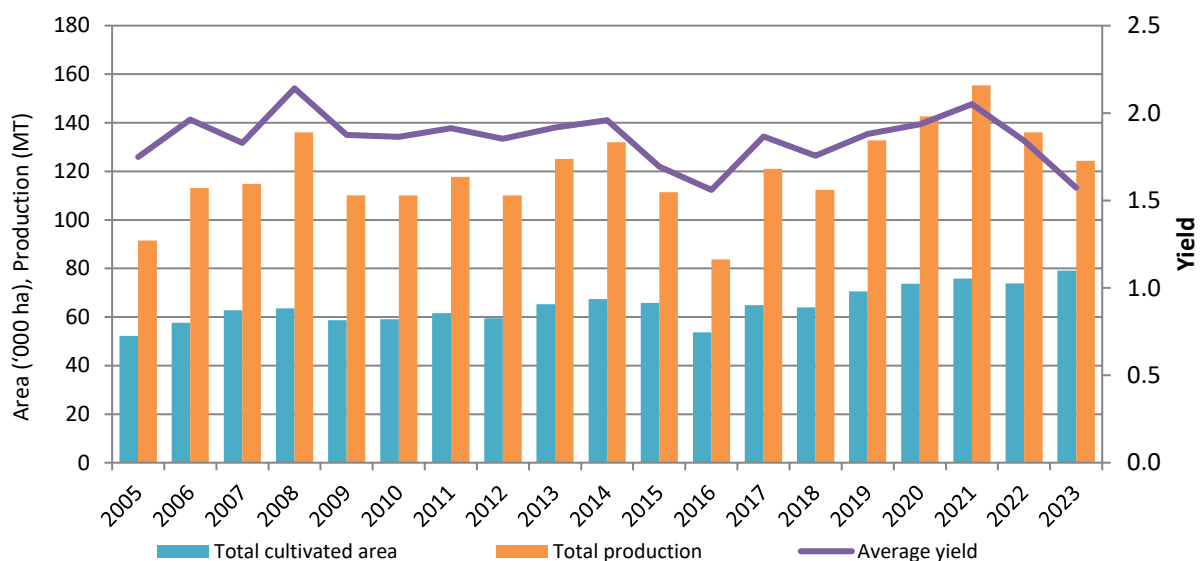
NRP for maize was negative over the analysis period (Figure 30). The results show that maize farmers are implicitly taxed, reducing incentives to invest and increase productivity. The NRP at farmgate averaged -26 percent over the last five years. Based on the latest data available from MAFAP, average NRP in the neighboring countries of Zambia and Tanzania was -13 percent (2015-2020) and -16 percent (2017-2021), respectively, over; however, for Mozambique the NRP was positive 19 percent (2015-2019). If we look at the wider East Africa region, we see that after Ethiopia, Malawi has the highest negative NRP for maize while several countries such as Burundi, Kenya, and Uganda have a positive NRP. Maize is a tricky commodity for policy makers as it requires a balance between food security goals by keeping maize prices low which is a staple commodity and encouraging more production and productivity by increasing farm incomes. The results suggest that keeping prices low has been the primary objective of policy makers who use measures such as trade policy and parastatals to stabilize prices. While subsidies to maize somewhat counteract the negative NRP, these measures are transforming maize into a subsistence commodity as, according to Edelman et al (2016), the low price of maize is the main reason why large-scale farmers in Malawi do not grow maize commercially.

6.2 Rice

Rice is essential in Malawi’s agricultural landscape, serving as a crucial commodity for ensuring food security. Rice in Malawi is mainly produced in the lakeshore districts of Karonga, Nkhatabay, Nkhotakota, and Salima, as well as some other districts including Mchinji and Machinga. Despite variations in agroecological conditions and farming practices across these districts, rice remains a vital crop for both subsistence and commercial purposes. Figure 32 shows how rice production and productivity have remained almost constant. The highest rice production levels were observed in 2008, 2014, and 2021, the years when Malawi experienced significant amounts of rainfall. This pattern underscores how the productivity of rice farming in Malawi is influenced by rainfall to a certain extent, particularly because most of the rice is grown under rain-fed conditions. Rice is also one of the food security crops in Malawi and suffers from ad hoc government export restrictions. An import or export permit from the Ministry of Agriculture and a license from the Ministry of Trade are required for rice to be exported (Malawi Revenue

Authority n.d.). At the time of this analysis, there were no known bans on the importation or exportation of rice in Malawi.

Figure 32: Rice Production and Productivity in Malawi



Source: Government of Malawi 2022c.

The NRP for rice switched from negative to positive over the analyzed period. During 2014–18, farmgate price was lower than the reference price and the NRP averaged –12 percent; however, over 2018–23, the NRP has averaged positive 14 percent. This was primarily due to a decline in the import prices of rice for 2018 and 2019; however, the trends reversed post COVID-19. Rice prices in Malawi have followed production/supply trends. Years of production deficit have had higher prices, and vice versa, reflecting a close connection between climate variability and rice prices, since production is highly correlated to amount of rainfall received. Rice production fell significantly in 2016 when there was El Niño weather. This led to high prices both on the domestic and international levels. The prices fell in 2017 due to high domestic production. However, the prices have been on the rise since 2020, largely driven by COVID-19-related supply shocks due to the increase in the prices of production inputs. Among the neighboring countries of Mozambique, Tanzania, and Zambia, we observe a similar trend as all had negative NRP for rice at –12 percent (2015-19), –33 percent (2017-21), and –34 percent (2016-20), respectively, based on MAFAP data.

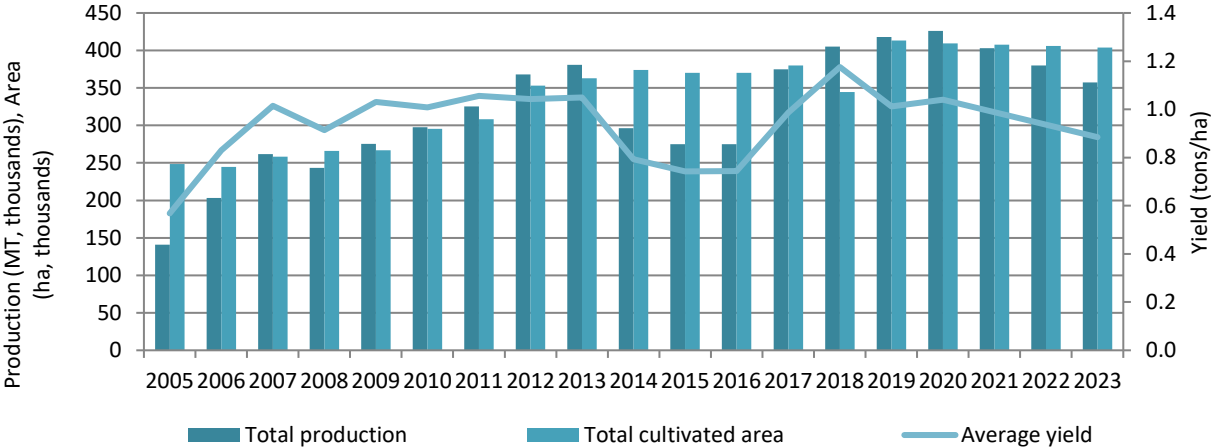
6.3 Groundnut

Groundnuts, Malawi’s leading legume, are produced in almost every district in Malawi, mostly by smallholder farmers. Both their output and the area they occupy have been on the rise, with production peaking at 425,000 metric tons in 2020 (Figure 33). The lowest production levels since 2005 were observed in 2015 and 2016, when Malawi was affected by El Niño. At an average of 0.9 tons per ha, groundnut yields are well below their potential (estimated at 2.5 tons per ha) and have room to improve.

Groundnuts are one of the most traded agricultural commodities in Malawi. They are important cash crops for households and are traded both domestically and internationally, through a combination of

formal and informal channels (Benson and Jolex 2022). Based on formal trade alone, Malawi is a net exporter of groundnuts, exporting about 7 percent of the groundnuts it produces on average. Within the domestic market, groundnuts are traded in their shells at the farmgate, where vendors and other market players, including the NASFAM, buy the nuts for resale or processing.

Figure 33: Groundnut Production and Productivity in Malawi, 2005–2023



Source: Government of Malawi 2022c.

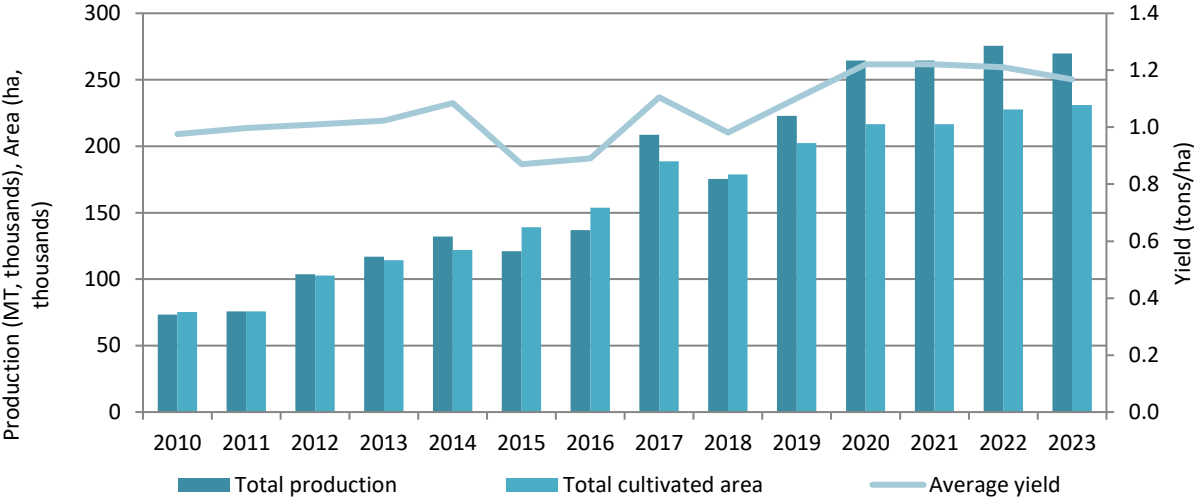
The NRP for groundnuts was negative over the analyzed period. Groundnut farmers on average faced an NRP of –13 percent over the last five years. This result is similar to majority of other African countries for which data are available where Ghana, Mali, Zambia, and Zimbabwe had a negative price support of –50 percent (2015-19), –29 percent (2016-2020), –20 percent (2016-20), and -55 percent, respectively. There is significant room to improve the efficiency of the groundnuts value chain to facilitate exports. The process of obtaining the required documentation for exports in Malawi is lengthy and not facilitative for commodities such as groundnuts which can easily develop mold if it takes long before they are cleared. Poor phytosanitary systems are also a challenge. As a result, goods can end up pivoted from Europe to regional markets which are not as lucrative. Hence, investments to improve traceability and phytosanitary standards in the value chain can help in improving returns.

6.4 Soybean

Soybeans are an important commercial crop in Malawi and have been touted as a potential alternative to tobacco. Like groundnuts, soybeans are produced in nearly every district of Malawi, and the country is the fifth-largest producer of them in Africa. Soybean production has risen steadily in recent years, reaching a high of 275,000 tons in 2022 (Figure 34), even as soybean trade has grown, driven by increasing demand from domestic and international markets. Malawi exports soybeans to neighboring countries such as Tanzania, Zimbabwe, South Africa, Botswana, Kenya, and Zambia and international markets such as the United Arab Emirates, India, and Pakistan. Soybeans are mainly used in the production of processed soy food products, including soy meat, soy milk, and soy sauce; animal feed; and soy oil used in cooking, food processing, and industrial applications. The sector’s development is supported by the Malawi Oil Seed Products Technical Working Group (OSP TWG) and the Malawi Oil Seed Sector Transformation (MOST), with the latter focused on increasing farmers’ access to improved soybean seeds and inoculants.

The NRP for soybeans at the farmgate averaged -12 percent (2019-23) . Soybeans are mostly a commercial crop for Malawian farmers, with about 81 percent of the total production going to the market (Benson and Jolex 2022). It is a strategic crop that plays an important role in farm households’ incomes. Therefore, access to markets and good prices provide incentives to farmers for increased production. The country’s soybean trade has experienced steady growth, driven by increasing demand from domestic and international markets—Malawi, Zimbabwe, South Africa, Botswana, Kenya, and Zambia and international markets such as the United Arab Emirates, India, and Pakistan. High transaction costs at the farmgate are a major challenge, and lowering this cost can improve the price received by farmers.

Figure 34: Soybean Production and Productivity in Malawi, 2010–2023

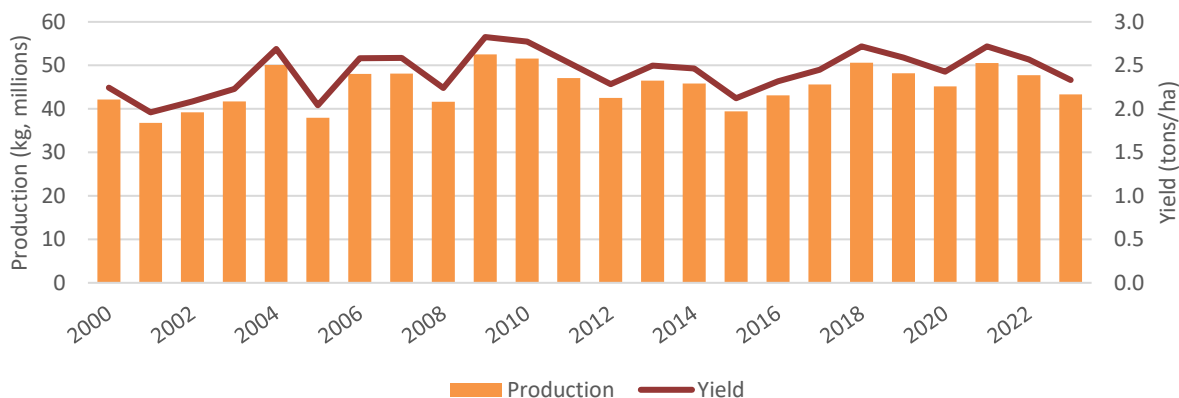


Source: Government of Malawi 2022b.

6.5 Tea

Tea is an important cash crop in Malawi. It is the country’s third largest agricultural export after tobacco and sugar, accounting for about 6.4 percent of the total export earnings (Government of Malawi 2018, 2022a). Within Malawi, tea is 93 percent produced on large-scale estates and concentrated in the southern part of the country, particularly in the Mulanje and Thyolo districts. Tea production has stagnated over the past decade, with an area under production estimated at 18,600 ha (Figure 35). There are limited avenues for tea estates to expand, and most trees have outlived their productive lives. In these circumstances, the only way to improve tea productivity is to uproot old trees and replant. Facing stiff competition from macadamia nuts, some farmers have been replacing tea plantations with macadamia ones.

Figure 35: Tea Production and Productivity in Malawi, 2000–2023



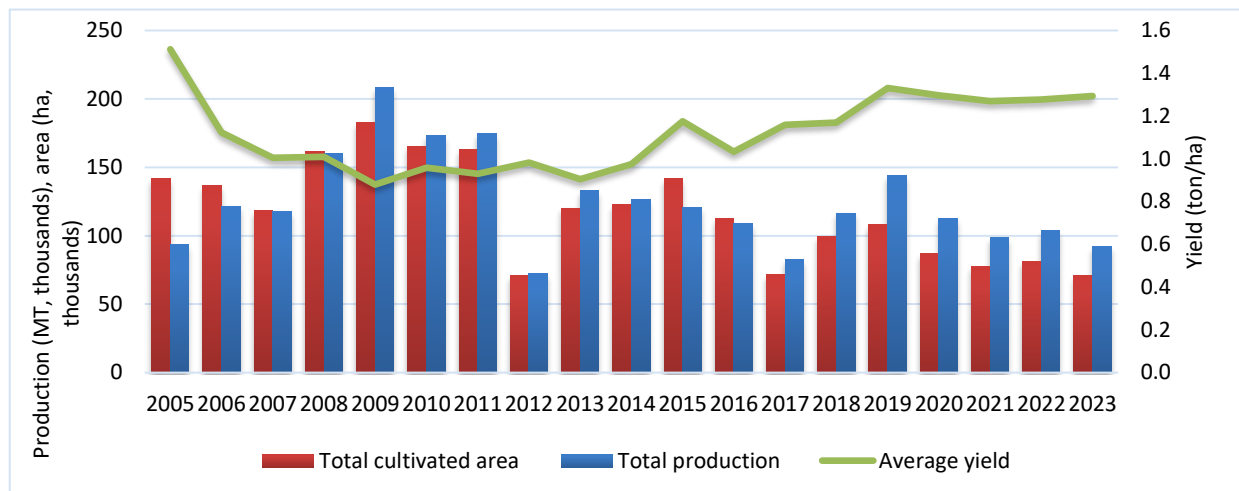
Source: TAML.

On average, NRP was –6 percent for tea during 2019–23. Disincentives at the farmgate are primarily driven by an artificially low base price of green leaf. Tea in Malawi is sold through the Tea Action Floors in Blantyre, Malawi, located within the vicinity of the production hub. Tea trading involves the participation of brokers who act on behalf of association members to purchase tea. Producers have the option to share logistics responsibilities, facilitating efficient transportation and delivery of tea products. Private treaty contracts enable direct transactions between buyers and sellers, while auctions provide a transparent platform for price discovery. However, all tea exports must be routed through the TAML, highlighting the central role of this entity in regulating trade activities. Outgrower tea prices are determined on an annual basis by the TAML. The Ministry of Agriculture plays a supervisory role in negotiating green leaf prices and ensuring fairness and transparency in producer-buyer interactions.

6.6 Tobacco

Malawi has a long tradition of tobacco cultivation, and the cash crop remains the most important in the country. Malawi ranks among the top tobacco-producing countries in the world and is the second largest producer in Africa. About 87 percent of the tobacco produced in 2023 came from smallholder farmers who sell through the tobacco auction floors operated by Auction Holdings Limited (AHL). Increasing demand for traceability and quality has resulted in an integrated production system (IPS) in which tobacco merchants enter contracts with tobacco producers where they agree to buy the tobacco from farmers in exchange for the provision of inputs, agricultural extension, and production-related services. Tobacco production in Malawi has been declining since 2009 (Figure 36). Output declined from 208,000 tons in 2009 to 92,000 tons in 2023. As Wineman et al. (2022) show, the percentage of farmers producing tobacco declined from 16 percent in 2004 to 5 percent in 2019. The productivity of tobacco has also remained low, even though it has slightly increased since 2009. It yields about 1.3 tons per hectare in comparison to a potential yield of 4 tons per hectare.

Figure 36: Tobacco Production and Productivity in Malawi, 2005–2023



Source: Government of Malawi 2022c.

On average, the NRP was –12 percent for tea during 2019–23, slightly better than –18 percent over 2014–18. This improvement can be partially attributed to the development of the IPS. However, farmers complain of excess cost and inefficiencies due to the lack of competition across the value chain. For example, farmers argue that they could potentially make their own reed baskets instead of being forced to buy baskets from the tobacco merchant. Similarly, the cost of fertilizer they get as input loans is most times higher than the commercial price. This is because the loan is charged in US dollars and remitted through deduction after the sale.

A functioning market information system and more developed service market could help improve farmgate prices. A market information system that disseminates domestic and international prices and supply and demand trends could have this effect by reducing uncertainty and information asymmetry in the market. A more developed service market that offers transportation, grading, and other services at competitive prices would also improve farmgate prices.

7 Key Takeaways and Recommendations

A central takeaway from this study is that Malawi should reassess how it allocates public agrifood resources and ensure better policy coherence to meet its sector-specific and national goals. Despite the significant attention and resources dedicated to the agrifood sector by the government and donors, its performance has been underwhelming. Malawi spends a larger share of its budget than most African countries. However, by absorbing some two-thirds of Malawi’s agricultural budget, the agricultural input subsidy program has significantly constrained spending on programs with a better track record of fostering agricultural productivity, food security, and growth. Agricultural extension and research, both considered catalysts of agricultural growth, are mostly funded by foreign donors. These findings underscore the need to improve the allocative efficiency of public agrifood expenditure in Malawi, particularly by focusing on investments supporting agricultural productivity.

Several opportunities exist to enhance the cost-efficiency and effectiveness of public agrifood spending, within and beyond the AIP. Key opportunities lie in improving the AIP’s targeting and design and in

strengthening extension services. The benefit-cost analysis clearly demonstrates that input subsidies have not created value on the ground, contrary to investments in public goods and services. Meanwhile, the low BCR of extension services, while over twice that of input subsidies, indicates ample scope for improving extension services' value for money. Similar opportunities exist to strengthen other public infrastructure and services (such as irrigation and seed systems) while also increasing the returns on investments in them.

To improve the agrifood sector's performance, it is also crucial to enhance policy coherence and improve the enabling environment. The study shows that policies such as export restrictions along with other value chain inefficiencies have suppressed farmgate prices, discouraging production and productivity enhancing investments. The first major disincentive has stemmed from price-setting interventions—by the government in the case of maize and rice and by private market-maker companies in the case of tea and tobacco. These price-setting interventions have kept domestic prices below international reference prices. At times, export bans and restrictions have also prevented farmers from accessing higher international prices (soybean, maize). These price disincentives have contributed to undermining public (and private) sector efforts, including those of foreign donors, to encourage increases in output and productivity.

The following recommendations are designed to highlight practical ways of enhancing the performance of Malawi's agrifood sector for the benefit of its stakeholders and the country at large.

(a) Reforming and repurposing AIP resources to increase support for more productivity-enhancing public goods and services has the potential to improve agricultural productivity and growth.

While the AIP is being downscaled, there are ways in which the government can increase its value for money. The first way would be to encourage a shift from government-led to private sector-led input (fertilizer) procurement and distribution processes, something the FISP did from 2014/15 to 2019 to develop a robust private sector led fertilizer industry. In addition, to improve efficiencies in budget implementation and monitoring, the government could consider fixing the subsidy level and letting farmers pay the difference between the subsidized and market prices. This change from the current practice would require a proper business-enabling environment—one with improved access to capital and financial risk management tools—for the private sector to ensure access to inputs. A second, complementary way of reforming the program would be to increase its agronomic efficiency, by increasing its focus on soil health and the diversity of farmers' needs across crops and agro-ecosystems.

The Government of Malawi is currently exploring several of these reform possibilities with the support of the World Bank under the Malawi Food Systems Resilience Program (Box 2). Considering their political sensitivity, the reforms of the AIP need to be pilot-tested and evaluated before being rolled out nationally and at scale. A key to constructive pilot efforts lies in ensuring high-quality monitoring and evaluation based on input from beneficiaries and stakeholders and using the findings to make improvements that are responsive to their experience and needs.

This report has shown that majority of the government's budget is spent on agricultural inputs, administrative expenditures, and food aid, leaving scarce resources to support essential public goods and services including extension services, R&D, and infrastructure such as irrigation. International evidence strongly demonstrates the higher value for money of investments in public goods while also highlighting

the significant and growing opportunity costs of other forms of spending, particularly in the context of climate change (Damani et al. 2023; FAO 2024).

Scaling down the AIP to free resources for more cost-efficient and effective investments and reducing market distortions is a long-standing recommendation in Malawi. This report has added to the evidence supporting this recommendation by showing that Malawi's investments in public goods such as extension services deliver better value for money.

One way to downscale the AIP would involve reducing its number of beneficiaries by resorting to more effective and selective targeting. More effective targeting would allow it to direct its subsidies to farmers that can effectively use fertilizers but underuse it due to affordability challenges. Malawi could potentially achieve this by leveraging its recently digitized farm registry National Agriculture Management Information System (NAMIS) which has already registered and geo-mapped over 3.4 million farming households.

Another way Malawi might improve the AIP's targeting is by using pricing (that is, by setting subsidy levels in such a way as) to get certain farmers—those who can make the most of the input subsidy—to self-select into the program. The advantage of this less top-down approach is that it is less error-prone, assuming that farmers are best placed to assess their own productivity and returns on investment (in this case, their returns on agricultural input purchases). Whereas less-productive farmers will only buy fertilizer at very low (highly subsidized) prices, more productive farmers can afford to pay more. Once the total amount of fertilizer available under the AIP is known, the government can set the subsidized price such that all of it is sold. This approach uses a market mechanism to distribute subsidized fertilizer efficiently (IFPRI 2022b). While the AIP is being downscaled, social safety nets such as cash transfers will need to be deployed to mitigate the negative impacts of reform on the least productive and vulnerable farming households, since many will lose some or all of the subsidy by design.

(b) Improving the efficiency and effectiveness of extension services in Malawi holds promise.

Redirecting part of the AIP's budget to extension services would help ensure its stability and coherence, which is currently challenging due to the dependence on project-based donor funding. With additional budget resources, extension services could address their staffing gaps by hiring, training, and better equipping extension officers, and providing them with necessary infrastructure and funding for their operations, including fuel for mobility. These additional resources could also be used to enhance the quality of training and services delivered. At a minimum, a more stable and predictable budget is needed to finance personal emoluments and recurring operational costs such as transportation, demonstration plots, and field visits. Malawi can learn from the experience of countries like Brazil and Vietnam which have improved their extension services by focusing on professional capacity building. For example, Vietnam's extension system emphasizes regular training for extension workers through partnerships with universities and research institutions.

A more pluralistic approach to extension could help the sector achieve higher productivity, diversification, value added, and resilience to climate change. Such an approach could be pursued by fostering stronger partnerships among government agencies, NGOs, development partners, research institutions, academia, and the private sector. Malawi's extension services could also improve their outreach and quality by leveraging all available means of reaching farmers. Various countries including India, Kenya, and Ethiopia have had some success developing integrated mixed-media platforms involving diverse stakeholders such

as NGOs, farmers' and research organizations, digital service providers, and companies to deliver tailored, on-demand information and advice to farmers with diverse needs, including in remote locations. Another interesting case is Indonesia, where the extension system has partnered with agribusiness companies to provide farmers training and support.

(c) The development of irrigation systems can be a means of enhancing the agricultural sector's productivity and resilience provided it is combined with investments in capacity building.

In the face of climate change and increasing water shocks, Malawi needs a larger and more cost-efficient irrigation system to maintain and enhance the agricultural sector's productivity and resilience. The study suggests the need to conduct impact assessments of existing irrigation schemes to better understand the returns to these investments given the high costs and low utilization by farmers. It is also important to have a systems approach to irrigation development that extends beyond the development of infrastructure, to also focus on management capacity. New management and pricing systems and capacity-building efforts are needed to enable WUAs to increase their revenue streams and improve irrigation services. There is also a need to address the existing shortfall of technical staff in the Department of Irrigation, which had about a two-thirds vacancy rate as of 2019.

In the Malawi context, participatory irrigation management models are a promising approach. Characterized by the active participation of farmers in the planning, implementation, and management of irrigation systems, the approach has been implemented successfully in many countries including India and Tanzania. Targeted capacity building is essential to the approach. In Andhra Pradesh and other parts of India, targeted support has empowered farmers to manage groundwater resources through community-based organizations. These participatory approaches have improved water-use efficiency, reduced conflicts, and increased agricultural productivity. In Tanzania, improved management systems are being piloted within existing public irrigation schemes with World Bank support (under the Food System Resilience Program-for-Results), with encouraging early results.

(d) Incentivizing private sector investment in diversified seed production, with a focus on crops such as groundnuts and soybeans, could also help sectoral performance.

Developing the seed sector in Malawi can foster agricultural growth. In the short run, the country could better leverage regional innovation through improved partnerships. In particular, the Southern African Development Community (SADC) Harmonized Seed Regulatory System (HSRS) enhances the availability of high-quality and certified seed varieties in the region. Malawi could capitalize on regional platforms of this kind to accelerate its access to seed innovation and work on regulatory alignment, awareness creation, and capacity building. In parallel, more investment in agricultural R&D is needed to complement such efforts in the longer run.

Meanwhile, much can be gained by fostering the development of farmer-centered seed systems in Malawi. These systems empower farmers by integrating their knowledge and preferences into seed interventions and enhancing their autonomy in seed selection, production, and exchange. Such systems generally help farmers access the seeds they prefer in a timely fashion. One way to strengthen such systems lies in promoting a decentralized seed distribution system involving cooperatives and private distributors.

Finally, reforms are needed to ensure quality control, certification, and the general integrity of the seed system to enhance farmers' trust in it. Key actions to combat the presence of fake seeds in the market include investing in public awareness campaigns and farmer education programs and strengthening seed certification processes. An interesting example comes from Uganda, where the National Seed Service conducts regular inspections to ensure that seeds meet quality standards. This approach has helped eliminate counterfeit seeds from the market.

(e) The government can improve farm investment and production incentives by reducing market distortions and value chain inefficiencies.

The price incentive analysis undertaken by this study highlights the need to improve policies to promote sectoral investment and growth. Export policies and restrictions, including high tariffs, quotas, and export bans, hinder the competitiveness of key crops. Improving the predictability and accountability of trade policies and restrictions is essential to unlock private sector investment and development. The Control of Goods Act foresees the more transparent triggering of export bans and opportunities for companies to plan their investments in production and trade. Its effective implementation could be a game changer for the sector.

(f) Given the agrifood sector's high levels of exposure and vulnerability to climate change, there is an urgent need to invest more in climate risk adaptation.

Considering Malawi's current exposure to weather shocks and climate change projections, disaster preparedness needs to be elevated as a national priority and climate change resilience needs to be mainstreamed in all agricultural investments. The first priority would be to develop national early warning systems addressing multiple risks including pests and diseases and extreme weather. Investments could be directed, among other things, to the development of digital platforms, links to regional systems, and dissemination. Strengthened early warning systems can help mitigate vulnerabilities and risks at both national and farm levels.

Malawi can get more for its money by realigning agrifood spending with available evidence and stepping up monitoring and evaluation to deepen its understanding of less-studied public support programs.

This study has highlighted significant opportunities to enhance the cost-efficiency and effectiveness of major agricultural support programs in Malawi. Given the country's constrained fiscal environment and substantial development needs, Malawi would benefit greatly from engaging in more evidence-based and well-targeted spending. Whereas the AIP and its predecessors have been extensively studied, critical knowledge gaps exist in relation to the performance of key public programs including extension services and those developing irrigation. To enhance these national programs, it is essential to conduct robust evaluations to determine what works, what does not, and at what cost—at both the project and household levels. A deeper understanding of these performance drivers will enable Malawi to increase the value it derives from its public expenditures.

Table 2 summarizes the report's recommendations and implementation steps that can be taken in the near and medium terms.

Table 2: Summary of Recommendations and Implementation Timeline

Recommendation	Short Term (1–2 years)	Medium Term (3–5 years)
1. Reform and downscale the AIP.	<ul style="list-style-type: none"> • Pilot and evaluate different reform options integrating soil health and legume seeds. • Improve the AIP targeting mechanisms, and leverage NAMIS to ensure that subsidies reach the most productive of needy farmers. • Redirect resources used to subsidize inputs to more productivity-enhancing public goods. • Implement safety nets for the most vulnerable farmers excluded from the AIP. 	<ul style="list-style-type: none"> • Reform the AIP at the national scale. • Establish a monitoring system to assess the impacts of the transition and implement corrective actions if needed. • Shift from public to private procurement and distribution systems. • Switch from top-down targeting of AIP beneficiaries to self-targeting using the subsidy pricing approach.
2. Strengthen extension services.	<ul style="list-style-type: none"> • Strategize and better support a pluralistic approach to extension services. • Increase and stabilize (central and local) extension budgets, including by improving coordination with donors and NGOs. • Address staffing shortages, enhance training, and invest in operational resources. 	<ul style="list-style-type: none"> • Enhance coordination and leverage private sector resources via public-private partnerships (PPPs). • Develop and roll out digital platforms for extension services.
3. Develop cost-effective irrigation systems.	<ul style="list-style-type: none"> • Invest in community demand-driven irrigation schemes. • Balance investments in hardware and human and institutional capacity. 	<ul style="list-style-type: none"> • Develop participatory irrigation management models.
4. Revitalize the seed system.	<ul style="list-style-type: none"> • Leverage regional innovation better via partnerships with SADC and others. • Strengthen seed certification processes. 	<ul style="list-style-type: none"> • Promote a decentralized seed distribution system that involves cooperatives and private distributors. • Combat counterfeit seed through awareness raising and continued quality assurance efforts. • Increase investment in agricultural R&D.
5. Reduce trade barriers and value chain inefficiencies and improve the enabling environment.	<ul style="list-style-type: none"> • Implement the Control of Goods Act. • Remove export bans (maize and soybeans), high tariffs, and quotas on export products (tobacco and sugar). 	<ul style="list-style-type: none"> • Invest in transportation and storage infrastructure to reduce market access costs.
6. Invest more in climate risk management.	<ul style="list-style-type: none"> • Enhance disaster preparedness and invest in early warning systems. 	<ul style="list-style-type: none"> • Integrate further climate-smart practices and climate resilience into agricultural investments and policies.
7. Carry out more monitoring and evaluation.	<ul style="list-style-type: none"> • Analyze the performance of irrigation and extension services programs at the project and household levels. 	<ul style="list-style-type: none"> • Enhance capacity to monitor and evaluate public spending programs.

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Annex: Detailed Functional Allocation Expenditures

Table 3: Detailed Functional Allocation of Public Agrifood Expenditures in Malawi (Nominal Terms)

	2016/ 17	2017/ 18	2018/ 19	2019/ 20	2020/ 21	2021/ 22	Grand Total
Total expenditures (on- and off-budget)	250.6	266.0	298.8	289.2	381.4	559.5	2,045.4
Production subsidies (variable inputs)	84.3	54.7	62.4	60.6	144.3	178.4	584.7
Extension	40.8	57.7	63.9	59.7	93.4	90.0	405.6
Admin	15.9	27.8	21.8	23.9	25.1	140.6	255.0
Other general expenditures	13.1	51.5	28.8	19.8	38.1	56.4	207.7
Food aid	22.0	24.5	69.2	11.8	11.4	1.5	140.3
Marketing	29.9	12.5	12.4	22.9	14.0	15.2	106.7
Irrigation	24.2	21.3	7.1	18.7	15.3	16.7	103.3
Research	12.9	7.7	9.3	30.1	20.4	21.1	101.5
Cash transfers	0.0	0.5	14.8	14.1	2.9	2.3	34.6
Technical assistance	3.5	3.8	2.4	4.0	7.5	11.8	33.0
Technical assistance (training)	0.5	0.2	0.6	9.3	0.2	18.7	29.5
Production subsidies (on-farm services)	0.2	1.9	1.3	2.0	6.1	3.6	15.1
Inspection	0.0	1.1	0.8	1.2	2.7	1.9	7.7
Storage	0.0	0.0	0.0	7.3	0.0	0.0	7.3
Feeder roads	0.0	0.3	4.0	0.0	0.0	0.0	4.3
Other agricultural infrastructure	0.2	0.0	0.0	3.6	0.0	0.5	4.3
Other production subsidies	3.0	0.0	0.0	0.0	0.0	0.0	3.0
School meals programs	0.0	0.0	0.0	0.1	0.0	0.7	1.0
Production subsidies (capital)	0.1	0.4	0.0	0.0	0.0	0.0	0.5
Off-budget expenditures	102.1	119.0	122.2	133.4	184.1	216.7	877.5
Extension	31.0	50.3	53.3	46.4	78.3	77.0	336.3
Other general expenditures	10.2	10.1	17.3	10.6	25.3	53.4	127.0
Marketing	25.5	10.0	11.0	10.9	13.6	13.6	84.7
Research	10.6	4.2	5.5	27.0	16.9	17.5	81.8
Production subsidies (variable inputs)	17.3	17.2	17.8	10.7	7.6	8.7	79.2
Admin	0.0	15.3	7.3	11.6	16.6	23.7	74.5
Irrigation	5.3	6.4	5.4	8.4	10.2	10.1	45.8
Technical assistance	2.3	2.6	2.4	3.9	7.0	6.9	25.0
Production subsidies (on-farm services)	0.0	1.7	1.3	1.9	5.8	3.4	14.1
Inspection	0.0	1.0	0.7	1.0	2.7	1.9	7.4
Food aid	0.0	0.0	0.2	1.0	0.2	0.4	1.8
On-budget expenditures	148.4	147.0	176.5	155.9	197.3	342.9	1,168.0
Production subsidies (AIP)	67.1	37.5	44.6	49.9	136.7	169.7	505.5
Admin	15.9	12.5	14.4	12.3	8.5	116.8	180.5
Food aid	22.0	24.5	69.0	10.8	11.2	1.2	138.6
Other general expenditures	2.9	41.3	11.5	9.2	12.8	3.0	80.7
Extension	9.8	7.4	10.6	13.3	15.1	13.1	69.3

	2016/ 17	2017/ 18	2018/ 19	2019/ 20	2020/ 21	2021/ 22	Grand Total
Irrigation	19.0	14.8	1.7	10.3	5.1	6.6	57.6
Cash transfers	0.0	0.5	14.8	14.1	2.9	2.3	34.6
Technical assistance (training)	0.5	0.2	0.6	9.3	0.2	18.7	29.5
Marketing	4.4	2.4	1.4	11.9	0.4	1.6	22.1
Research	2.3	3.5	3.8	3.1	3.5	3.7	19.8
Technical assistance	1.2	1.2	0.0	0.1	0.5	4.9	8.0
Storage	0.0	0.0	0.0	7.3	0.0	0.0	7.3
Feeder roads	0.0	0.3	4.0	0.0	0.0	0.0	4.3
Other agricultural infrastructure	0.2	0.0	0.0	3.6	0.0	0.5	4.3
Other production subsidies	3.0	0.0	0.0	0.0	0.0	0.0	3.0
Production subsidies (on-farm services)	0.2	0.1	0.0	0.1	0.3	0.2	1.0
School meals programs	0.0	0.0	0.0	0.1	0.0	0.7	1.0
Production subsidies (capital)	0.1	0.4	0.0	0.0	0.0	0.0	0.5
Inspection	0.0	0.1	0.1	0.2	0.0	0.0	0.4