

FS-TIP Brief Malawi

Food Systems Transformative Integrated Policy

Assessing Malawi's Agricultural and Food Policy using a Food Systems Approach: Commitments, Sustainability and Governance

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Malawi Agricultural and Food Policy Using a Food Systems Approach

1. Introduction

Malawi's agricultural sector consists of the subsistence sub-sector with maize dominating among the range of food crops grown, and the commercial sub-sector producing cash crops such as tea, sugar, tobacco, and coffee mostly for export. Agriculture is the primary driver of economic growth and development in Malawi. It is responsible for about 28% of the country's Gross Domestic Product (GDP) and over 80% of export earnings. Nearly 64% of the country's workforce is in agriculture, and the sector makes a substantial contribution to national food and nutrition security (Malawi Growth and Development Strategies III-MGDS III, 2017).

Unemployment in Malawi's economy has risen from 5.7% of the total population in 2005 to 22.5% in 2017. The GDP at current market prices was US\$7.6 billion in 2019, having grown from US\$6.4 billion in 2015 (World Development Indicators, 2020). According to the 2020 Agriculture Production Estimates Survey (APES) data from the Ministry of Agriculture, maize productivity or yield in 2019 averaged 1.84 MT/ha compared to a potential yield of 8 to 13 MT/ha. The APES data also shows that the productivity of legumes such as groundnuts, pigeon peas, soya beans, and groundnuts was lower than expected. The productivity of these legumes increased between 2005 and 2019, with average yields measured at 1.11 MT/ha for groundnuts (CG-7 variety), 1.22 MT/ha for pigeon peas, 0.94 MT/ha for soya beans, 0.54 MT/ha for beans, and 0.43 MT/ha for cowpeas. These yields are considerably lower than the potential yields of 2.5 MT/ha for groundnuts, 6 MT/ha for pigeon peas, and 4 MT/ha for soya beans (Ministry of Agriculture, 2020).

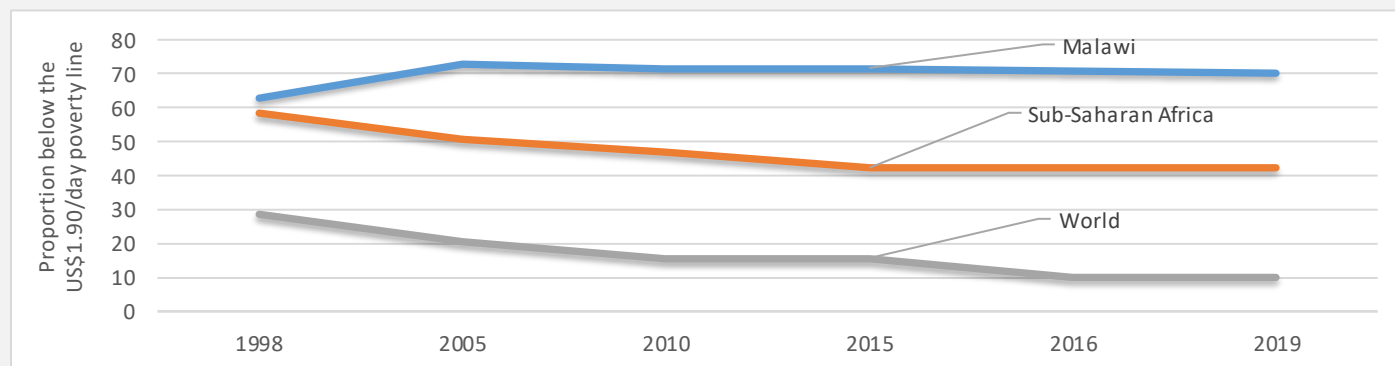
The low yields are caused by poor soil health conditions (e.g., low carbon, nitrogen, phosphorous, and potassium content), climate change, limited agricultural diversification, low irrigation development, small landholding sizes, land degradation, limited use of meteorological information, and underdeveloped market systems (Nyondo *et al.*, 2021).

Malawi was ranked 174 out of 186 countries in the UNDP's 2014 Human Development Index (HDI). The poverty headcount shows that since 2004-2005, 60-70% of the population has been living in poverty compared to a global rate of 10% and a Sub-Saharan average of 42% (World Bank Malawi Country Overview, 2021.; Nyondo *et al.*, 2021, Figure 1).

Key Findings

- Production of maize and legumes such as groundnuts, soya beans and pigeon peas is lower than expected.
- Over 50% of Malawi's population lives in poverty compared to a global rate of 10% and a Sub-Saharan average of 42%.
- In Malawi, 37% of the children are stunted, 3% are wasted and 13% are underweight. Nearly 63% of them suffer from multi-dimensional poverty.
- There is spatial variation in terms of vulnerability with cities showing lower levels than rural areas because of the higher per capita income in urban areas.
- Malawi loses 30% of its food in the form of food waste even as a significant proportion of its population is food insecure.
- The per capita greenhouse gas (GHG) emissions associated with food consumption is 194 kg CO₂ in Malawi compared to 5,732 kg CO₂ for South Africa, 2,780 kg CO₂ in Africa and 2,603 kg CO₂ worldwide.
- A healthy diet costs 180% of the average household food expenditure compared to 167% in Africa and 95% worldwide.
- The Malawi Growth and Development Strategies (MGDS) and Key Priority Areas (KPAs) are well-aligned to the Sustainable Development Goals (SDGs) and Agenda 2063.
- Malawi has met its Comprehensive Africa Agriculture Development Program (CAADP) target of 10% budget allocation to agriculture but agricultural growth has not consistently been above 6% over the last 10 years.
- Despite Food Systems (FS) featuring prominently in Malawi's development policies, there is less effort to fully implement all FS components. Policies have tended to emphasize food availability without equal effort being directed to support food affordability.
- To minimize food losses, the government and other stakeholders should emphasize road and storage infrastructure.
- Subsidies should be extended to enterprises that are profitable and are sources of nutritious foods such as livestock and legumes.

Figure 1: Prevalence of the population living below the international poverty line of US\$1.90/day across Malawi, Sub-Saharan Africa, and the World



Source: Nyondo et al. (2021) based on World Development Indicators

The Malawi Vulnerability Assessment Committee (MVAC) (2020) estimated that 10% of the country’s population (about 1.69 million people) faced acute food shortages between July and September 2020. A similar assessment was reported by UNICEF in 2018 indicating that 1.4 million people (9.5%) of the total population was at risk of severe food insecurity in 2013 with 21 out of 28 districts being affected. In 2020, the Food and Agriculture Organization (FAO) indicated that the presence of severe food insecurity in the total population rose from 51.7% in 2004-2006 to 51.8% in 2017-2019 while levels of the same in Africa rose from 17.2% to 18.6% and worldwide from 8.1% to 9.2%.

Furthermore, United States Agency for International Development (USAID) (2014) estimated that 50% of all children in Malawi suffer from chronic undernutrition (stunting) and micronutrient deficiencies, including Vitamin A and iron. A higher proportion of children in rural areas are stunted (48%) in comparison to children from urban areas (41%). However, levels of stunting were high in all regions with minimal regional variations: Southern (48%); Central (47%), and Northern (45%). Droughts, floods, low crop production and yields, as well as limited, diversified farming increases household food and nutritional insecurity in Malawi.

In 2020, UNICEF reported that 37% of the children were stunted, 3% were wasted, 13% were underweight and nearly 63% of children nationwide suffer from multidimensional poverty. From a spatial perspective, there are fundamental differences in stunting. Matchaya and Nhlengethwa (2021) found that the prevalence of stunting and consequent vulnerability to Covid-19 was higher in nine districts (Dedza, Neno, Mchinji, Zomba Rural, Ntcheu, Mangochi, Mzimba, Lilongwe Rural, and Ntchisi) and lower in six districts (Likoma, Blantyre City, Karonga, Zomba City, Lilongwe City, and Mzuzu City). In addition, eight districts (Mulanje, Machinga, Thyolo, Nsanje, Chikwawa, Chiradzulu, Chitipa, and Phalombe) had low food expenditures per capita and were therefore considerably vulnerable to Covid-19 in comparison to the cities of Blantyre, Zomba, Lilongwe, and Mzuzu, which had the lowest vulnerabilities to Covid-19. This is because cities normally have higher per capita incomes than rural areas.

Malawi made commitments to food security and nutrition in June 2013 by joining the New Alliance for Food Security and Nutrition, a partnership between African Heads of State, corporate leaders, and G-8 members to accelerate the implementation of CAADP (USAID Malawi Nutrition Profile, 2014). This brief uses a food systems approach to analyze the food and nutrition situation in Malawi. It focuses on the relevant policies and commitments made to highlight Malawi’s status as the country works towards the achievement of its national and international commitments. Drivers and constraints to progress are also identified and lessons learned are highlighted.

The rest of the brief is structured as follows. Section 2 analyses Malawi’s food system. Section 3 gives a review of the main agricultural and food strategies while Section 4 presents a mapping of the agricultural and food policy landscapes. The subsequent Sections 6 and 7 present key lessons, recommendations, and policy implications.

2. Analysis of Malawi's food systems

The United Nations Environmental Program (UNEP) (2016) defines a food system (FS) as “a complete set of people, institutions, activities, processes, and infrastructure involved in producing and consuming for a given population. This covers all stages of the value chain from growing and harvesting agricultural products for processing, packaging, transporting, selling, cooking, consuming and the disposal of waste food and packaging” (UNEP, 2016). The interactions in the FS give rise to food and nutrition security outcomes, socioeconomic outcomes e.g. inequalities, and environmental outcomes such as loss of habitat and biodiversity, and water, air and soil pollution. These outcomes are an important component of the FS approach because they represent consequences or results of the food system activities.

Food and nutrition security is the fundamental outcome of a food system that is strongly associated with agriculture and is generally considered the key outcome for transformation of the food system. However, environmental and socioeconomic outcomes go further than agricultural production systems (Van Berkum et al., 2018). Thus, to transform the FS in Malawi, there is a need to tackle the environmental and socioeconomic challenges as well. In addition, the FS should not only be about having enough food but it should also champion provision of diverse nutritious and healthy diets (IFPRI, 2018). This being the case, the FS needs to undergo a process of transformation to enhance its positive outcomes.

To strengthen the process of food systems transformation, it is crucial to apply an FS approach taking into account the complexity of existing interactions and feedback mechanisms (Niles et al., 2017; Bortoletti and Lomax 2019). Since the outcomes are a significant component of the FS, any attempt to improve the performance of the FS should begin with a candid assessment of the FS outcomes.

Generally, the FS approach takes into account the non-linear interactions and complex dynamics of the FS, using webs and networks to represent the FS. Viewing FS in this way means that farming systems or local FSs are subsystems within the overall FS (Eakin et al., 2017).

The Food Systems Transformative Integrated Policy (FS-TIP) is a long-term, intergenerational effort, supporting integrated, transformative policy development and implementation on an ongoing basis. It informs and complements related Food Systems initiatives such as the Food Systems Dialogues. FS-TIP builds upon existing review and monitoring frameworks such as the biennial review of the implementation of the Malabo Declaration and the Food Systems Dashboard while developing an interface that informs policymaking on an ongoing basis. It is implementation and outcome-focused while building upon a solid foundation of evidence-based research and data analytics.

The analysis of the Malawi food system is presented in Table 1 starting from input supply to consumer behavior.

Table 1: Malawi's food system components

FS component	Description
Input supply	<ul style="list-style-type: none"> About 79% of the maize fertilizer's retail price is subsidized. Maize seeds are also subsidized (Phiri, 2021). Additionally, the government provides support to irrigation, especially for rice production (Department of Irrigation, 2019). Recently, solar irrigation pumps have been subsidized and distributed in those areas with potential for irrigation. Almost 30% of fertilizer sales are on commercial terms (Mangisoni, 2021). The average yield return from fertilizer use is 16.8 kg/kgN for maize. Farm Inputs Subsidy Program (FISP) beneficiaries have underperformed against this national average. Both Chibwana <i>et al.</i> (2010) and Ricker-Gilbert and Jayne (2012) estimate average marginal returns of 9-12 kg/kgN among FISP beneficiaries, which is significantly below estimates typically found in the literature both for Malawi and for the region. Maize productivity was 1.4 MT/ha in 2020 compared to an average of 4.8 MT/ha for Southern Africa (FAOSTAT, 2020). This implies that subsidized inputs on their own are insufficient to increase the level and intensity of agricultural production. Given the country's topographic and climatic conditions, irrigation would normalize water access and usage throughout the year.
Food production systems	<ul style="list-style-type: none"> Nearly 21% of Malawi's surface area is covered by water and this contributes greatly to irrigated agriculture, aquaculture, as well as capture fisheries (USAID, n.d.). There are numerous and varied agricultural commodities produced in Malawi including: maize, cassava, potato, peas, beans, rice, groundnuts, bananas, tobacco, and sugar. However, crop production is focused on one main food crop - maize - and one main cash crop - tobacco. Maize is grown by almost every farmer in Malawi and accounts for about 50% of the country's entire planted area (Government of Malawi, 2018). Despite contributing between 28-30% of the GDP, providing employment to about 87% of total Malawi's workforce and contributing 9% to foreign exchange earnings (Government of Malawi, 2019), the average value added per agricultural worker during the 2005-2012 period was US\$209. This is far below the Sub-Saharan average of US\$680 (Government of Malawi, 2018). The value added per worker in agriculture/forestry/fishing has remained below \$800 since 1990 (World Bank World Development Indicators). The total land area under cultivation in Malawi is about 2.5 million hectares (Government of Malawi, 2019). Most cultivation is undertaken by smallholder farmers using very basic implements. According to the 4th Integrated Household

FS component Description

Survey (IHS4) of the National Statistical Office (2017), farms that are smaller than one acre comprise 45.8% of the cultivated area; those between 1 and 2 acres occupy 31.5%; and those that are two or more acres occupy 22.8% of the country's total planting area.

- Most smallholders do not irrigate at all. According to data from the Third Integrated Household Survey (2010/11), only 17% of agricultural households reported having access to irrigation (FAO, ILO, and UNICEF, 2019). This percentage has declined over time and according to the IHS4, 0.3% of the cultivated plots were irrigated in 2017. Irrigation potential for Malawi is estimated at 408,000 ha of which about a third (118,833 ha) has been developed. About 61,977 ha of this is under smallholder farmers while 56,856 ha is under agricultural estates (Malawi Department of Irrigation, 2019). With a total cultivated area of 2.5 million ha, only 4.75% of the cultivated area is under irrigation. This means that Malawi falls short of the Southern Africa Development Community (SADC) target of irrigating a minimum of 7% of the total cultivated area. Both the National Irrigation Policy (2016) and the National Agricultural Investment Plan (2018) target an increase in the irrigated area by 43,700 ha in the medium term. The total irrigated area has been growing steadily since 2006 with almost all of this growth occurring on smallholder irrigation schemes (Malawi Government, 2016).
- Whereas the average landholding size is approximately 0.9 ha, rainy season farming is undertaken on 0.507 ha and dry season cultivation is done on approximately 0.274 ha (MoAIWD and IFAD, 2020).
- Dry season/winter farming is done using residual moisture and/or watering can technology when it is practiced. It also covers a much smaller irrigation area.
- Using geospatial data, Mungai *et al.* (2020) estimate that Malawi's mean seasonal rainfall shows a declining trend by 13.8 mm per year over the last 10 year growing season period. Furthermore, 43% of all agricultural land, predominantly in the southern region, displays decreasing productivity trends.
- Estate farms account for only 0.4% of total farms but comprise 27% of total landholdings and 26% of total cultivated land (Anseeuw *et al.*, 2016). Seventy-three percent (73%) of agricultural estates fall within the 10-30 ha group and only 8% of the estates are larger than 50 ha (Deininger and Xia, 2017).

Storage and distribution

- Smallholder farmers use traditional structures for the storage of grains such as maize. Sometimes maize and other crops such as legumes are stored in bags.
- Since smallholders are often far from markets, they incur high transaction costs to bring their products to the markets.
- If the crops are sold at the farm gate, the smallholder farmers are often exploited by intermediaries such as vendors.

FS component Description

- Smallholder farmers experience storage losses of up to 50% depending on the crop. The losses are particularly high for vegetables and fruits. Grain losses are typically lower and are mostly due to rain and pests.
- Quantity losses for maize are estimated at 58% while quality losses are estimated at 22% during harvesting and subsequent farm operations. This is compared to an average of 13% for cereals in Sub-Saharan Africa (FAO, 2018; Rockefeller, 2013).
- Quantitative losses in groundnuts and soybeans can take up 5-12% of the total harvest (Ambler *et al.*, 2017).

Processing and packaging

- Most value chains are informal but there is cross-border trade particularly in grains such as maize and rice, with countries like Mozambique, Tanzania, and Zambia.
- Processing at the local village level is limited and done using traditional methods, except for maize which is processed at mills to produce maize flour. Most agricultural products such as fruits and vegetables are sold in unprocessed form.
- Maize, groundnuts and other crops in the industrial sector are processed to produce commodities that are sold in the country's retail chains.
- There is high wastage of perishables such as fruits and vegetables in local markets.
- Agro-processing accounted for 50.6% of manufacturing export in 2013 (JICA, 2013).

Retail and marketing

- The marketing system is mostly informal in both rural and urban areas. Formal retailing is mostly found in urban centers.
- Quality control of both inputs and foods is low leading to farmers sometimes getting adulterated inputs and consumers consuming unhealthy foods.
- Information on how much is sold via formal and informal channels is scanty. However, Jayne *et al.* (2010) estimated that nearly 92% of maize was sold through informal channels (vendors). This is also true for other crops such as legumes, fruits, and vegetables. Informal cross-border trade in maize accounted for 17.3% of the marketed quantity in 2010. The government (2020) noted that 80% of legumes are sold via informal channels (vendors) who supply large processors such as Rab Processors; 5% are sold directly to consumers and the rest (15%) are sold through producer associations. In the case of rice, 70% of the rice traded domestically is sold to vendors; 15% to local markets; 10% to producer-associations; and 5% directly to consumers.

FS component Description

Food availability

- The prevalence of severe food insecurity in the total population was 51.7% in 2014-16 and increased to 51.8% in the 2017-2019 period (FAO, 2020). This was mostly due to small landholding sizes, declining soil fertility, climate change, food prices and low incomes (Malawi Government 2020).
- The government subsidy program mostly focuses on maize production, leaving other crops e.g., sweet potatoes, and legumes unsupported.
- Maize losses reduce food availability on the farm where 86-100% of the production is retained for consumption.

Food affordability

- Only 18.3% of Malawi's population can afford healthy foods because of low incomes among the majority of the people.
- Under Action Track 2 (shift to sustainable consumption patterns), a healthy diet costs 180% of the average household food expenditure (Schneider *et al.*, 2020) compared to 167% for Africa and 95% worldwide.
- The policies emphasize food availability (production) with little focus on economic access or affordability (Makhara *et al.*, 2019).

Food messaging

- Capacity constraints affect the ability of the Malawi Bureau of Standards (MBS) to carry out thorough quality control of foods and inputs. The Ministry of Agriculture has now developed the National Fertilizer Policy which will see MBS working collaboratively with the National Fertilizer Regulatory Commission to review and enforce fertilizer standards and regulations.
- Currently, the MBS assures the general public that the products found on the market are fit for use by conducting verification activities (inspection, sampling, testing, certification). Market surveillance activities are also carried out and these focus on the quality of the products on the market with action being taken in those instances of non-compliance.

Consumer characteristics

- Most Malawians have a strong preference for refined maize flour over any other cereal product. Food choices in Malawi are determined by health, convenience, sensory appeal, mood, and familiarity (Gama, *et al.*, 2018).
- Dzanja *et al.* (2016) noted that as per capita expenditure increases, the number of food items consumed by households also increases, suggesting that there is a more diversified diet for richer households in urban areas compared to rural areas. The difference is more pronounced for more expensive foods such as rice, onions, eggs, fruits, nuts, beef, chicken, dairy products, cooking oil, fish, and food consumed away from home. For poor groups, Dzanja *et al.* (2016) found that maize accounted for 47% of the total food budget compared to 26% for the richest households. This pattern was attributed to the much higher average incomes in urban areas which is about US\$3.10 per person per day compared to US\$1.15 per person per day in the rural areas. Young people tend to prefer more processed foods such as spaghetti, soft drinks, and burgers in

FS component	Description
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comparison to older sections of the population. Income elasticity of demand was above 2.0 for dairy, eggs and meats in rural areas compared to just above 1.0 in urban areas (Dzanja *et al.* 2016).

Consumer behavior	<ul style="list-style-type: none"> • Because of liquidity constraints, consumers in Malawi use their current income to purchase foods (Mwabutwa <i>et al.</i>, 2012). • There is increasing demand for processed products as well as pre-prepared and fast foods, especially in urban areas. Munthali <i>et al.</i> (2021) estimate that the importation of processed foods in Malawi as a proportion of all food imports, averaged 43% between 2010 and 2018 rising from 35% in 2016 to 64% in 2018.
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Table 2 and subsequent figures present mapping of indicators, policies and stakeholders. The focus is on supra-indicators under Action Track 2 and Governance. Different Policy Briefs will focus on the other Action Tracks.

The first, second, and third rows of Table 2 cover indicator, policy and stakeholder mapping. In the row for indicator mapping, the focus is on food environment (FE), affordability (A), governance (G), food waste (W), and sustainability (S) for each of the food system (FS) components. An arrow from an indicator to an FS component shows that the indicator is relevant for that component. The first row, therefore, shows that all the indicators are relevant for the FS components.

The second row in Table 2 presents key policies for each of the FS components. The key policies are the Environmental Policy (EP), the National Fertilizer Policy (NFP), the National Agricultural Policy (NAP), the Trade Policy (TP), the Health Policy (HP), the Multi-sector Nutrition Policy (NP) and the Malawi Growth and Development Strategies III (MGDSIII). In addition, Figure 2 presents a policy mapping showing how Malawi 2063 is translated into medium-term development plans or strategies and in turn how the medium-term plans are linked to district plans as well as the plans from development partners and non-state actors. At the lower level, these plans are translated into medium-term expenditure frameworks, public sector investment plans, annual plans, and budgets.

The third row of Table 2 presents stakeholder mapping for each of the FS components. A detailed presentation of the stakeholder mapping is found in the Annex. The following is a summary of each mapping.

Table 2: Mapping of indicators, policy, and stakeholders

	Input supply (IS)	Storage and distribution (SD)	Processing and packaging (PP)	Retail and marketing (RM)	Food safety (FT)	Governance (GV)
Indicator mapping	<p>FE= Food Environment A= Affordability G=Governance W=Food waste S=Sustainability</p>					
Policy mapping	<p>EP=Env. Policy FP=National Fertilizer Policy NA=National Agricultural Policy TP=Trade Policy HP=Health Policy NP=Nutrition Policy MGDS= MGDSIII</p>					
Stakeholder mapping	See Figure 3	See Figure 4	See Figure 5	See Figure 6	See Figure 7	See Figure 8

Figure 2: Policy mapping for governance

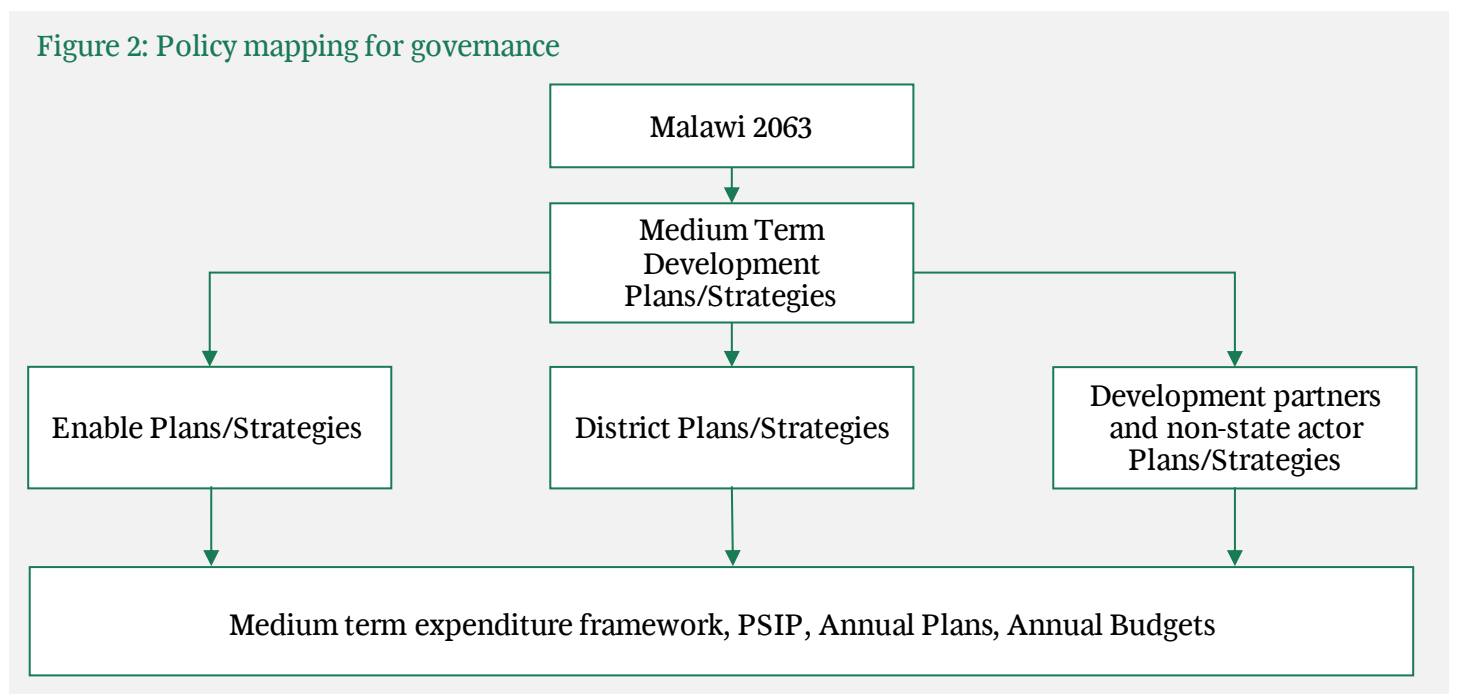


Figure 3 presents stakeholder mapping for input supplies. The key stakeholders are foreign suppliers who supply inputs such as fertilizers, seeds, pesticides/chemicals and animal feeds to importers and domestic producers. The domestic producers/importers in turn provide inputs to wholesalers, both private and parastatal organizations, such as the Agricultural Development and Marketing Corporation (ADMARC) and the Smallholder Farmers Fertilizer Revolving Fund of Malawi (SFFRFM). The wholesalers supply to retailers, agricultural estates, smallholder farmers, and agro-dealers. Besides supplying directly to estates and smallholder farmers, retailers sometimes provide supplies to agro-dealers.

Important support institutions in input supplies include public, private, international and civil society/NGOs. At the import level, key public sector institutions include the Ministry of Agriculture, the Ministry of Finance, the Reserve Bank of Malawi, and the Malawi Bureau of Standards (MBS). The MBS is key for quality control. Private sector institutions include transporters and banks such as the National Bank of Malawi and the Standard Bank of Malawi. The banks provide loans and other financial services to importers while transporters are key in the movement and distribution of goods. The Consortium of International Agricultural Research (CGIAR) centers and donors sometimes provide support at the import level.

At the wholesale and agro-dealer levels, the key public institutions are the Ministry of Agriculture, the Ministry of Trade, and the MBS. Civil society organizations and NGOs such as the Consumer Association of Malawi and Rural Market Development Trust (RUMACK) also provide support at these levels. Other relevant institutions at this level are banks, the National Smallholder Farmers' Association of Malawi (NASFAM), and transporters. At the estate/smallholder level, the main institutions are the Ministry of Agriculture and private lending institutions, and the CGIAR centers.

Figure 3: Stakeholder mapping for input supply

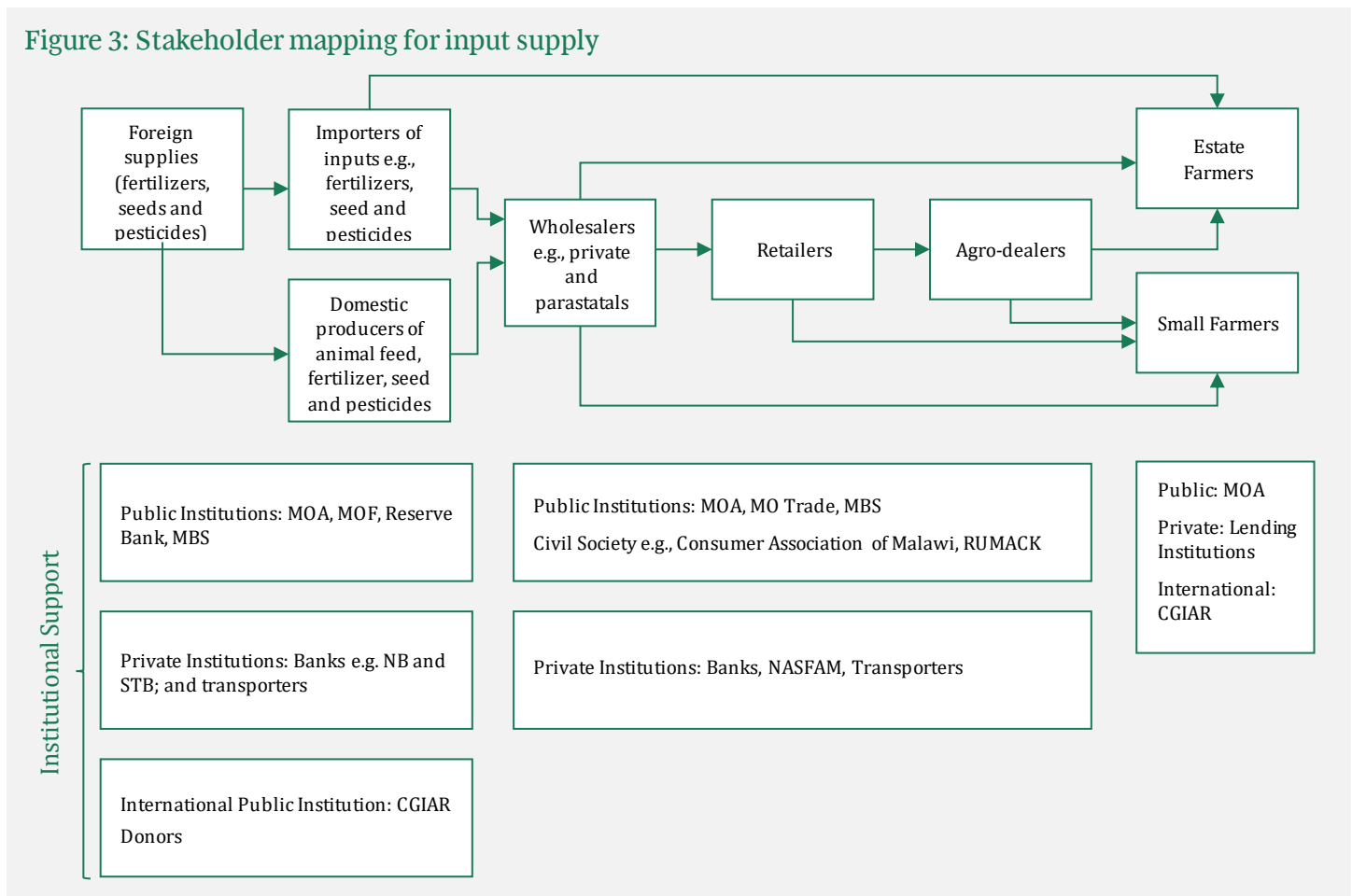


Figure 4 presents the stakeholder mapping for storage and distribution. Storage and distribution applies to both inputs and output. The key stakeholders are importers, seed multipliers, and farmers. Each stakeholder may be involved in storage and distribution to varying degrees. These stakeholders sell to manufacturers/processors or wholesalers, retailers, and final consumers. Sometimes, farmers sell to informal traders who in turn sell to consumers. The key support institutions at the import/seed multiplication level are public bodies such as the Ministry of Agriculture, the Ministry of Trade, MBS, and the Reserve Bank of Malawi; private organizations including banks, transporters and warehouse owners; research and development partners such as CGIAR centers and other donors.

The support institutions, from the wholesale to consumer levels are public sector bodies including the Ministry of Trade and MBS; private sector actors such as banks and warehouse owners; civil society organizations including the Consumer Association of Malawi (CAMA) and Non-Governmental Organizations (NGOs); and donors.

Figure 4: Mapping of stakeholders for storage and distribution

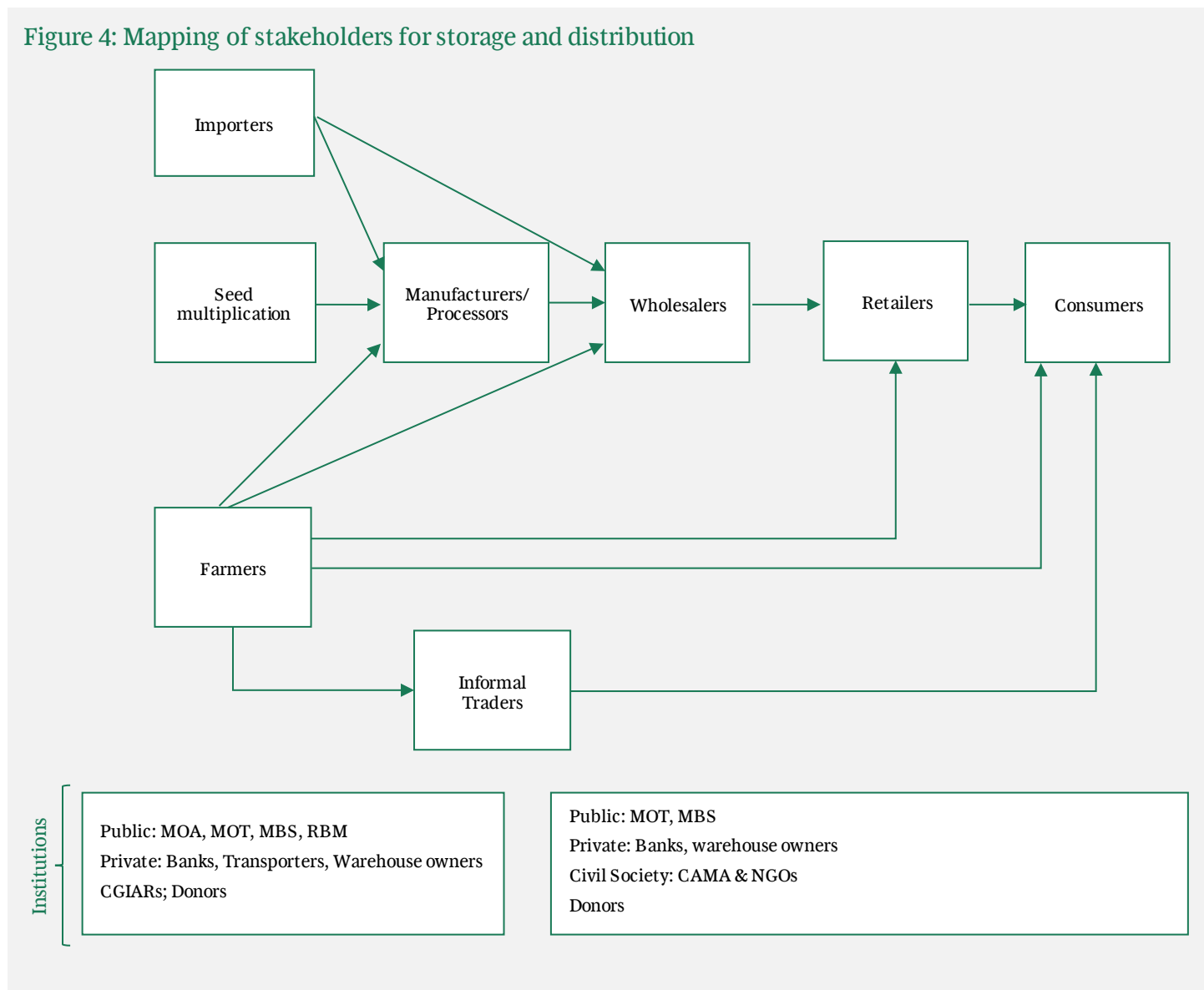


Figure 5 covers the processing and packaging level. There are two types of processors, namely, primary and secondary processors. Primary processing can be carried out on-farm by farmers, abattoirs, and millers while secondary processing involves freezing, drying or canning. These processors also carry out packaging and obtain supplies locally or from importers. The processed products are then sold to wholesalers, retailers, and consumers, some of whom may also carry out similar processing and packaging activities. The support institutions are similar to those in Figure 4.

Figure 6 examines the retail and marketing level. Retail and marketing of most products starts at the farm, whether small-scale or large-scale. Farmers may sell to informal markets with some products e.g., vegetables and fruits being sold later in a wet market and to consumers. Other channels involve farmers selling to associations such as NASFAM or large aggregators such as ADMARC, Farmers World, Agora, and Export Trading. The aggregators sell to wholesalers, processors, supermarkets, and consumers. The support institutions are similar to the ones in Figure 5.

Figure 5: Stakeholder mapping for processing and packaging

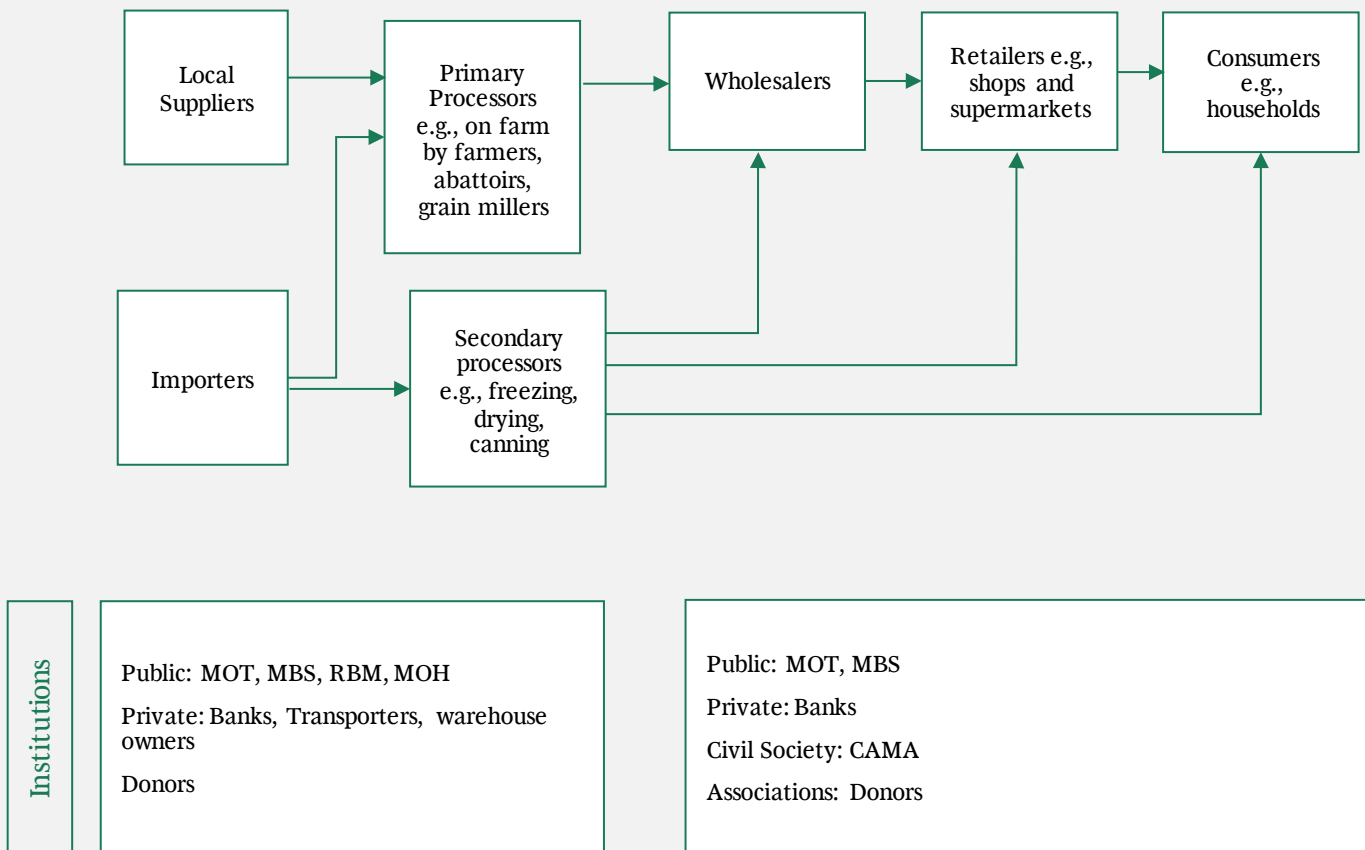


Figure 6: Mapping of stakeholders for retail and marketing

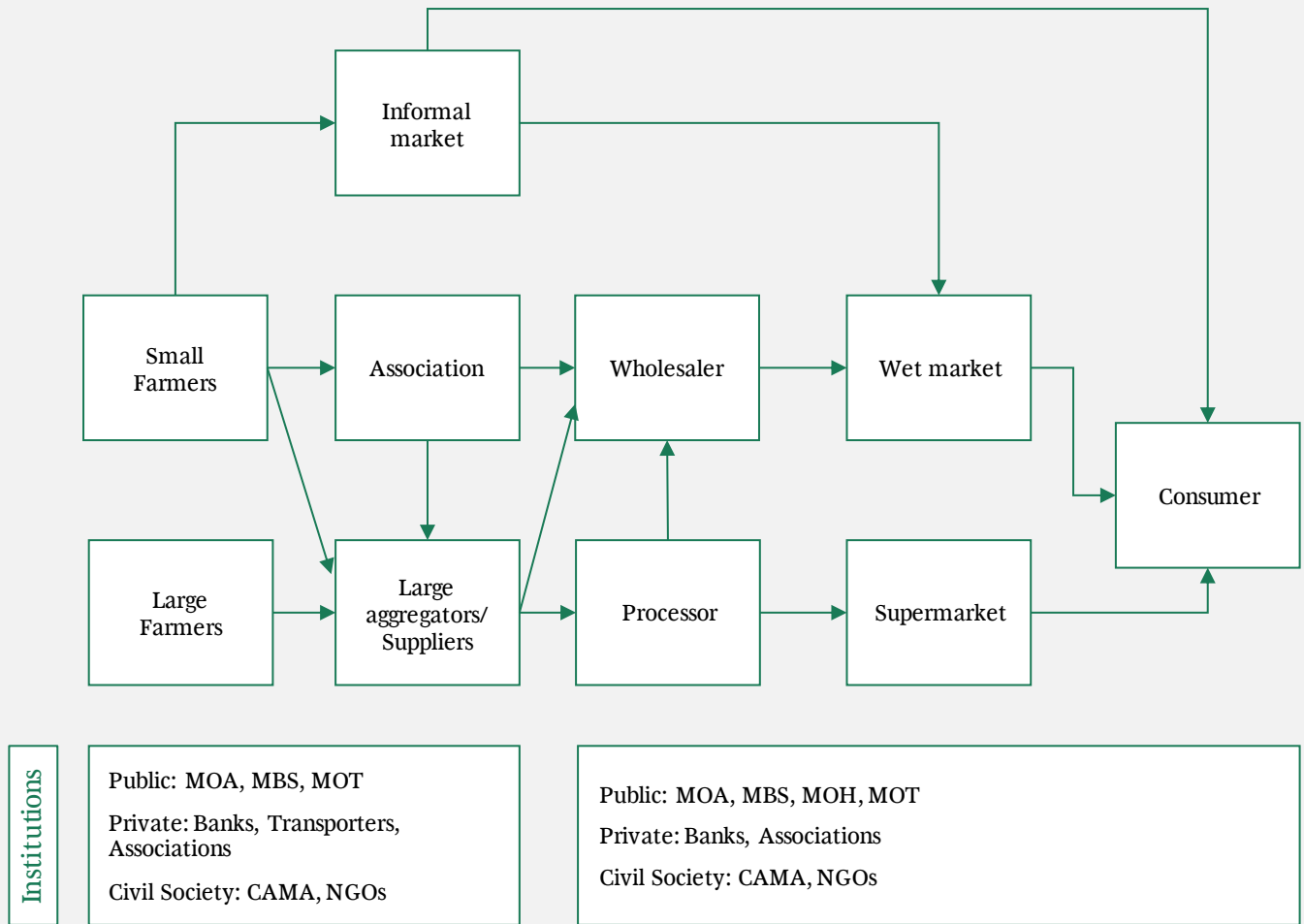


Figure 7 is on food safety. The key institution is the MBS. The MBS works collaboratively with stakeholders such as the Ministry of Agriculture, NGOs/donors, CGIAR centers such as the International Institute of Tropical Agriculture (IITA), the Ministry of Health, the Ministry of Industry, civil society actors such as CAMA, the Ministry of Environment, and the Ministry of Local Government on matters of food and public safety.

Stakeholder mapping for governance is captured in Figure 8. The Malawi governance structure portrays a two-way communication process between the top, and state and non-state actors at the council level. Courts/tribunals, and the Anti-Corruption Bureau (ACB) are key at all levels of the governance structure.

Figure 7: Mapping of stakeholders for food safety

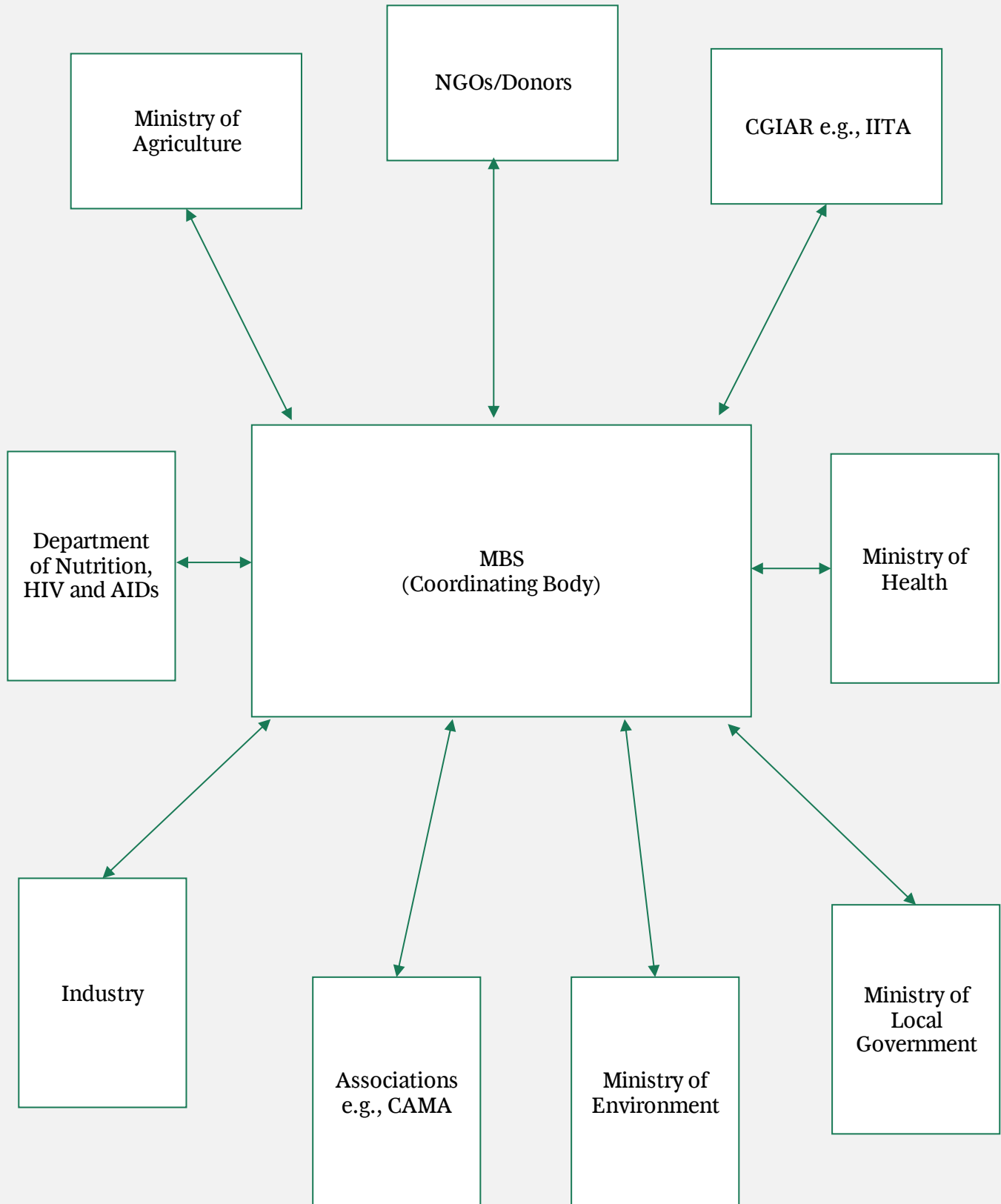
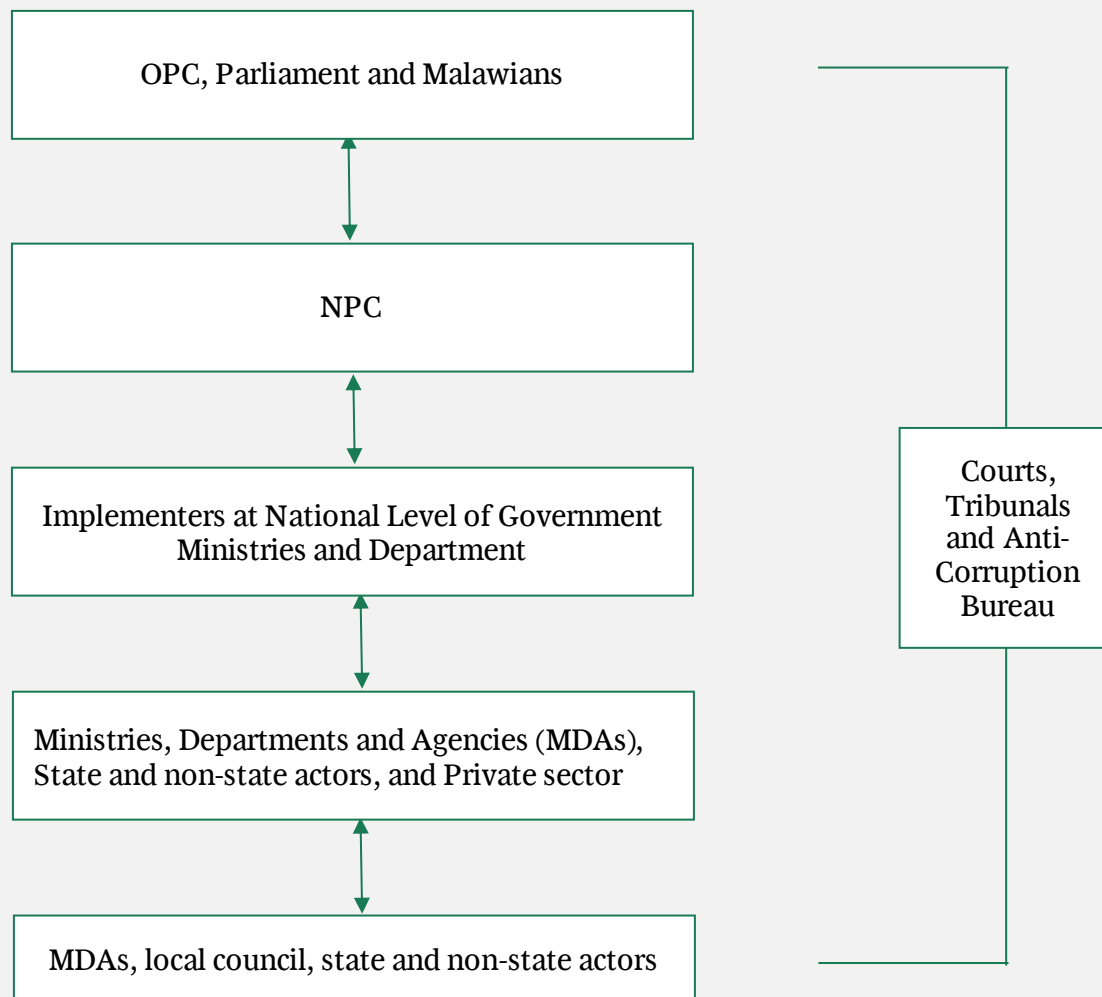


Figure 8: Mapping of stakeholders for governance (Adapted from NPC 2021)



2.1 Performance of policies and Action Track 2 indicators

Makhura et al. (2019) reviewed a total of 65 policy documents on food security and/or nutrition, agricultural policies and/or investment plans as well as other policies from relevant sectors such as environment, health, social development, energy, water, sanitation and hygiene, gender, education as well as macroeconomic (fiscal and monetary) and financial policies. The aim was to map and analyze policies that influence food systems. Descriptive analysis was used to summarize the key findings from the mapping process. Because the policies and the food system components are not mutually exclusive, they counted the number of policies among the 65 policies that concentrated on a particular component, for instance, the production systems. This number of policies touching on a particular component was then expressed as a percentage of the 65 policies. In other words, individual food system components were expressed in terms of percentages.

Based on this analysis, Makhura et al. (2019) showed that, in Malawi, 86% of the policies on food systems concentrate on production systems; 55% on processing and packaging; 48% on markets; 45% on input supply, and 25% on storage and distribution. In terms of drivers of food systems transformation, 59% of the policies focus on innovation, technology, and infrastructure and 56% on financial inclusion, systems development, and resource mobilization. For consumer behavior, most of the policies are directed towards strengthening consumer awareness, education, knowledge, and skills in food systems (59%) and dietary diversity (55%). The weakest policy linkage is with the food environment (28%). However, 89% of the policies linked to the food

environment emphasized standards, safety, quality control, and sanitary measures; 39% focused on advertising and information; and 22% on availability and proximity. Economic access or affordability in the food environment receives the lowest attention (11%) in policies (Makhura et al., 2019).

According to the FAO (2020), the prevalence of undernourishment among Malawi’s total population fell from 22.5% in 2004-2006 to 18.8% in 2017-2019. This is in comparison to a drop from 21.4% to 18.8% for Africa and 12.5% to 8.8% worldwide. This indicator for Malawi compares favorably with that for Africa but it is still higher than the worldwide level. The presence of severe food insecurity in the total population rose from 51.7% in 2004-2006 to 51.8% in 2017-2019 while in Africa, this rose from 17.2% to 18.6% and worldwide from 8.1% to 9.2%. Although Malawi experienced a small increase, the presence of severe food insecurity is much higher than that in Africa and the World. It is clear that the country is not on track to eliminate hunger by 2030.

Focusing on Action Track 2 (shift to sustainable consumption patterns), there is evidence that Malawi loses 30% of its food in the form of food waste yet large numbers of people are food insecure (WFP, 2019). This level of food losses is much higher than the world average of 14% of food losses which occur after harvest and before reaching the retail level through on-farm activities, storage, and transportation. The Food Waste Index for Malawi is 103 kg per capita per year compared to 74 kg per capita per year for the world. Food losses are mostly higher for fruits and vegetables at all stages of the food supply chain. In Malawi as in other low-income countries, most fruit and vegetable losses are attributed to poor infrastructure (both storage and transportation) as well as poor, unstructured, and at times missing markets in comparison to developed countries. According to the Rockefeller Foundation (2013), food wastage in Sub-Saharan Africa was 36% for fruits and vegetables, 37% for roots and tubers, 13% for cereals, 6% for milk and dairy, 5% for meat and fish, and 4% for oilseeds and pulses in 2013.

The per capita greenhouse gas (GHG) emissions linked to food consumption is 194 kg CO₂ in Malawi compared to 5,732 kg CO₂ for South Africa, 2,780 kg CO₂ in Africa, and 2,603 kg CO₂ worldwide. This can be attributed to the fact that Malawi is less industrialized than South Africa and the rest of Africa (Our World in Data, 2021).

3. Review of principal agricultural and food strategies

The main agricultural and food strategies in Malawi are contained in the Malawi Growth and Development Strategies (MGDS III). These strategies were developed and linked to the Sustainable Development Goals (SDGs) and Agenda 2063 as shown in Table 3. The table presents MGDS III Key Priority Areas (KPAs) and shows their linkages to the SDGs and Agenda 2063 goals. Implementation of the KPAs will help Malawi make progress in terms of the SDGs and Agenda 2063.

Table 3. Mapping of MGDS III Key Priority Areas to SDGs and Agenda 2063

MGDS KPAs	SDGs	Agenda 2063
Agriculture and climate change	<ul style="list-style-type: none"> • End poverty in all its forms everywhere. • End hunger, achieve food security and improve nutrition, and promote sustainable agriculture. • Ensure healthy lives and promote well-being for all ages. • Take urgent action to combat climate change and its impacts. 	<ul style="list-style-type: none"> • A prosperous Africa based on inclusive growth and sustainable development. • The relevant priority areas such as modern agriculture for increased productivity and the SDGs match Agenda 2063.

- Ensure availability and sustainable management of water and sanitation.
- Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and biodiversity loss.

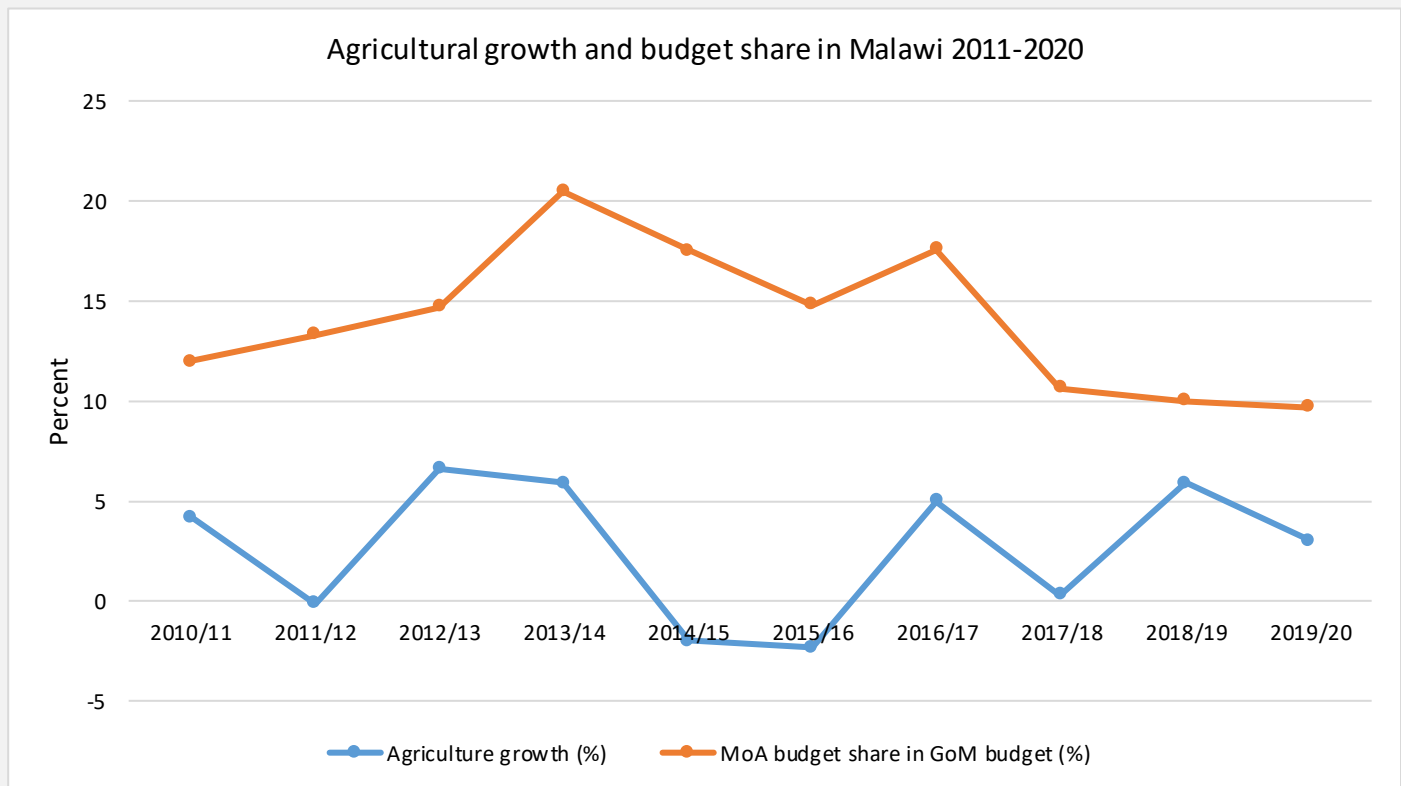
Health and population management

- End poverty in all its forms everywhere.
- End hunger, achieve food security and improve nutrition, and promote sustainable agriculture.
- Ensure healthy lives and promote well-being for all ages.
- Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all.
- A prosperous Africa based on inclusive growth and sustainable development.
- An Africa where development is people-driven, unleashing the potential of its women and youth.

Source: MDGS III, 2018

The vision of Malawi's government is to implement international development frameworks, protocols, and treaties through national plans. To address food insecurity and spur agricultural-led growth, the government developed the Malawi Nutrition Policy and Strategic Plan which is closely linked to the CAADP plan and the Agricultural Sector-wide Approach to coordinate food security programming at the national and community levels. In recent years, Malawi has met its CAADP targets for budgeting allocations to agriculture and agricultural sector growth rates, committing at least 10% of its budget to agriculture and exceeding the targeted annual agricultural growth rate of 6% in some years (Figure 9). In 2021, Malawi committed 11% of its total budget to agriculture and was therefore in line with the 10% budget allocation agreed on in the 2003 Maputo declaration on agriculture and food security (JICA Sector Position Paper, 2021).

Figure 9: Progress towards agricultural growth and budget allocation to agriculture in Malawi



Source: Own calculations based on World Bank World Development Indicators

In 2018, the government reviewed its National Nutrition Policy and developed the National Multi-Sector Nutrition Policy covering the period 2018-2022. This is a multi-sectoral document that focuses on both nutrition-specific and nutrition-sensitive interventions. The policy is being implemented in line with the National Development Strategy, which identifies nutrition as one of the priority areas under the social development thematic area. The policy is well aligned with the Scaling Up Nutrition (SUN) movement, global declarations, and commitments such as the SDGs and the World Health Assembly targets. It is also linked to the National Agriculture Policy; National Education Policy; National Health Policy; National Gender Policy and Decentralization Policy to ensure effective and efficient delivery (Department of Nutrition, HIV and AIDS, 2018).

Malawi has attempted to end hunger, achieve food security, and improve nutrition through the implementation of a subsidy program, initially called Farm Inputs Subsidy Program (FISP) and now dubbed the Affordable Inputs Program (AIP). In the FISP, smallholder farmers received subsidized inputs such as fertilizers and seeds for maize and legumes. There is no provision of subsidized legume seeds under AIP.

Although there were some gains in maize productivity through the subsidy program, the gap between actual smallholder yields and potential yields is wide. Potential yields are estimated to lie in the region of 8-13 MT/ha for maize. The APES data also shows that the productivity of legumes such as pigeon peas, soybeans, and groundnuts (CG-7 variety) rose between 2005 and 2019. However, the average yields were 1.11 MT/ha for groundnuts; 1.22 MT/ha for pigeon peas, and 0.94 MT/ha for soya beans, which are lower than projected potential yields of 2.5 MT/ha for groundnuts, 6 MT/ha for pigeon peas, and 4 MT/ha for soya beans. These gaps reveal that yield enhancement requires the application of fertilizer together with other integrated soil fertility management practices (Nyondo et al., 2021).

The low yields are the result of poor soil health (low organic matter, phosphorous, and potassium) and land degradation. Landholdings are very small, with over 80% falling below one hectare and still continuing to fragment further due to population growth, land degradation, and conversion of farmland to housing and other uses (Mangisoni et al., 2020). Currently, 41% of the total land in Malawi is classified as a land degradation hotspot (Kirui, 2018).

Smallholder farmers in Malawi are vulnerable to agro-climatic conditions that reduce productivity and have negative effects on their weather-dependent livelihoods. Climatic conditions such as droughts and prolonged dry spells reduce soil moisture available to crops thereby affecting the growth and yield of the crops. The loss of soil moisture due to droughts and dry spells is exacerbated by the continuous cropping and tillage practices of the farmers.

Soil and water conservation (SWC) practices are recommended to reduce soil degradation and erosion induced by agricultural practices, typically traditional, which disturb soil quality (organic matter or nutrient content) and reduce farm yields and profitability. Tillage is a major feature of smallholder farming systems that induces soil erosion and is linked to declining long-term productivity of the soil (Regasa, 2019; Lal, 1998). Despite the benefits of SWC, less than 15% of farmers in Malawi apply these techniques on their fields.

In addition, extension workers in Malawi have described smallholder adoption of soil and water conservation practices as “lukewarm” at best (Ragasa, 2019; Banda, Khumbanyiwa, and Kapida, 1990). While extension efforts regarding agroforestry are relatively new, smallholder adoption of box ridging and other measures to combat soil erosion is disappointingly low. This is despite efforts for more than 50 years by the Department of Land Resources Conservation in Malawi to persuade farmers, through extension, to adopt such practices (Ragasa, 2019; Mangisoni, 2009).

Unemployment has risen from 5.66% in 2005 to 22.5% in 2017. At the same time, the poverty headcount at US\$5.50 a day rose from 96.1% in 2010 to 96.6% in 2016. Using the US\$1 per day measure, the poverty headcount decreased slightly by 2% from 2004-2005 and is about 50.7% (World Bank Malawi Country Overview, 2021). The UNDP ranked Malawi 174 out of 186 on the Human Development Index (HDI) in 2014. According to the Integrated Food Security Report (March 2019 to November 2020), nearly 1.9 million people (10% of the total population) in Malawi were food insecure in the lean season period that ran from November 2019 to March 2020. Factors contributing to deteriorating food security in Malawi include high inflation, low crop production, low market availability of maize, and low income. UNICEF (2018) noted that in 2013, approximately 1.4 million (9.5% of the total population) were at risk of severe food insecurity, with 21 out of the 28 districts affected.

According to the World Bank (2020), annual agricultural growth averaged 4.0% from 1970 to 2017 and 2.3% from 2012 to 2017, which is below the CAADP target of 6% (see also Figure 2). The value-added for agriculture fell from US\$502.3 million in 1970 to US\$2.4 million in 2017. Agriculture’s contribution to GDP was 48.4% in 1960, 41.0% in 1970 and 26.1% in 2017. GDP per capita in constant 2010 US\$ grew by 1.5% per annum on average and was the lowest in the SADC region (World Bank 2020).

4. Mapping agricultural and food policy using a food systems approach

Table A.1 in the Annex uses five key policies to assess each food system component in terms of existence of the policy, quality of the policy and the possibility of its realization in terms of resource availability (human and financial). The table shows that there are variations among the policies in terms of quality and potential for realization.

5. Key lessons

- Despite food systems (FS) featuring prominently in the development policies of Malawi, insufficient efforts are directed towards fully implementing all FS components. Policies have tended to emphasize food availability (production) without directing equal effort towards supporting other FS components.
- The alignment of national policies and strategies to international protocols, declarations, and visions is important for the achievement of national targets. This enhances the country's capacity to mobilize resources from development partners.
- The subsidy program does not provide guarantees for the availability and affordability of food to ensure dietary diversity. The existing AIP subsidy program primarily focuses on maize with less emphasis on legumes and livestock production on smallholder farms. Given the small plots and the high levels of land degradation, it is doubtful that Malawi can be assured of production and dietary diversity under these circumstances.
- Informal markets have no standards for quality and safety leading to the consumption of unhealthy foods.
- Food waste especially for fruits and vegetables is high in Malawi and other Sub-Saharan countries. At the same time, the production and productivity of most crops are low.
- There is low processing of agricultural products in Malawi. Better and structured markets would promote the growth of agro-processing and the development of efficient and inclusive agricultural value chains that ensure competitive and fair pricing of agricultural products.

6. Recommendations and policy implications

- The Government and other stakeholders e.g., those in the private sector should find ways to develop necessary infrastructure that would help minimize food waste in the country as a means of promoting food security. This can be done by providing good roads as well as developing marketing and storage facilities as losses are generally associated with poor roads, marketing and storage infrastructure.
- Government policies should place equal emphasis on food affordability or access as it does on food availability. This is important because food may be available but it may not be affordable to the majority of the people leading to nutritional deficiencies. This requires strengthening food markets so that they are deeper and more efficient thereby improving food security in Malawi.
- Government policies should focus less on self-sufficiency at household and national levels and move toward a market-oriented and specialized agricultural sector that can meet the healthy food needs of the population in the non-agricultural sector. This means that it is necessary to support commercially-oriented farmers who can be the engine for rural transformation. Households that are not economically productive should be receiving direct support from the government through social protection programs.
- Government interventions need to be predictable and policies should support integration of traders into the regional markets. Integration into regional and international markets would raise local standards for quality and safety of foods as well as improve farmer incomes.

- The government and other stakeholders such as the Fertilizer Association of Malawi and NGOs should address soil health problems through integrated soil fertility management. The high rates of land degradation will undermine the input subsidy program as well as the affordability and availability of healthy foods.
- The government through the Ministry of Trade and other stakeholders such as the private sector and the Malawi Chamber of Commerce and Industry should promote regional and global exports of value-added agricultural products to enhance farm incomes.
- Subsidies should be extended to enterprises that are profitable and which are sources of nutritious foods such as livestock and legumes.

7. References

- Ambler, K., de Brauw, A., and Godlenton, S. (2017) Measuring postharvest losses at the farm level in Malawi. *Australian Journal of Agricultural and Resource Economics* 62(1) DOI:10.1111/1467-8489.12237.
- Anseeuw, W., Jayne, T., Kachule, R., and Kotsopoulos, J. (2016). The quiet rise of medium-scale farms in Malawi. *Land* 2016,5,19; doi:10.3390/land5030019.
- Banda, J.L.L., Khumbanyiwa, A.G., and Kapida, G.D. (1990). Agroforestry in Kasungu Agricultural Development Division. In A.R. Saka, W.T. Bunderson, and J.A. Maghembe (eds.). *Agroforestry Research and Development in Malawi*. Bvumbwe, Malawi.
- Bortoletti, M., and Lomax, J. (2019). Collaborative framework for food systems transformation: A multi-stakeholder pathway for sustainable food systems. UNEP.
- Chibwana, C., Fisher, M., and Shively, G. (2012). Cropland allocation effects of agricultural input subsidies in Malawi. *World Development* 40(1): 124-133.
- Deininger, K and Xia, F. (2017). Assessing effects of large-scale land transfers: Challenges and opportunities in Malawi's estate sector: Policy Research Working Paper No. 8200. World Bank, Washington, DC, <http://bit.ly/2xi90GI>.
- Department of Irrigation. (2019). 2018/19 Annual Progress Report. Lilongwe: Department of Irrigation.
- Department of Nutrition, HIV, and AIDS (2018). The National Multi-Sector Nutrition Policy 2018-2022. Lilongwe: Department of Nutrition, HIV, and AIDS.
- Dzanja, J., Matita, M., Kankwamba, H., Dolislager, M., and Tsschirley, D. (2016). Mapping market prospects for grain legumes in Malawi. Global Center for Food Systems Innovations (GCFSI) Publication Series. Malawi Report No. 005. East Lansing: Michigan State University.
- Eakin, H., Connors, J.P., Wharton, C., Bertmann, F., Xiong, A., and Stoltzfus, J. (2017). Identifying attributes of food system sustainability: Emerging themes and consensus. *Agriculture and Human Values* 34: 757-773. Doi:10.1007/s10460-016-9754-8.
- Elwell, H.A. and Rook, J.M. (1996). Soil and water conservation technology in four selected countries of southern Africa (Malawi, Mozambique, Zambia, and Zimbabwe). Volume I: Main Report. World Bank: Agriculture and Environment Division Southern Africa.
- FAO (2020). The State of Food Security and Nutrition in the World 2020. Rome: FAO.
- FAO (2021). FAOSTAT. Rome: FAO.
- <https://www.yonecofm.com/index.php/2019/10/17/wfp>.
- FAO, ILO, and UNICEF (2019). Local economy impacts and cost-benefit analysis of social protection and agricultural interventions in Malawi, <http://www.fao.org/3/ca4312en/ca4312en.pdf>.
- FAO (2018). The benefits and risks of solar-powered irrigation: a global overview. <http://www.fao.org/3/9047en/19047en.pdf>.
- Global Nutrition Report (2020). Malawi Nutrition Profile. <https://globalnutritionreport.org/resources/nutrition-profiles/africa/eastern-africa/malawi/>
- International Food Policy Research Institute. (2018). 2018 Global Food Policy Report. Washington, DC: International Food Policy Research Institute. <https://doi.org/10.2499/9780896292970>.
- Jayne T.S, Nicholas Sitko, N., Ricker-Gilbert, J., and Mangisoni, J. (2010). Malawi's maize marketing system. Lilongwe, Ministry of Agriculture and Food Security.

JICA (2021). JICA Sector Position Paper. Lilongwe: JICA.

JICA (2013). Data collection survey for potential industries in Malawi: Summary Final Report. JICA: Lilongwe.

Kirui, O. (2018). Economics of land degradation and improvement in Tanzania and Malawi. In *Evaluating Global Land Degradation Using Ground-Based Measurements and Remote Sensing*.

Makhura, M., Adegbite, O., Mkandawire, E., Olivier, N., Nankhuni, F., Nyondo, C., and Hendriks, S. (2019). Mapping policy responses in food systems transformation in Malawi. Feed the Future Innovation Lab for Food Security Policy. Policy Research Brief 77.

Malawi Government. (2020). Agriculture Commercialization Project. Lilongwe: Ministry of Agriculture.

Malawi Government (2019). Malawi 2019 Floods, Post-disaster Needs Assessment Report. Lilongwe, Malawi Government.

Malawi Government (2017). The Malawi Growth and Development Strategy III (MGDSIII). Lilongwe: Malawi Government.

Mangisoni, J.H. (2021). Structure, conduct, and performance of the fertilizer market in Malawi. Final Report submitted to the Department of Planning Services, Ministry of Agriculture, Lilongwe.

Mangisoni, J.H. (2009). Farm-level economics of soil conservation practices in the Zomba Rural Development Project of Malawi. Addis Ababa: Organization for Social Science Research in Eastern and Southern Africa (OSSREA).

Mangisoni, J.H., Jayne, T.S., and Chigowo, M. (2020). Effects of nitrogen and carbon application on maize output in Ntcheu and Dedza Districts of Central Malawi. *Journal of Economics and Sustainable Development* 11(2), 2020. (ISSN 2222-2855 (Online)).

Matchaya, G., and Nhlengethwa, S. (2021). Assessing spatial vulnerability to Covid-19 in Malawi. Covid-19 Bulletin No. 19, April, Kigali, Akademiya2063.

Ministry of Agriculture (2021). National Fertilizer Policy. Department of Agricultural Research Services, Lilongwe.

Ministry of Agriculture, Irrigation and Water Development (2016). National Agriculture Policy 2016. Lilongwe: Ministry of Agriculture, Irrigation and Water Development.

Ministry of Agriculture, Irrigation and Water Development. (2015). Malawi National Guidelines: Integrated Catchment Management and Rural Infrastructure Volume 1: Theory and Procedural Catchment Management Guidelines. Lilongwe: Ministry of Agriculture, Irrigation and Water Development.

Ministry of Agriculture and Food Security (2011). Malawi Agricultural Sector Wide Approach: A prioritized and harmonized Agricultural Development Agenda 2011-2015. Lilongwe, Malawi: Ministry of Agriculture and Food Security.

Mughogho, M.T. (1998). Evaluation of the Revised Universal Soil Loss Equation (RUSLE) and the Soil Loss Estimation Model for Southern Africa (SLEMSA) under Malawi conditions. A case study of Kamundi catchment near Mangochi. B.Sc. project report. Department of Agricultural Engineering, Bunda College of Agriculture, University of Malawi.

Munthali, M., Nyondo, C., Muyanga, M., Chimatiro, S., Chaweza, R., Chiwaula, L., Mwalwanda, T., and Zhuwao, F. (2021). Food imports in Malawi: Trends, drivers and policy implications. MwAPATA Institute Working Paper No. 21/01: Lilongwe: MwAPATA Institute.

Mwabutwa, C., Bittencourt, M., and Viegi, N. (2012). Financial reforms and consumption behavior in Malawi. The University of Pretoria, Department of Economics, Economic Research Southern Africa Working Paper 306.

National Statistical Office (2017). Integrated Household Survey 2016-2017: Household Socioeconomic Characteristics Report. Zomba: National Statistical Office.

Niles, M., Esquirel, J., Ahuja, R., and Mango, N. (2017). Climate change and food systems: Assessing impacts and opportunities. Washington, DC: Meridian Institute.

- Nyondo, C., Khonje, M., Mangisoni, J., Burke, W., Ricker-Gilbert, J., and Chilora, L. (2021). Lessons learned: Promises, achievements, and pitfalls of Input Subsidy Programs in Malawi. MwAPATA Institute Working Paper.
- Phiri, M. (2021). Affordable Inputs Program: Fertilizer Association of Malawi Final Report. Lilongwe: Fertilizer Association of Malawi.
- Ragasa, C. (2019). Modeling the effectiveness of the Lead Farmer Approach in agricultural extension service provision. Lilongwe: International Food Policy Research Institute.
- Ricker_Gilbert, J., Jayne, T.S., and Chirwa, E. (2011). Subsidies and crowding out: A double-hurdle model of fertilizer demand in Malawi. *American Journal of Agricultural Economics* 93: 26-42.
- Rockefeller Foundation (2013). Waste and spoilage in the food chain. Decision Intelligence Unit.
- Sayo-Ngowi, A.J. (1990). Effects of continuous cultivation on surface run-off soil loss and some physical characteristics in Tanzania. Paper presented at SADC Land and Water Management Research Program Workshop, Gaborone, Botswana, 8-10 October 1990.
- Schneider, K., Christiaensen, L., Web, P., and Masters, W. (2020). The cost of a nutritious diet for individuals and households in rural Malawi. *Current Developments in Nutrition* 4 (Supplement 2): 904-904. DOI: 10.1093/cdn/nzaa053_109.
- Smale, M., Heisey, P. W. and Leathers, H. D, (1995). Maize of the ancestors and modern varieties: the microeconomics of high-yielding variety adoption in Malawi. *Economic Development and Cultural Change* 43(2): 351-68.
- Southern African Development Community (SADC). Regional Indicative Strategic Development Plan. Gaborone: SADC. https://www.sadc.int/files/5713/5292/8372/Regional_Indicative_Strategic_Development_Plan.pdf [Accessed 08/08/2021].
- United Nations Environment Program (UNEP)(2016). Food systems and natural resources. A report of the Working Group on Food Systems of the International Resource Panel.
- UNEP (2021). Food Waste Index Report 2021. Nairobi: UNEP.
- UNICEF for Every Child (2018). Nutrition Statistics in Malawi. Lilongwe: UNICEF Malawi.
- UNICEF for Every Child (2020). The situation of children and women in Malawi: Facts and Figures. Lilongwe: UNICEF.
- USAID (2021). Malawi Agriculture and Food Security. Feed the Future
- USAID (2014). Malawi Nutrition Data. Lilongwe: USAID.
- USAID.(n.d.).Globalwaters.org. <https://www.globalwaters.org/WhereWeWork/Africa/Malawi> [Accessed on 27/08/2021].
- Van Berkum, S., Dengerink, J., and Ruben, R. (2018). The food systems approach: Sustainable solutions for a sufficient supply of healthy food. Wageningen Economic Research, Memorandum 2018-064.
- Wiyo, K.A. (1993). Land degradation and productivity of farming systems in Malawi. Paper presented at the Food, Agriculture, and Nutrition Policy Research in Malawi workshop. Lilongwe Hotel, May 3-6, 1993.
- World Bank (2020). World Development Indicators. <https://databank.worldbank.org/source/world-development-indicators> [Accessed on 04/07/21].

ANNEX

Table A.1: Existence, quality, and realism of policy on FS components

Food system component	Policy				
	National Fertilizer Policy	National Agriculture Policy	National Multi-Sector Nutrition Policy	Education Policy	Health Policy
Input supply	The goal is to sustainably increase commercial supply, access to, and efficient use of high-quality fertilizers for increased agricultural production and productivity. This is costly to the government and there is limited access to finance among suppliers. Subsidies are unrealistic in the long term.	The goal is to have a commercially focused sustainable and productivity-oriented agricultural production system anchored on specialization and the use of soil-specific, high-quality fertilizers. Implementation of soil specific recommendations can be costly in terms of fertilizer formulations.	Promotes production and dietary diversity. This is realistic because it can be implemented jointly with other sectors such as agriculture and can achieve beneficial results.	Mainstreaming nutrition within the school curriculum and implementation of nutrition-sensitive interventions is realistic and can achieve beneficial results.	Discusses addressing production bottlenecks, particularly for fruits, so that there is dietary diversity. This is realistic as it involves providing advice to farmers.
Processing and packaging	Policy exists but predominantly on fertilizers. This is realistic because it is linked to fertilizer manufacturing.	Policy exists under Policy Priority Area 4 with emphasis on agricultural value-addition and agro-processing as well as the creation of new structured markets for legumes, livestock, fisheries products, oilseeds, sugarcane and coffee. This is realistic and necessary because it would allow Malawi to integrate into regional and international markets.	Promotes bio-fortification and fortification of major staples as well as proper packaging to avoid deterioration of product value. This may not be realistic because rural households mostly consume foods which they produce themselves.	Mainstreaming nutrition within the school curriculum and implementation of nutrition-sensitive interventions. This is realistic because it targets schools that are found country-wide.	Promotes bio-fortification and fortification of major staples as well as proper packaging to avoid deterioration of product value. This is not realistic because rural households mostly consume foods which they produce themselves.
Food production systems	Policy exists to ensure quality fertilizer input for food production systems. However, it is difficult to ensure that fertilizers sold to farmers are not adulterated or sold	Policy exists to encourage farmers to use the best agronomic practices. There is evidence that most farmers have still not taken up sound agronomic practices.	Promotes production diversity. This is realistic and worthwhile because it can be implemented jointly with other sectors such as agriculture. The	Mainstreaming nutrition within the school curriculum and implementation of nutrition-sensitive interventions.	Promotes production diversity. This is realistic and worthwhile because it can be implemented jointly with other sectors such as agriculture. The

Food system component	Policy				
	National Fertilizer Policy	National Agriculture Policy	National Multi-Sector Nutrition Policy	Education Policy	Health Policy
	in bags of inappropriate weight.		primary constraint is the small sizes of existing farms in Malawi.		primary constraint is the small sizes of existing farms in Malawi.
Storage and distribution	Policy exists for proper storage of fertilizers and efficient distribution to farmers. This would work well if fertilizers were imported in good time for distribution to start in September. In reality, fertilizer is often distributed to farmers late in the season due to foreign currency shortages and late importation.	Policy tackles issues of storage and post-harvest losses as well as distribution of agricultural products. This is realistic and worthwhile. Farmers can easily adopt proper storage technologies once demonstrations show that such technologies are effective and efficient.	Integrating nutrition in value chains for nutrition improvement. This is realistic and worthwhile because it can be implemented jointly with other sectors such as agriculture.	Mainstreaming nutrition within the school curriculum and implementation of nutrition-sensitive interventions. This is a realistic objective.	Integrating nutrition in value chains for nutrition improvement. This is a realistic objective.
Retail and marketing	Policy exists to ensure that fair competition exists in retailing for the benefit of farmers. The Fertilizer Association of Malawi (FAM) tries to ensure that traders stick to a code of conduct but some often engage in adulteration and use of bags of inappropriate weight.	Sets minimum prices for agricultural commodities as well as floor and ceiling prices for the staple food, maize, to protect low-income groups. It is not realistic because it is difficult and costly for the government to defend subsidized prices in a liberalized economy.	Integrating nutrition in value chains for nutrition improvement. This is a realistic objective.	Mainstreaming nutrition within the school curriculum and implementation of nutrition-sensitive interventions. This is realistic because it can be jointly implemented with other sectors.	Integrating nutrition in value chains for nutrition improvement. This is realistic because it has the potential for joint implementation with other sectors.
Food safety	Policy does not directly address this.	Policy exists to ensure that all traded agricultural commodities are fit for human consumption. This is difficult to implement due to limited financial and human resources at MBS.	Integrating nutrition in value chains for nutrition improvement. This is a realistic objective.	Mainstreaming nutrition within the school curriculum and implementation of nutrition-sensitive interventions. This is a realistic objective.	Integrating nutrition in value chains for nutrition improvement. This is a realistic objective.
Food availability	Fertilizer is subsidized.	Policy focuses on food security of the	Promoting nutrition education	Mainstreaming nutrition within	Promoting nutrition education and

Food system component	Policy				
	National Fertilizer Policy	National Agriculture Policy	National Multi-Sector Nutrition Policy	Education Policy	Health Policy
	However, this increases the financial burden on the government. It may not be realistic in the long term.	staple food crop, maize. There is less support for other crops and livestock. This support is expensive for the government.	and counselling, especially among low-income groups. This is a realistic objective.	the school curriculum and implementation of nutrition-sensitive interventions. This is a realistic objective.	counselling, especially among low-income groups. This is a realistic objective.
Food affordability	Fertilizer is subsidized to increase production, productivity, and incomes of farmers so that food is affordable. This is costly to the government	Application of a ceiling price ensures that the staple crop maize is affordable. However, it is difficult for government to defend the price. It also hurts production and producers.	The policy promotes the consumption of low-cost but highly nutritious indigenous foods. This is realistic and worthwhile because some of the low-cost, nutritious foods are indigenous.	Mainstreaming nutrition within the school curriculum and implementation of nutrition-sensitive interventions. This is realistic and worthwhile because some of the low-cost, nutritious foods are indigenous.	The policy promotes the consumption of low-cost but highly nutritious indigenous foods. This is realistic and worthwhile because some of the low-cost, nutritious foods are indigenous.
Food messaging	Policy does not directly address this,	Policy does not directly address this	Enhancing ICT in nutrition. This is realistic because of the rising use of mobile phones in both rural and urban areas.	Mainstreaming nutrition within the school curriculum and implementation of a nutrition-sensitive intervention. This is a realistic objective.	Enhancing ICT in nutrition and health care provision. This is a realistic objective.
Food utilization	Policy does not directly address this.	The policy promotes production and dietary diversity. This is a realistic objective. However, the small sizes of landholdings is a challenge.	Enhancing ICT in nutrition. This is a realistic objective.	Mainstreaming nutrition within the school curriculum and implementation of nutrition-sensitive interventions. This is a realistic objective.	Enhancing ICT in nutrition. This is a realistic objective.

